Entrepreneurship in Theory and History

Edited by Youssef Cassis and
Ioanna Pepelasis Minoglou

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palgrave
macmillan

Softcover reprint of the hardcover 1st edition 2005 978-1-4039-3947-0

First published 2005 by
PALGRAVE MACMILLAN
Houndmills, Basingstoke, Hampshire RG21 6XS and
175 Fifth Avenue, New York, N.Y. 10010
Companies and representatives throughout the world

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ISBN 978-1-349-51998-9 ISBN 978-0-230-52263-3 (eBook)
DOI 10.1057/9780230522633

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources.

A catalogue record for this book is available from the British Library.

Library of Congress Cataloging-in-Publication Data
Entrepreneurship in theory and history / edited by Youssef Cassis and Ioanna Pepelasis Minoglou.
p. cm.
Includes bibliographical references and index.
ISBN 978–1–4039–3947–0
1. Entrepreneurship. 2. Entrepreneurship—History.
3. Businesspeople. 4. Creative ability in business.
5. Technological innovations. I. Pepelasis Minoglou, Ioanna. II. Cassis, Youssef.
HB615.E6338 2005
658.4′21—dc22 2004051230

10 9 8 7 6 5 4 3 2 1
14 13 12 11 10 09 08 07 06 05

Transferred to digital printing in 2006.

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Acknowledgements

This volume originates from a conference organized by the Department of Economics, Athens University of Economics, and held on 13–16 June 2002 at the European Cultural Centre of Delphi, Greece. A companion volume devoted to country cases will be published in early 2006. The editors would like to thank the many people who helped them in their endeavours. They are particularly grateful to Professor Vasilis Karasmanis, Director of the European Cultural Centre of Delphi, and his staff for their warm hospitality and embedding the conference in a most inspiring environment, as well as to Professor George Bitros (Athens University of Economics and Business), head of the organizing committee, Maria Zanti for her secretarial support, and Professors Kostas Kostis (Athens University) and Thanos Skouras (Athens University of Economics and Business) for chairing the conference's sessions and enlivening them with their comments. Jacky Kippenberger, of Palgrave Macmillan, has been a most helpful editor. Special thanks go to Keith Povey for his editorial guidance.

The editors would also like to express their gratitude to Professor George Venieris, Rector of the Athens University of Economics and Business, the Greek Ministry of Culture and the Hellenic Bank for their generous financial assistance without which the conference could not have taken place.

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Part I

Introduction

1

Entrepreneurship in Theory and History: State of the Art and New Perspectives

Youssef Cassis and Ioanna Pepelasis Minoglou

Introduction

After a long period of semi-oblivion, academic interest in entrepreneurship and the individual entrepreneur has resurged in the last decade and a half.[1] This resurgence is related to a number of social changes. With respect to big business we hear more and more often that corporate success stems from the entrepreneurial culture of management groups. At the same time we are witnessing the persistence of non-corporate forms of organization as expressed by the revival of small businesses and the rise of an 'enterprise culture'. This culture – although it has usually been interpreted within the context of the 'new economy' as being competitive and individualistic – has also enhanced awareness about the collaborative dimension of entrepreneurship through the international spread of multiple entrepreneurial alliances and networks. Another important factor enhancing recent interest in entrepreneurship is the growing realization of the significance of new businesses in a society increasingly concerned with the problem of unemployment (Swedberg, 2000, 7–8; Amatori *et al.*, 2002, 1).

Ever since Richard Cantillon first introduced the term in 1755, 'entrepreneurship' has been studied from the diverse perspectives of economic theory, sociology, psychology, anthropology, political science, business administration and history. At this stage, given the renewed fascination with entrepreneurship and the multiplicity of alternative interpretations and approaches that have developed, it is time that we attempt to construct interdisciplinary analyses of entrepreneurship which will explicitly combine perspectives that in the past have developed in isolation.[2]

In particular the economic theory and economic history literature on entrepreneurship have developed with little interaction between them. The aim of this book is to contribute to a better understanding of entrepreneurship by drawing theory and history closer together. Joseph Schumpeter was the first to speak of this need. More recently, Mark Casson criticized the dichotomy between the approaches of economic theorists and economic historians, pleading for a convergence between the functional perspective adopted by the former and the indicative perspective of the latter (Casson, 1991, 22–3).

Entrepreneurship in the economics literature

The concept of 'entrepreneurship' has remained elusive despite the academic attention it has attracted. In economic theory 'entrepreneurship' has been defined in myriad ways (Hébert and Link, 1988; Blaug, 2000; Swedberg, 2000). A prominent definition in the contemporary literature considers it as 'judgemental decision making' about the coordination of scarce resources under conditions of uncertainty (Casson, 1991, 23; Casson and Godley, this volume). A wide variety is noted not only with respect to the definition of entrepreneurship but also with respect to the components given precedence in various writings. For some authors, innovating activities are more important than market-equilibrating or management activities while for others the reverse is the case. In some writings, entrepreneurship is studied as performed by individuals while in others it is studied as exercised by groups and organizations.[3] Moreover, it has also been assumed that entrepreneurship or the entrepreneurial function may take the shape of productive, unproductive, or destructive activities, depending on whether they add to, redistribute or subtract from net output.[4] Some of the multifaceted aspects of entrepreneurship – such as its supply or the sources of the ideas of entrepreneurs and their attitude towards risk – by their nature invite more directly the attention of the other social sciences and not theoretical economics proper (as noted by Baumol, 1968, 70).

The many competing interpretations put forward regarding the entrepreneurial process may not allow for the creation of 'sound taxonomies'. However, the following general comments can be offered in an attempt to briefly map the history of entrepreneurship within the economics literature.

In classical political economy, the entrepreneur was not endowed with a distinct identity as was the capitalist,[5] but entrepreneurship was considered a critical element of the economic system. With the birth of the competitive general equilibrium model in Walras's *Elements of Pure Economics* (1870), the entrepreneur was eliminated from the analysis, being taken for granted.[6] The main representative of neoclassical orthodoxy, Alfred Marshall (*Principles of Economics*, 1890), reintroduced the entrepreneur without, however, assigning them a dominant role. It was Frank Knight (1921) who marked the definitive contribution of the neoclassical school to the study of entrepreneurship. Within the context of the neoclassical framework of perfect competition and general equilibrium, Knight cast the entrepreneur as a key figure in the economic system, assigning them the distinct role of a decision-making agent 'within an uncertain environment' (Hébert and Link, 1988, 77; Baretto, 1989, 38–42, 55; Swedberg, 2000, 19, 20). A decade after Knight's advance, entrepreneurship vanished from neoclassical theory once again.

In the meantime, since the late 1800s some theoretical insights on entrepreneurship were being formulated within diverse quarters such as the American Institutionalist School and the Austrian School of Economics.[7] The most seminal contribution was that of Joseph Schumpeter, who cannot be classified *strictu sensu* as belonging to a specific school of thought, although he was affiliated with the Austrian School of Economics. In his *Theory of Economic Development* (1911), Schumpeter first outlined what is still considered by most as the 'grand' statement of a general theory of entrepreneurship.[8] Schumpeter rejected the twin assumptions, prevalent before him, that economic change is induced exogenously and that entrepreneurial activity is a response to exogenous forces. In contrast, he constructed an endogenous 'growth' theory in which the entrepreneur is the source of all dynamic change in the economy. A 'creative rebel', the Schumpeterian entrepreneur creates disequilibrium and plays a key role in economic development, by breaking away from the path of routine and implementing innovations. The insights of Schumpeter later exerted a strong impact on the School of Evolutionary Economics and economic historians, but they failed to affect conventional economic analysis

(Penrose, 1959; Loasby, 1982, 240; Nelson and Winter, 1982; Hébert and Link, 1988, 98, 99, 114; Blaug, 2000, 83; Swedberg, 2000, 12; Adaman and Devine, 2002).

In the modern era, entrepreneurship has been neglected at the theoretical level although there appears to be consensus among mainstream economists that it is crucial for the 'vitality' of capitalist society and the market economy (Baumol, 1968, 64; Casson, 1991). Entrepreneurship is spontaneous. Its elusive and ever-changing nature defies attempts to submit it to the formal mathematical modelling of mainstream theory. In the 'ideal type' economy of the contemporary neoclassical paradigm there is no need for entrepreneurial initiatives (Loasby, 1982, 245; Casson, 1987). At a micro level, static equilibrium analysis, the perception of perfect markets and information, the trivialization of decision-making and the notion of the firm as a black box exclude by definition entrepreneurial action. To phrase it otherwise, the neoclassical 'theoretical' firm is entrepreneurless.[9] On the other hand, within macroeconomics there is a tendency to assume that economic progress is automatic (Swedberg, 2000, 21).

Thus, in recent years, the major theoretical advances in the study of entrepreneurship have been achieved almost exclusively by scholars critical of mainstream economic analysis (Hébert and Link, 1988, 130–4). The study of entrepreneurship has flourished in particular within two areas: first, in the Neo-Austrian School, in which entrepreneurship is defined as alertness to profit opportunities, and the entrepreneur is perceived as an arbitrageur and an equilibrating force in the economic system (Kirzner, 1973); and second, in the modern Institutionalist and Evolutionary tradition, which applies dynamic economic analysis to specific historical time and contexts (Nelson and Winter, 1982; Galambos, 2003, 21–3). Moreover, Mark Casson, an eclectic theorist who cannot be classified in either of the above two groups, has made an important mark in the literature by synthesizing and extending insights from the work of Knight, Kirzner, Schumpeter and the modern Evolutionary tradition (Casson, 1991; and Casson and Godley in this volume).

Although entrepreneurship has never in the modern era been at the forefront of mainstream economic theory, over the years some 'orthodox' economists have offered interesting insights. Baumol (1968) discussed the potential of neoclassical theory to contribute towards an explanation of the factors which determine the allocation of entrepreneurial activities. Albert Hirschman (1958), Harvey Libenstein

(1968) and Daniel Leff (1979) with a critical eye explored from theoretical perspectives the significance of entrepreneurship in the process of economic development.[10] More recently, Evans and Jovanovic (1989) have 'modelled' the supply of entrepreneurship as a choice between employment and self-employment. However, it remains to be seen whether mainstream economics will succeed in reaching a convincing explanation of entrepreneurship, and if and how the nature of conventional economic theory may 'radically' change in the process (Casson, 1987, 153; and Casson and Godley in this volume).

For the time being, in the absence of a definitive theory of entrepreneurship and the coexistence of alternative interpretations, the list of the ongoing debates among economists regarding entrepreneurship is long. The following issues stand out at present:

- Is it legitimate to strive for one a-spatial and a-temporal typology of entrepreneurship?
- To what extent can the roles of the entrepreneur and capitalist be separated?
- Is risk-bearing an entrepreneurial function or is it borne by the capitalist?
- How in practical terms can we make the distinction between entrepreneurship and management?
- To what extent is it useful to use the term 'entrepreneur' as synonymous to the word 'firm'?
- What is the relationship between entrepreneurs and their environment and more specifically what is the impact of the social environment on entrepreneurship?
- How is entrepreneurship connected with change?
- Is a growing supply of entrepreneurship a necessary condition for economic growth, particularly as less developed countries are concerned?
- Are entrepreneurs a disequilibrating force disturbing previous equilibrium or are they agents 'seizing upon' a disequilibrium situation and working to restore equilibrium?
- Do entrepreneurs cause change or do they simply recognize that change has occurred?

These are among the many debates flourishing in the field. As entrepreneurship is in the process of attracting ever greater attention within and beyond the discipline of economics, new issues and topics of debate will inevitably arise. For many if not most of these issues, the entwinement of theory with history will undoubtedly offer great promise in the attempt to arrive at provisional answers (Loasby, 1982, 242–4; Hébert and Link, 1988, 25; Blaug, 2000, 84).

Entrepreneurship in the economic history literature

By its nature, entrepreneurship is related to the process of economic change, and the study of economic change lies at the heart of economic history.As is the case with respect to theory, so too with respect to economic history diverse interpretations of entrepreneurship are to be found. Some scholars have emphasized the perplexity and the constant fluidity of the entrepreneurial function.[11] The ever-changing character of entrepreneurship has even been conceived by some in terms of a stages 'theory'.[12] As a prime example of 'historical specificity' (see Hodgson, 2001 for a detailed analysis of the concept), entrepreneurship appears over time to have differed significantly among dissimilar societies and institutional contexts (Gershenkron, 1966).

The rich literature on entrepreneurship within economic history consists of a mixture of studies in 'pure' economic history and the more specialized fields of entrepreneurial history and business history. The methods employed have ranged from the traditional narrative hagiographic historical accounts on business leaders to theoretical and quantitative historical analyses of the entrepreneurial function. In the attempts to explain entrepreneurship in history, scholars have at times co-mingled history with mainstream and revisionist economics, sociology, social and cognitive psychology, anthropology, management and the study of technology. Research on the history of entrepreneurship has mainly been undertaken within national 'schools'. Since the inception of the subject, Anglo-American (US) contributions have dominated the literature, in spite of a long-term interest in the topic in continental Europe and the recent and rapidly expanding interest evidenced in Australia, Asia and Latin America (Amatori and Jones, 2003; Cassis and Pepelasis Minoglou, forthcoming).

The first attempts at the writing of the history of entrepreneurship originated in the late nineteenth century. In these early days, in an empirically based 'twist', the concept of entrepreneurship was identified with the entrepreneur. The latter was naively idealized as an agent – 'creator of the wealth of nations' – although a few dissenting scholars underlined the 'misdoings of entrepreneurs who had created large firms'.[13] The entrepreneur was a central figure in the initial writings of business history which was conceived as an academic discipline in the 1920s by N.S.B. Gras of the Harvard Business School (Redlich, 1962, 61–2). Gras analysed the activities of businessmen over time within the context of a stages schema for the historical evolution of capitalism (Soltow, 1968, 84–5). However, over the next two decades, these initial ties of business history with the wider world of economic history loosened, and at the same time the focus of research in business history shifted from the individual entrepreneur to the study of individual firms.[14]

Within the Chandlerian synthesis, which became the central intellectual paradigm in business history in the early 1960s and reigned for nearly thirty years, the corporation became the basic unit of analysis. According to some, this shift in focus from the individual entrepreneur to the organization ushered in a near permanent eclipse of the concept of entrepreneurship in business history (John, 1997). However, it has been recently argued that throughout Chandler's work, an engagement with entrepreneurship is evident and that what changed was the perspective and not the substance, the entrepreneurial function persisting in the large corporate organization (Sicilia, 1995, 37; Cuff, 2002, 129). Whether or not Cuff's revisionist interpretation is accepted, it cannot be overlooked that Chandler enhanced the analytical scope of business history as a discipline.

The alternatives to the Chandlerian synthesis which have developed since the early 1990s have prompted business historians to study other elements of the business experience outside the corporation and to focus more closely on the concept of entrepreneurship and the individual entrepreneur.[15] Moreover, in terms of methodology business history is beginning to come closer to economics. The analytical tools of transaction cost economics or the economics of imperfect information (two approaches embedded in mainstream economics) are infiltrating some parts of the business history literature, while the attempt to integrate economic theory and business history has also involved the development of theoretical approaches which question mainstream theory – as portrayed, for example, by the development of the historical-transformation methodology by William Lazonick in his work on innovative enterprise (Lamoreaux *et al.*, 1997, 61; Scranton and Horowitz, 1997; Cuff, 2002, 128–31; Galambos, 2003, 29; Lazonick, 2003).

At this point some historical background is necessary:

It should be noted that 'entrepreneurial history' as a discipline was formally established not within the world of business history but at the Harvard Research Center in Entrepreneurial History which was established in 1948 (Saas, 1978). The work of Schumpeter, whose theoretical framework served as a definitive point of reference among economic historians studying entrepreneurship, helped inspire the creation of the Center, which was directed by the economic historian A.H. Cole. During its ten-year lifespan, the Center had an international scope[16] and fostered diversity and creative interaction between economists and historians in the study of entrepreneurship.[17]

Most scholars affiliated with the Center introduced *a priori* some type of theory into their work. Some embedded their analyses of entrepreneur(ship) within the context of culture, the structure of social values, sanctions, authority and roles in economic society. More specifically, Parsonian sociology and the organization theory of Chester I. Barnard were applied by Leland Jenks, Thomas C. Cochran and Fritz Redlich. When the Harvard Research Center in Entrepreneurial History closed in 1958, its members dispersed and 'entrepreneurial history' as a sub-discipline slowly vanished. Cochran and more notably Chandler, as mentioned above, became prominent in the world of business history. Others became involved in the rising cliometric movement in economic history. This movement, also known as New Economic History, applied mathematical models to the study of past economic growth, emphasizing not entrepreneurship, but the role of natural resource endowments, income levels and the size of the domestic market in industrialization (Sass, 1978, 86–8; Lamoreaux *et al.*, 1997).

But even outside the realm of cliometrics, there were forces obstructive to the study of entrepreneurship within economic history. For example, Peter Mathias (1983), who had also been affiliated with the Harvard Research Center in Entrepreneurial History, questioned (along with others such as Donald McCloskey, H.J. Habakkuk and Alexander Gerschenkron) the Schumpeterian canonical assumption of the hero-entrepreneur as an independent variable in the economic system, thus implicitly either downgrading altogether the importance of entrepreneurship in economic growth or at best proposing that it be analysed in relation to real factors and as a response to specific contexts. Moreover, in the new institutional economic history, the other major intellectual movement in economic history in the post-second world war era, entrepreneurs were described as passive agents simply responding to 'opportunities to maximize profits'. Technological innovation was explained as being 'induced' not by entrepreneurship, but by changes in relative prices while economic growth has been treated as a product of efficient organizations (Lamoreaux *et al.*, 1997, 60; North, 1966, 8, 52; North and Thomas, 1973). On the other hand, more recently Douglass North (1990, 83) has described the individual entrepreneur as an 'agent of change', while E.L. Jones (1991, 1993) has discussed the importance of encouraging entrepreneurship for economic growth. Nevertheless, a new institutional theory of entrepreneurs(hip) has not yet emerged (Swedberg, 2000, 34–6).

Entrepreneurial history is now in the process of being reborn as an interdisciplinary field where new ideas in economics, economic and business history, cognitive psychology and management studies are interacting and giving rise to new methodological approaches and new research agendas. While there are multiple exciting new directions taken by recent research, only a few can be mentioned here. The embedding of the micro history of entrepreneurship within the macro-historical institutional and cultural environment is one such direction. The exploration of the links between entrepreneurship and the firm is another. With respect to the latter it should be noted that while business and entrepreneurial history have interacted to some extent, the theory of the firm has developed in isolation from the theory of entrepreneurship. It remains to be seen whether the move of the theory of the firm closer to history will have as a spin-off a better theoretical explanation of entrepreneurship in its historical context.[18]

In sum, much work lies ahead with respect to understanding the causal mechanisms and underlying structures of the function of entrepreneurship in theory and history. In the attempt to link theory with history, three interrelated questions have loomed large and remain unresolved. First, how can theory improve historical interpretation? Second, how can historical evidence improve theory? Third, over time, can some historical stylized facts or regularities be detected? At the moment, mainstream economics is still far removed from constructing more (historically) informed theoretical models of entrepreneurship and within economic history a systematic testing of hypotheses regarding entrepreneurship is almost non-existent. These structural 'weaknesses' and the failure to reach a coherent and comprehensive explanation of entrepreneurship are reflected in the past and current big debates in entrepreneurial history.

Enduring and new debates in entrepreneurial history

What have the grand themes been in the study of entrepreneurship within economic history in the wider sense?

At one level, the themes reflect – from a more empirical perspective – the questions asked by theorists and they have a general scope. For example, in this category we can here include the following questions. How do entrepreneurs discover opportunities and how do they overcome obstacles and make decisions? What are the personal sources of entrepreneurship? How are entrepreneurs shaped by external factors such as cultural and political institutions? How does entrepreneurship alter over time? How has the transformation of entrepreneurship over time changed the nature of the economy? More specifically what is the relationship between the industrial revolutions and entrepreneurship? Do we have to differentiate on the basis of historical evolution?

At another level, there are the grand debates regarding specific periods and nations. Among the more famous debates was whether national differences in the spread of entrepreneurship can be explained by differences in the system of values, namely, whether the entrepreneur can flourish in an 'unfavourable' institutional and cultural environment. This debate took a comparative dimension and focused on the American versus the French case. It involved, on the one hand, David Landes and John E. Sawyer, who attached importance to the socio-cultural setting for the flourishing of entrepreneurship, and Alexander Gerschenkron, on the other hand, who maintained that national differences in entrepreneurial behaviours are related to factors such as different levels of income and availability of natural resources. (For a summary of this debate that also involved a discussion of the Gershenkronian model which emphasizes the role of 'substitutive factors' to the entrepreneur in the context of late industrializers, see Amatori *et al.*, 2002.)

Another famous debate was whether the stereotype of the 'declining' British entrepreneur can serve as an explanatory factor for the relative 'failings' of Britain between 1870 and 1914 *vis-à-vis* Germany and the USA (Habakkuk, 1962; Landes, 1969; McCloskey, 1973; Mathias, 1983; Elbaum and Lazonick, 1986; Payne, 1990).

Though it can be classified neither as a debate nor as a grand theme, the substantial work on company monographs and business biographies, both individual and collective, has of course played a major part in the formation of the entrepreneurial history literature, by offering unique insights into the make-up of the entrepreneur, through the analysis of social and family background, education, network of relationships, personal motivation and so on. However, the concept of entrepreneur has tended to be used rather loosely in this context, often in the sense of business leaders or simply businessmen, and occasionally businesswomen.

In the last few years there has been a growing interest in entrepreneurship in connection to family and network capitalism (Rose, 1995; Colli, 2003) and international business (Jones, 1996, 2000). In addition, more research is being done on the role of ethnic minorities in business enterprise and cross-cultural comparisons (Baghdiantz McCabe *et al.*, 2005; Cassis and Pepelasis Minoglou, forthcoming). The bias in the literature towards the study of only successful or only male entrepreneurs is slowly breaking down as is also the bias of studying entrepreneurs(hip) only within the context of the private sector (Toninelli, 2000; Gourvish, 2002).

The essays: bringing economic theory and (economic) history closer together

What new ideas does this volume have to offer?

The difficulty of integrating theory with history in the study of entrepreneurship has long been noted in the literature (for example, Aitken, 1965). This volume works in the direction of tackling this problem, the aim being a more coherent and systematic understanding of entrepreneurship at a theoretical level and a more satisfactory interpretation of the historical evidence. The contributions of this volume are divided into two parts: the theoretical and the thematic.

The theoretical part consists of Chapters 2 to 4. Each of these three chapters from a distinct and differing perspective adds a new important dimension to the theoretical study of entrepreneurship. The integrating of the theoretical and historical study of entrepreneurship is discussed in detail in Chapters 2 and 4.

Mark Casson and Andrew Godley open the theoretical part of the volume in their study (Chapter 2) in which they introduce an eclectic theory of entrepreneurship that aims at improving historical interpretation. This theory, while 'rooted' in modern economics, is outside the narrow confines of conventional cliometrics and emphasizes the importance of culture and institutions. This approach examines the factors influencing the supply and demand of entrepreneurship, the contractual position of the entrepreneur and the role of the entrepreneur in the formulation of business strategy and organizational structure, thereby linking entrepreneurship to the firm. The eclectic theory put forward by Casson and Godley presents the entrepreneurial function as decision-making under conditions of uncertainty. It generates the following propositions on the nature of judgement, which can be tested by historians in practice: successful entrepreneurs are more likely to be mature people; and may well be outsiders and well-connected.

George Bitros in Chapter 3 explores from the perspective of mainstream economics the important issue of the interrelationship between entrepreneurship on the one hand and economies of scale and scope on the other. He addresses the question of how such economies may affect the inclination of individuals and business concerns to exercise entrepreneurship, the emphasis being on entrepreneurial activities related to coordination and innovation. The findings suggest that a trade-off may exist between smaller business units with high market coordination to innovation ratios and larger business units with low market coordination to innovation ratios. The author notes how the development of multi-product technologies characterized by economies of scale and scope has led over the last decades to losses in market coordination because they increased market imperfections.

In Chapter 4 James Foreman-Peck illustrates how theory and evidence have been, and may be, quantitatively linked in the historical study of entrepreneurship, thereby allowing judgements about entrepreneurship's causes and effects with increasing precision. First, the author considers the implications of identifying entrepreneurs with business founders and the corresponding measure of entrepreneurship, the number of new firms established. The supply of entrepreneurship is then analysed as a choice between employment, self-employment and, in some circumstances, unemployment. Either well-being or the expected profit, income or wealth from the employment options are the objects of choice. Profit or wealth is therefore contemplated as a possible indicator of entrepreneurial performance in particular contexts. The determinants of entrepreneurship are the factors that influence the choice of employment. Credit rationing is especially addressed, since even small businesses require capital, which may not always accompany entrepreneurial talent. The focus then shifts to distinctive historical measurement and estimation problems, including those arising from entrepreneurial culture and social mobility. The survey goes on to address measures of entrepreneurial optimization, concentrating first on choice of technique of production and then on total factor productivity indices that embody this choice, distinguishing aggregate performance from that of the individual entrepreneur.

The thematic part covers four distinct themes. It opens with François Caron (Chapter 5) who examines the process of innovation within the firm and puts forward a general schema for the role of innovation in the entrepreneurial process. The analysis brings out three aspects of the role of innovation in the entrepreneurial process. The first is the 'awareness of changing needs' as a necessary condition for the success of a product or a process innovation. The second is the process of accumulating knowledge and technological–organizational competences, as a determinant of the strategic choices and technological trajectories of the firm and the shape of innovative management. The third is a comparison of the capacity to innovate between big firms and newcomers. Historically, the role of new firms has been decisive for promoting major innovations, especially product innovations. Yet large firms develop strategic research that enables them to be competitive by being able to seize (at the right time) the opportunities presented by technology or by the market at strategic moments, so as to promote innovations or to control their development thanks to strategies based on patent record registration and standards definition. In the analysis the author underlines the importance of cooperation between big firms and young innovative firms in the innovation process.

In Chapter 6 Richard Coopey outlines the intricate and complex relationship between investment and entrepreneurship. At one level the entrepreneur needs investment support and must demonstrate a range of entrepreneurial skills in addition to an innovative or successful product, or market opportunity, in order to attract funding. From the perspective of the investor, however, a similar level of entrepreneurship is necessary in order to find, assess and structure investment in investee firms. Historically the venture capital sector forms a very interesting case study, as Coopey points out, reconnecting the entrepreneurial investor with the entrepreneurial firm in a way that echoes earlier phases of, more localized, investment practice. Beyond this, however, venture capital provides a new dimension to entrepreneurship in investment in the way in which venture capitalists seek funds to invest. In unlocking institutional funds in particular, venture capitalists themselves needed to display a range of entrepreneurial skills which placed them outside the mainstream of banking in postwar Britain and the USA.

In Chapter 7 Youssef Cassis examines the creators of large companies, who epitomize the very idea of entrepreneurship, whether one looks at their achievements or at their personality and motivation. While it might be too restrictive to define entrepreneurship as the creation of a large company, there can be little doubt that whatever definition is given to entrepreneurs, it will always include the founders of large enterprises. Cassis shows that the proportion of large companies led by their founder was far from negligible in the first part of the twentieth century, especially though not exclusively in the new industries; and that company founders present some common characteristics which differentiate them from 'ordinary' business leaders.

Chapter 8 is an interdisciplinary case study in diaspora entrepreneurship. Stavros Ioannides and Ioanna Pepelasis Minoglou show how the history of trading diasporas can provoke the creation of useful theoretical insights for the study of entrepreneurship. The authors, through a comparison of Western and Greek diaspora nineteenth-century trading companies, strive for a better explanation for why the Greek diaspora traders showed a preference for organizations that were less hierarchical, more volatile organizationally and less dependent on direct family relationships compared to their Western counterparts. At a theoretical level the analysis challenges the division which exists between the study of economic organization and the study of entrepreneurship. Through the interwining of history with theory, this chapter prompts a rethinking of conventional theoretical perspectives because it provides insights on how the process of the formation of concrete economic organizations is related to entrepreneurship.

The varied perspectives presented in this volume reflect many of the new directions in the study of entrepreneurship and the ways in which theory and history may successfully integrate. Important questions continue to endure; the answers we do offer to some of the questions may change in the future, but nevertheless hopefully we will have contributed towards enhancing the interdisciplinary and comprehensive analysis of entrepreneurship.

Notes

1. For the livelier interest the other social sciences and not economics have shown in entrepreneurship, see Swedberg (2000).
2. Since the publication of Paul H. Wilken's *Entrepreneurship: A Comparative and Historical Study* (1979), to our knowledge there has been no formal and collective attempt to combine economic theory and economic history in the study of entrepreneurship.
3. For recent references to the multiplicity of definitions, see Shane and Venkataraman (2000) and Adaman and Devine (2002).
4. For recent attempts to assess entrepreneurial activity from a value system which instead of referring simply to additions to net output takes into consideration wider social factors such as, for example, the quality of life, equity, and social stability, see Devine (2002).
5. With the exception of Jean Baptiste Say, who, in the early nineteenth century, assigned to the entrepreneur the first time a distinct role *vis-à-vis* the capitalist, and of John Stuart Mill, who noted the difference between interest on capital and the profit of the entrepreneur (Adaman and Devine, 2002).
6. Interestingly, Walras (1870) devoted a chapter on the entrepreneur (Lesson 19), and in Lesson 40 he blamed the 'English School' for failing to distinguish between 'the interest on capital and the profit of enterprise'.
7. Among the American Institutionalists, the contributions which stand out are those of Francis Amasa Walker and Frederick Hawley, who emphasized the distinction between entrepreneurs and capitalists, and the work of Herbert Davenport which placed entrepreneurship at the centre of his economic analysis. The Austrians advocated an economic theory that accounted for the role of individuals and their desires and which placed the entrepreneur at centre stage in the economic system (Hébert and Link, 1988).
8. He expanded on his theory of entrepreneurship in *Business Cycles* (1939) and *Capitalism, Socialism and Democracy* (1952).
9. For how entrepreneurship virtually disappeared from orthodox microeconomic theory in the 1930s see Barreto (1989).
10. Other such cases of new directions taken within the neoclassical paradigm being the ideologically controversial approach initiated by T.W. Schultz which examines entrepreneurship from the point of view of human capital

(1975, 1980) and the work of Kenneth Arrow (1983) which observes the division of labour that tends to develop between large and small firms in terms of entrepreneurship and innovation.

11. For a discussion why this is so – for example, in relation to US twentieth-century entrepreneurship – see Cole (1954).
12. See Cole (1946), who visualized entrepreneurship as evolving in three stages: the empirical, the rational and the cognitive.
13. Early representatives of this idealized perception were Andrew Ure and Samuel Smiles in Britain (Mathias, 1983).
14. This is, for example, in the work of Cole (1959) and Aitken (1965) who emphasized entrepreneurship as a function of organizations 'rather than individuals' (Cuff, 2002). Moreover, Schumpeter himself began to have second thoughts about the individualist nature of his initial theory of entrepreneurship. Namely, he shifted the entrepreneurial locus in the economy from the individual to the corporate level. For this shift see Swedberg (2000) and Schumpeter [1949] (1989).
15. At this point let it be noted that even during the Chandlerian heyday, in spite of the more general preoccupation with the corporation, some scholars continued to study the individual entrepreneur, for example Jonathan Hughes (1966) and Cochran (1977) (the latter continuing in his writings to emphasize the role of culture).
16. The studies of the Center included not only the developed world but also developing economies, such as Latin American, North African and Asian countries (Soltow, 1968, 89).
17. For a general discussion of the diversity expressed within the Center in terms of theoretical approaches and definitions, see Aitken (1963), Cochran (1968), Soltow (1968, 85–7) and Sicilia (1995, 32, 36–8).
18. This move of economics closer towards history is also reflected in the work of Oliver Williamson in his 'dialogue' with Chandler and in the work of Paul David in his theorizing (on the basis of the concept of path dependency) about the historical patterns of innovation (Galambos, 2003).

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Part II

Theoretical Approaches

2
Entrepreneurship and Historical Explanation

Mark Casson and Andrew Godley

The entrepreneur is a leading character in many accounts of economic growth, appearing in business biographies as a charismatic founder of a company; in industry studies as a prominent innovator, or a leading figure in a trade association or cartel; and in general economic histories as one of the hordes of self-employed small business owners who confer flexibility and dynamism on a market economy. Entrepreneurship is not confined to a private sector; it can also be discerned in the personalities of people who establish progressive charitable trusts and reform government administration.

Yet this very ubiquity of the entrepreneur is a cause for concern. Entrepreneurship means different things to different historians. It is rarely defined explicitly, and controversies over entrepreneurship often involve questions of semantics as well as fact. Few definite hypotheses have been deduced from theory, and few law-like generalizations have been advanced from case-study evidence.

An adequate account of entrepreneurship must address the following issues:

1. What does the introduction of the entrepreneur add to our understanding of economic history? Do accounts of entrepreneurial behaviour supplement statistical evidence, or merely retell the same story through biographical anecdote?
2. Is entrepreneurship just a label for an area of ignorance? Does it – like 'culture' and 'institutions' – sometimes just denote residual causes of growth that cannot be properly measured?

3. Can anyone really know what goes on inside the mind of an entrepreneur? If not, what is the point of speculating about the subject?

These questions can only be answered by a systematic theory of the entrepreneur. This theory must generate hypotheses, either about entrepreneurs themselves, or about the economies to which they belong. To be relevant to economic history, these hypotheses must explain historical evidence that other theories cannot address.

This chapter introduces a theory of entrepreneurship which, while rooted in modern economics, synthesizes the principal insights of the canonical authors on entrepreneurship. This synthesis presents the entrepreneurial function as one of decision-making under conditions of uncertainty. This approach to entrepreneurship enables the inclusion of some topics often ignored by other writers on the topic. For instance, earlier theories of entrepreneurship had little to say about firms. By contrast, this chapter examines in detail the contractual position of the entrepreneur, and the role of the entrepreneur in the formulation of business strategy and organizational structure. Furthermore, it argues that because entrepreneurs are highly mobile, the conventional pessimistic conclusions to debates on 'declinism', family capitalism and ethnic entrepreneurship need to be revised. Overall, therefore, it presents a more systematic approach to the discussion of entrepreneurship in economic history which leads to a more satisfactory interpretation of existing evidence.

The canonical literature

Economic theories of the entrepreneur from Cantillon to Kirzner

Cantillon and risk

The term 'entrepreneur' appears to have been introduced into economic theory by Richard Cantillon (1759), an Irish economist of French descent. According to Cantillon, the entrepreneur is a specialist in taking on risk, 'insuring' workers by buying their output for resale before consumers have indicated how much they are willing to pay for it. The workers receive an assured income (in the short run, at least), while the entrepreneur bears the risk caused by price fluctuations in consumer markets.

Knight and uncertainty

This idea was refined by the US economist Frank Knight (1921), who distinguished between risk, which is insurable, and uncertainty, which is not. Risk refers to recurrent events whose relative frequency is known from past experience, whilst uncertainty relates to unique events whose probability can only be subjectively estimated. Knight thought that most of the risks relating to production and marketing fall into the latter category. Since business owners cannot insure against these risks, they are left to bear them by themselves. Profit is a reward for bearing this uninsurable risk: it is the reward of the pure entrepreneur. With freedom of entry into industries, profits in one industry can exceed profits in another industry in the long run only if the uncertainties are greater in the more profitable industry – in other words, if the demands on entrepreneurship are greater in that industry.

Schumpeter and the hero-entrepreneur

Popular notions of entrepreneurship are based on the heroic vision put forward by Joseph A. Schumpeter (1934). The entrepreneur is visualized as someone who creates new industries and thereby precipitates major structural changes in the economy. Entrepreneurs innovate by carrying out new combinations; they are not pure inventors, because they adopt the inventions made by others, nor are they financiers, because they rely on bankers to fund their investments. Entrepreneurs take the crucial decision to commit resources to the exploitation of new ideas. An element of calculation is involved, but it is not pure calculation, because not all of the relevant factors can be accurately measured. They are motivated by profit, but not purely by profit: the other motivators include the 'dream and the will to found a private kingdom'; the 'will to conquer: the impulse to fight, to prove oneself superior to others'; and the 'joy of creating'.

Marshall and low-level entrepreneurship

Schumpeter was concerned with the heroic or 'high-level' kind of entrepreneurship that, historically, has led to the creation of railways, the development of the chemical industry and the growth of integrated oil companies. A weakness of his analysis is that it leaves little room for the much more common, but no less important, 'low-level' entrepreneurship carried on by small firms. Few economic histories nowadays would ignore the important role of small firms in economic development. Alfred Marshall (1919) emphasized their importance and described the role of these firms in some detail, but critically omitted them from his formal analysis of supply and demand. Given the techniques that were available to him, Marshall could only model equilibrium situations, and so could not fit entrepreneurship into his analysis. But he explicitly recognized the importance of low-level entrepreneurship.

The Austrian School and arbitrage

The essence of low-level entrepreneurship can be explained by the Austrian approach of Friedrich A. von Hayek (1937) and Israel M. Kirzner (1973). Entrepreneurs are middlemen who provide price quotations as an invitation to trade. While bureaucrats in a socialist economy have little incentive to discover prices for themselves, entrepreneurs in a market economy are motivated to do so by profit opportunities. They hope to profit by buying cheap and selling dear. In the long run, such differentials, once discovered, generate a profit for the entrepreneur.

The difficulty with the Austrian approach is, however, that it isolates the entrepreneur from the organization of routine activities, which is so characteristic of a firm. It fits an individual dealer or speculator far better than it fits a small manufacturer, say, because the latter has to oversee an organization whereas the former does not. For a fuller understanding of entrepreneurship we need to clarify the link between the entrepreneur and the firm.

Synthesis

Judgemental decision-making

The insights of these economists can be synthesized by identifying an entrepreneurial function that is common to all approaches. This is the exercise of judgement in decision-making (Casson, 1982). Judgement is the ability to come to a sound, defensible decision in the absence of complete information. Middlemen who buy before they know the price at which they can resell must make a judgement about what the future price will be, for instance. Or arbitrageurs must make a judgement about where price differentials are most likely to be found, in order to focus their price discovery effort on a suitable segment of the market. Innovators must assess whether a new product will prove attractive to consumers, or whether a new technology will really cut costs by as much as its inventor claims.

If information were freely available, and could be costlessly processed, then there would be no need for judgement. Every decision would be correctly taken and no mistakes would ever be made. But in practice information is costly. It is time-consuming to make and record observations. Human memory capacity is limited. Interpretative skills are scarce. Above all, communication is an expensive process. It follows that people do not have all the information they need when taking a decision.

When decision-makers cannot afford to collect all the information they need, they have to act under uncertainty. But the uncertainty faced by one person may be different from the uncertainty faced by another person. Sources of primary information are highly localized: for example, only people 'on the spot' can directly observe an event. Different people in different places will therefore have different perceptions of any given situation. They may therefore make different decisions. The nature of the decision therefore depends on the identity of the person who makes it. The entrepreneur matters because their judgement of a situation is potentially unique.

Not all information is reliable. The senses may be confused, but the biggest risk relates to information obtained from other people. The other person may be unreliable, or their message may be misunderstood. Alternatively, they may set out deliberately to mislead, so that they can extract more profit from their information for themselves. One person may check their information sources more carefully than another, and therefore stand less chance of being misled.

The interpretation of information may differ too. Different people may hold different theories about the way the environment works. As any social scientist knows, it is difficult to test conclusively between rival theories because of data limitations. Thus different theories coexist because of these, leading to different interpretations of similar evidence. In a business context, entrepreneurs may act differently on the basis of similar information because they interpret the situation in different ways.

If a situation recurs frequently, it is worthwhile investigating it carefully in order to find the theory that fits it best. This theory identifies which information is required to make the correct decision. Arrangements can be made to collect the information on a regular basis, so that it is always to hand when required. Whenever a decision needs to be made, this information is processed using an appropriate decision rule in order to arrive at a correct decision. If some information is very costly to collect, then its costs have be traded off against its benefits to arrive at the correct decision rule. This rule does not guarantee the correct decision; but it is optimal in economic terms, in the sense that it trades off the risk of a mistake against the saving in information cost.

Once this optimal decision rule is known there is no further need for the entrepreneur. Everyone knows how the decision rule has been specified, and so no reward can be earned by those who take the decision properly.

Now consider the opposite case in which no such rule is available. This is likely to involve a novel situation. It either has no precedent, or is so unusual that it never pays to investigate it fully. Nobody knows the correct decision rule, and nobody systematically collects information on the situation. The more complex the situation, the more inadequate the theory is likely to be. There may be no theory at all, or there may be a range of rival theories which it is difficult to choose between. There may be no information, or a surfeit of information, because no one is quite sure what information is relevant and what is not. Matters are even worse if the decision has to be arrived at quickly – for example, because the situation is unstable, and will continue to deteriorate until something is done. This is the kind of situation that calls for the most intensive judgement. To improvise a decision quickly, people have to rely on the theories with which they are already familiar, and the information that they can retrieve from their memory. Differences in theories, combined with differences in memories, lead to differences in decisions.

In the intermediate case, the situations are less complex, more relevant information may be available and situations less volatile. But once again, the people with the most relevant theories and the most comprehensive memories will tend to make the best decisions. These are the entrepreneurs – they possess the quality of judgement required to improvise a decision successfully when no agreed decision rule is available. Entrepreneurs – whether at a high or low level – are therefore those who exercise entrepreneurial judgement.

Complexity of decisions

To fully operationalize this theory, it is necessary to specify the nature of complexity. Complexity is best defined in terms of the size of the model that is required to represent the principal features of the situation. So far as entrepreneurship is concerned, the involvement of other 'major players' in the situation is a major source of complexity. Other firms are important players, whether as competitors or as potential partners in alliances. The government is also obviously an important player, particularly in industries connected with defence, where it is a customer as well as the policy-maker. The greater the strategic skills of the other players, the more complex the situation becomes. International business issues are more complex than domestic issues, for instance, because there are a larger number of skilful players involved.

Examples of judgemental decisions include the following:

- An opportunity to exploit a new technology has been identified and a quick decision is required in order to preempt a rival. The investment is irreversible – that is, the costs are sunk – so that a mistake cannot be corrected afterwards. The revenue stream is uncertain, and cannot be guaranteed by forward sales of output. Should the investment be undertaken right away?
- A new source of competition has just emerged from a firm in a newly industrializing country. Should the dominant firm in the industry cut its price, or can it rely upon its existing customers not to switch to the rival firm? Is the rival firm producing more cheaply because of low-cost labour and/or subsidies, about which nothing can be done, or is it using more efficient techniques which ought to be imitated?

The supply of good judgement

People differ in their quality of judgement. Some people have a personal comparative advantage in exercising judgement, and others do not. Those who own resources do not necessarily possess the quality of judgement needed to utilize them properly. Wealthy aristocrats, for example, do not necessarily make good businessmen. Economic efficiency requires that people with the best judgement are matched to the most judgemental decisions.

There are various reasons why people differ in their quality of judgement. Some people may be very observant, and notice things that others miss. Others may have strong powers of concentration, which enable them to process information more quickly than other people. Older people may have 'longer' memories, so that they can retrieve more information about similar situations that have arisen in the past. This is particularly useful in areas where theory is weak – for example, in understanding the motivations of other people. Some people may be more methodical than others, and better at checking information. For all these reasons, some people have either more information or better interpretative models, and so face lower information costs than other people. For a given expenditure of effort, they are more likely to arrive at a correct decision.

In a free society, people are allowed to decide for themselves whether their judgement is good. In choosing their occupations, people who are confident that their judgement is good will tend to gravitate to jobs that call for intensive use of judgement, whilst those who believe that their judgement is bad will gravitate to jobs where other people take decisions for them. On this view, entrepreneurs will *specialize* in taking judgemental decisions. Although everyone takes judgemental decisions from time to time – such as whether to marry, or change job, or move house – entrepreneurs specialize in taking these decisions on behalf of other people.

Not all entrepreneurs are successful. There is a strong bias in the historical literature towards successful entrepreneurs, for fairly obvious reasons: successful entrepreneurs make an impact on the national economy, they are inclined to self-promotion, and the enterprises they create survive long enough to leave good records. The successful entrepreneurs are those whose confidence in their judgement turns out to be well-placed. For every high-profile success, however, there tend to be numerous failures. Small start-up businesses are notoriously prone to failure in the first two to three years (Caves, 1998). Failures are normally caused by overconfidence, though bad luck and incompetence may also play their parts. Luck is also a factor in business success, because ill-founded judgements may occasionally be validated by chance events. However, the proportion of luck to judgement in entrepreneurial success remains unknown.

Given the scarcity of entrepreneurship, the question naturally arises as to whether its supply can be increased, and if so how. For a given size of population, there are two main ways of increasing the overall supply of entrepreneurs. The first is to improve the quality of judgement in the population, and the second is to give people more confidence in the judgement that they have. The first approach raises the question of whether entrepreneurs are 'born' or 'made'. There is little historical evidence that entrepreneurship is inherited: the evidence on family firms suggests that sons usually display less initiative than the fathers they succeed. There is some support for the idea that entrepreneurial qualities are incubated in adversity. Fatalistic acceptance of poverty is certainly not an entrepreneurial characteristic, but determination to reverse an economic setback often seems to be (Brenner, 1983). The idea of 'proving oneself' in order to live down some humiliation may also be a factor, although the evidence is only anecdotal on this point. Many entrepreneurs claim to be 'self-made', but it is impossible to know whether, in making this claim, they are simply unwilling to give credit to parents, teachers and others who have helped them along their way.

The second approach suggests that people should be encouraged to become more self-confident and to take greater risks. This attitude was characteristic of the 'enterprise culture' of the 1980s and 1990s (see below); the problem is that by encouraging people with poor judgements to make risky decisions, more resources may simply be wasted instead.

Entrepreneurship and organizations

The contractual position of the entrepreneur

The preceding approach is based upon a functional definition of the entrepreneur: 'an entrepreneur is what an entrepreneur does', in other words. But how is an entrepreneur to be identified in practice: in particular, how can they be recognized in relation to the firm? A good deal of historical evidence is based on the archives of firms, and in applying the theory of entrepreneurship to such evidence it is obviously important to know who is an entrepreneur and who is not. Is the entrepreneur the owner, or the chief executive employed by the owner – or are both of them entrepreneurs?

The principle of specialization by entrepreneurs takes two main forms. In the first the entrepreneur is an employee, and in the second they own a firm in which others invest. For example, a wealthy person may own a firm and employ a salaried entrepreneur to take decisions on their behalf. Alternatively the wealthy person may invest in a firm run by a self-employed entrepreneur. The two arrangements can be employed in tandem: a wealthy person may invest in shares in a company in which the owner delegates decisions to managerial employees.

Intrapreneurship, the practice of encouraging employees to act entrepreneurially (a widely used concept in the management literature), is simply a weak form of entrepreneurship that involves both a lower intensity of judgement and reduced access to resources. This weaker form of entrepreneurship is in fact very common. In almost all industries where market conditions are highly volatile, prominent employees make quasi-judgemental decisions. Investment bankers are not pure entrepreneurs, but when choosing to whom they will lend they do not possess full information, and so have to depend upon their judgement. Fashion designers cannot predict demand either. They depend on a keen sense of style, a knowledge of fashion history, and their own intuition to produce a portfolio of designs for the next season. In both these (and many other) cases, employees use sets of precedents and internal guidelines for decision-making, but they will nevertheless have to call on their judgement too. The important distinction, therefore, between intrapreneurship and conventional entrepreneurship is partly about the intensity of judgement and partly about the control of resources.

Low trust and the employee-entrepreneur

Some writers allege, however, that specialization between the owner-entrepreneur and the employee-entrepreneur can never take place. They argue that no one would ever trust someone else to take judgemental decisions on their behalf. If no one could ever be trusted with other people's resources, then everyone would have to own all the resources they controlled. No one would employ a salaried entrepreneur because the employee's perception of risk would be distorted by the fact that their own personal wealth was not at stake. The entrepreneur would always be the owner of the firm.

Frank Knight was a major exponent of this low-trust view. Identifying the owner as the entrepreneur would suggest that because a joint-stock firm has many part-owners, it also has many part-entrepreneurs. Knight pursued this logic by claiming that in large joint-stock companies the shareholders functioned as a collective entrepreneur. He could not believe that they would ever trust an employee to take important decisions on their behalf. The crucial judgement exercised by the shareholders concerned the appointment of a suitable manager to run the business, and not what this manager should do once appointed to the job. Once the manager was appointed, said Knight, their job would become routine.

Knight overlooked the fact that firms can offer both pecuniary and non-pecuniary rewards to entrepreneurial employees: pecuniary rewards include promotions, bonus payments and stock options, whilst non-pecuniary rewards include status and recognition of achievement. These rewards can align the incentives of the employer and the employee. The employee may not have a major investment at stake, but their reputation may be 'on the line' when they take a decision on their employer's behalf. Their reputation will affect their promotion prospects and their own self-esteem. They may therefore give just as much care and attention to decisions as if the resources were their own. Indeed, because they are specialized, the result may be better than if the employer attempted to take the decision alone. This may explain why some large firms with consultative management styles may perform better than similar firms run by autocrats.

It must be recognized, however, that an employee-entrepreneur rarely has as much freedom to take decisions as does the owner of a firm. The employee-entrepreneur will normally have to work within a budget set by the owner. Different types of expenditure may be budgeted under different heads, with limited virement between them. While owners can take the shareholders' funds and put them to almost any use they like, the employee-entrepreneur has to spend each sum according to the budget heads under which it is allocated. An owner could decide to lay off all the employees and spend the entire wage bill on the rental of a new machine, but the typical employee-entrepreneur could not. The employee-entrepreneur is also under closer scrutiny than the owner, because while the owner reports to a board of directors on an intermittent basis, the employee-entrepreneur normally reports to the owner regularly.

It should also be emphasized that while an owner bears all the types of risk associated with a business, employee-entrepreneurs may bear only those risks associated with their making a mistake. For example, if a business is hit by a natural disaster, the owner's wealth may be wiped out, but an entrepreneurial manager's reputation may remain unscathed. There is no reason for an owner to force an employee-entrepreneur to bear risks associated with factors beyond their control, because the shareholders are better able to deal with these risks, through holding a diversified portfolio embracing many different firms. On the other hand, there is a good reason for an owner to force an employee-entrepreneur to bear some of the risks associated with their making a decision, and this is why they will try to ensure that the employee-entrepreneur's reputation is at stake.

There is a problem with focusing motivation on mistakes, however, because it may inadvertently make employee-entrepreneurs unduly risk-averse. If successes are harder to detect than failures, then any employees able to exercise discretion may boost their reputation by simply avoiding mistakes. They therefore forgo risky opportunities, on the grounds that success will go unnoticed but failure will result in loss of reputation. Employees therefore become more risk-averse than their employers would like. This is one reason why employees may behave in a non-entrepreneurial way, even though they have entrepreneurial qualities that would be revealed under a different incentive scheme. To counter this basis, enlightened owners may take steps to ensure that success is identified and rewarded. This helps to promote a culture of personal responsibility within the firm, as opposed to just a culture of blame. Moreover, by making the company a happier place in which to work, it becomes easier for owners to retain their most able employees.

These differences between owners, employee-entrepreneurs and employees are still matters of degree, however. So long as employees are empowered to act with discretion instead of simply following rules, they can exercise their entrepreneurial talents. The more decentralized the structure of the firm, the greater the scope for improvization they possess. Many successful owner-entrepreneurs have first acquired their experience by exercising their talents as someone else's employee. They leave their previous employment to found their own business only when their confidence has grown to the point where they feel that the constraints upon them have become too great, and the prospective rewards for success too small.

Financing entrepreneurship

The low-trust view has important implications for the financing of business as well. In a low-trust society no one would ever invest in someone else's business because they would expect them to become lax once they realized that part of the risk was being borne by other people. The only exception is where the owner can offer full collateral against a loan – for example, by passing over the deeds to their house as security.

Owners who cannot attract equity investment must accumulate all the capital they require for themselves. However good their judgement, they cannot become entrepreneurs unless they have sufficient wealth. This explains why so many people identify the entrepreneur with a capitalist: they implicitly assume a low-trust society in which personal capital is a necessary requirement for the entrepreneur. In such a society, entry into entrepreneurship is governed by the following considerations:

- *Inheritance*. The entrepreneur's parents or wealthy relatives may die while *he* is still young. Being the first *son* under primogeniture, and having elderly parents, is an advantage in this respect. Wealth can be augmented by strategic marriage too – for example, acquiring other people's inheritance from wealthy widows (except when their property is entailed).
- *By working and saving*. This is a slow method, but has the advantage that entrepreneurs may acquire useful skills whilst in employment, especially if they can obtain a responsible job.
- *By starting on a very small scale and steadily reinvesting profits*. This method is also potentially slow but can be expedited if the initial venture is high-risk. Thus a merchant may begin by smuggling, gun-running, or piracy, and then become legitimate once sufficient capital has been accumulated to support a proper import–export business.
- *Other means*, including gambling and insurance fraud (for example, over-insuring warehouse contents and then committing arson).

The low-trust scenario is one that confronts many entrepreneurs from poor backgrounds. The factors identified above are therefore highly relevant to financing the growth of small businesses started by immigrant refugees and members of minority ethnic groups (see below).

The reputation of the entrepreneur

In practice, most people believe that some people can be trusted, even though others cannot. The number of people who trust a given person depends upon that person's reputation. The extent of a person's reputation governs the amount of other people's resources that they can bring under their control. While people who are not trusted have to rely entirely on their own resources, a person who is trusted by everyone can acquire resources simply by selling equity to the public. In between these two limits is a wide spectrum of cases. People with limited reputations can acquire resources from only a narrow circle of people. Parents and elderly relatives may finance the younger generation in a family firm. They trust them because they have known them from birth. Friends and acquaintances may combine their resources to establish a partnership – this is a common arrangement in professions such as accountancy and law. Manufacturers may obtain resources through trade credit extended by customers or suppliers who have dealt with them on a regular basis. Businessmen with a reputation in a local community may rely on local sources of finance channelled through social networks, and so on.

There are two main aspects to reputation in business: honesty and competence. Honesty refers to the fact that an entrepreneur needs to be a faithful steward of other people's money. This means not only avoiding the temptations of fraud, but also a commitment to working hard even when others will be the main beneficiaries of the effort. Competence concerns effective handling of routine matters, but above all their ability to exercise good judgement.

Neither of these factors can be directly observed. Reputation must therefore be based on symptoms of these qualities. Where honesty is concerned, older family members may put their confidence in the filial duty of the younger generation. Members of a local community may rely upon the sense of shame that failure will bring to the entrepreneur. If the entrepreneur is believed to be a sincerely religious person, like many of the early Quaker businessmen, then they would be expected to feel very guilty if they behaved in a dishonourable way.

Matters are less clear where competence is concerned. An obvious indicator of competence is educational qualification: this should reveal whether the entrepreneur is intelligent, and whether they have worked hard at their studies. In fact, however, education seems to be a poor indicator of future entrepreneurial success. Examination performance may measure the ability to analyse abstractions, rather than the complex real-world situations confronted by the entrepreneur. Schooling may reward conformity of belief, rather than the independent judgement by the entrepreneur; it places pupils in a subordinate role in a hierarchical organization, which is not conducive to an independent 'free spirit' who aspires to be their own boss.

Given the pragmatic nature of entrepreneurial activity, track record in business is an obvious basis for reputation. However, many entrepreneurs successfully reenter business after failure, and some notable successes have only been achieved after a string of failures. It appears that many financial backers value the entrepreneur's previous experience for its own sake, independently of whether they were successful or not. People who fail lose some of their reputation, but not all of it; those who lack reputation most are those who have never tried in the first place.

Partner selection

The importance of partner selection came to the fore through the fashion for strategic alliances in the 1980s and 1990s. It was observed that many alliances lasted for only short periods of time. In some cases there was a good reason for this: termination was a natural outcome because the alliance was devised for collaboration on a specific R&D project, or as a means for one of the partners to enter or exit an industry.

Strategic alliances are examples of interfirm partnership. But there is another form of partnership which is of greater historical significance: namely, the partnership between the shareholders in an enterprise. The enterprise may involve either a single project, such as a trading voyage, or recurrent activities of the kind undertaken by an ordinary firm. Prior to the emergence of the joint-stock enterprise and modern equity markets, many firms were financed as partnerships between two or more individuals, each of whom held a substantial share of the overall stake.

Partnerships of this kind required a great deal of trust. This is particularly true where all the partners hold equal shares, so that there is ambiguity about ultimate control. In some partnerships the prime responsibility for decisions clearly lies with just one of the partners, and the other partners have a 'sleeping' role. This corresponds to the case discussed earlier, in which an entrepreneur seeks out finance from investors who play an essentially passive role (so long as the venture appears successful). But in other partnerships, several of the partners may share the decision-making role. They may establish a division of labour, based on their relative expertise in different areas of the business, or they may take all the decisions collectively instead.

Choosing the right partners means having a good knowledge of other people. This is not just a question of 'networking', but of psychological insight too. It involves the capacity to 'decode' the signals that people give through everyday behaviour in order to infer what their underlying motivations are likely to be. This capacity requires a certain degree of self-awareness too. It is difficult to understand other people's motivations if one does not understand one's own as well. Successful entrepreneurs are likely to choose their partners well, and therefore to have enduring relations with them.

It is not always appropriate to maintain a partnership, however, even where trust is high. Conditions may change, due to changes in the industry, or in the personal circumstances of those involved. An appropriate choice of partner allows the partnership to be dissolved in amicable fashion, so that all the partners retain their reputation for integrity. A successful entrepreneur may therefore build their career through a succession of partnerships rather than a single enduring one; but if their partner selection is effective, they will enhance their reputation as their partnerships progress, and avoid the damaging recriminations which arise when partnerships turn sour.

Information, strategy and the firm

Information synthesis

Judgemental decisions normally require the synthesis of different types of information. The high-level entrepreneur of the Schumpeterian type, for example, needs to synthesize information about new inventions with information about trends in product demand and in the prices of raw materials, in order to determine whether an innovation is worthwhile. If entrepreneurs do not possess this information themselves then they must know where to acquire it. If some of the information is confidential then it will have to be acquired through personal contact rather than from published sources. Entrepreneurs therefore need to create a network of contacts that can feed them the information they require.

A synthesis of information has commercial value only if it relates to a profit opportunity. If everyone recognizes the same opportunity at the same time then profits will be competed away. As rival entrepreneurs bid for up the price of inputs, and the prospect of increased supplies drives output prices down, everyone's profits will disappear. The only beneficiaries will be the customers and the suppliers.

There are two main ways in which an entrepreneurial synthesis can be unique. The first is that the entrepreneur possesses different information from other people. For example, entrepreneurs may have access to the latest news, enabling them to act on the basis of information that other people do not yet possess. Alternatively, they may have effected a unique combination of information. While every item of information that they know may also be known to someone else, no one possesses exactly the same combination of items.

The second possibility is that entrepreneurs can interpret information better than other people. They may have exactly the same information as other people, but they interpret it differently. This difference of interpretation arises because the entrepreneur brings different theories to bear on the subject. Although these theories might be formal scientific theories, they are much more likely to be intuitive theories which the entrepreneur employs as a metaphor or heuristic device. Some of these theories may have been imbued from the culture in which the entrepreneur was brought up. Others may be generalizations that the entrepreneur has arrived at on the basis of their own personal experiences.

An entrepreneur who wishes to be the first to exploit the news must cultivate access to people who handle it prior to publication. Location in a major metropolis is a great advantage from this point of view. This is the place where travellers often call first when arriving from overseas; it is where journalists collect information for their stories, and where groups of people assemble to take important decisions – politicians in Parliament, business leaders at their headquarters, and so on. This explains why so much high-level entrepreneurial activity in any country is concentrated in the metropolis.

Entrepreneurs who wish to effect a unique synthesis from ordinary information need to build a unique configuration of contacts. They require a 'networking strategy', which involves joining suitable organizations, attending appropriate events and generally obtaining introductions to the 'right people'. If they need information about new inventions then they may socialize with scientists and engineers – for example, by sponsoring meetings of professional associations. To gain access to finance they may join organizations with a wealthy membership – for example, a sporting club, or the board of trustees of a charity. They need to ensure that as far as possible other people do not replicate their pattern of contacts, for otherwise they may arrive at the same conclusions where commercial opportunities are concerned. They therefore need to belong to different organizations whose memberships do not otherwise overlap.

So far as the interpretation of information is concerned, some of the theories employed by entrepreneurs will be a cultural product, while others will have developed out of their experience. For a low-level entrepreneur, narrow experience of a specialized field may be of the greatest value, but for a high-level entrepreneur broad experience is likely to be most useful. The greater scale on which high-level entrepreneurs operate means that they must synthesize information not only from different function areas – production, marketing, R&D and so on – but from different countries and regions as well. They need to be acquainted with the jargon of different professions, and with the languages of different countries too. It is therefore an advantage for them to have held different sorts of jobs, and to have lived and worked in different countries.

Entrepreneurial strategy: preempting opportunities

Information has the properties of a 'public good' because it can easily diffuse to other people. Entrepreneurs will therefore want to keep their information synthesis secret until they have preempted the profit opportunity. There are three main ways of preempting an opportunity, but not all of them are available in every case:

- *Acquisition of special legal privileges*. This is the most direct way to attain a monopoly position. The privilege may consist of a state charter, licence or franchise, or a patent linked to the technology employed. The privilege will normally be valid for a fixed term, after which it may or may not be renewed.

- *Speculation and arbitrage*. In practice, many patents and licences are difficult to enforce. In the absence of effective legal enforcement, the best alternative is to appropriate the profit from a speculative deal in some resource. This provides a basis for rapid capital gains: entrepreneurs can buy up the resources which appear undervalued in the light of their information, and then sell these resources on to others at higher prices once the information has entered the public domain. Commodity and currency traders appropriate profit in this way on a daily basis. The same strategy can be applied to land, mining rights and the like: for example, buying up land that is used for agriculture and selling it off to a builder for housing.
- *Loyalty*. Where manufacturing and commerce are concerned, profit cannot usually be appropriated through a once-for-all transaction. The opportunity involves creating a market for a type of product that did not previously exist, or making an existing product in a different way. It involves a succession of trades over a long period of time. The closest analogy to the speculative strategy is to tie in suppliers and customers using long-term contracts. This would prevent the suppliers and customers from switching to rival firms later on. These long-term contracts would capitalize the flow of future costs and benefits in the same way that the price of the speculative asset did before. The transaction costs associated with this strategy are likely to be high, however. Furthermore, once alerted to the situation, customers and suppliers will be reluctant to sign such contracts, since they will realize that they can get a better deal once competitors arrive on the scene. Under these conditions, the best strategy is to win the loyalty of their customers and suppliers, so that they are reluctant to switch to rivals when they appear. If rivals expect the clients to be loyal to the innovator, then this will discourage them from entering in the first place.

The practical difficulties of preempting profit opportunities mean that entrepreneurs usually want to keep their information secret for as long as possible. This explains the culture of commercial confidentiality and business secrecy that is found in many businesses. Small firms are particularly vulnerable to 'theft' of information by bigger firms, since it is easier for a big firm to enter a small firm's market than the other way round. Founders of small firms who lack business experience may also overestimate the commercial value of the privileged information in their possession. For example, they may believe that they are the only people to know the identities of their customers, whereas in fact larger firms know about these customers but find their demands too small to bother with. A combination of over-optimism and perceived vulnerability may explain why the culture of secrecy appears to be particularly strong in small firms.

If all commercial information were handled in confidence, however, then there would be no opportunities for entrepreneurs to network productively amongst themselves. In practice entrepreneurs are willing to share certain types of information through social networking – in particular, information relating to opportunities that they are unable to exploit themselves. They may barter such information for similar information which is relevant to their business but not to the firm that passes it on.

In some cases firms may break a confidence to gain reputation. For example, the president of a trade association may pass on advice, based upon their own firm's experience, to an audience which includes the owners of rival firms. This is a signal that they regard their firm as so advanced that, even when armed with this information, their rivals will be unable to match their firm. By enhancing their reputation in this way, they may strengthen their firm's brand, impress bankers, gain influence with government, and so on. Nevertheless, these cases are usually the exception rather than the rule. Claims about extensive networking between rival entrepreneurs need to be treated with caution, especially when, as is often the case, the documentary evidence supporting these claims is weak.

The entrepreneur as organizer

One of the most important types of profit opportunity relates to the establishment of a new market, or the widening of an existing one. The entrepreneur reconfigures patterns of trade by establishing a new centre for trade in a particular product, or in a range of products. A low-level entrepreneur might set up a local shop to stock a range of products that is otherwise only available in a neighbouring town. On the other hand, a high-level entrepreneur might set up a multinational enterprise producing a new branded product using a patented technology. Both of these entrepreneurs require an organization in order to exploit their opportunity effectively. The shop-owner requires a simple organization for staffing the till, banking the cash, ordering stock and keeping the shelves filled. The head of a multinational enterprise requires a more sophisticated organization to handle the logistics of international transportation, exchange rate exposure management, and so on. Many managers will be employed for this purpose.

Once the low-level entrepreneur has made the initial judgement to set up the shop, much of their subsequent work is routine. Only intermittent shocks, such as a major change in tastes, or the entry of a local rival, will require further judgemental decisions. By contrast, calls for judgement will be much more frequent in the multinational enterprise, because it is exposed to a variety of shocks in different markets around the world. The head of the organization may become so busy that entrepreneurial discretion is delegated to the managers of local subsidiaries. These managers then become entrepreneurs in their own right. They initiate local responses to local problems, and consult only with colleagues and superiors when they judge that international strategies are affected.

Once low-level entrepreneurs have set up their business, they may easily lapse into a managerial role and concentrate entirely on routine decisions. They focus exclusively on internal matters and cease to scan the external environment for change. As a result, their business may fail when it is exposed to competitive threats, because they are too slow to respond. If the business is self-financed, then there is no one to pressure the entrepreneur into taking action.

Heads of multinational enterprises cannot afford to take this attitude. Managing in a volatile environment is the essence of the job. With joint-stock ownership, there is a board of directors representing outside financial interests which is there to see that they continue to perform their entrepreneurial role. This underlines the fact that entrepreneurship is a continuing activity in all large firms, but only an intermittent activity in many small ones. Entrepreneurial failure in a large firm is normally addressed by top management succession. If the board does not replace failing top management, then a hostile takeover may be launched by other entrepreneurs who are in pursuit of capital gains. The value of the firm is simply too large for its resources to be allowed to remain too long under ineffective control.

Mobility and sectors

Geographical mobility of the entrepreneur

It was noted above that everyone takes judgemental decisions from time to time. These decisions concern choice of occupation, where to live, and selection of partner – in business and marriage. Entrepreneurs will reveal their qualities by the kind of choices they make. Some choices will be distinctly entrepreneurial and others non-entrepreneurial, whilst others will simply reveal differences between various types of entrepreneur. It was also noted above that it is often difficult to find symptoms that reveal a true entrepreneur. Because they reveal underlying attitudes, the personal choices that people make may prove useful in this respect.

Through their personal decisions, entrepreneurs sort themselves out into different fields: some go and live in one country or region, and others in another; some go into one occupation, and others into another; some marry for love or beauty, and others for connections and money.

Everyone has to decide, at some stage, whether to remain in the place where they grew up, or to move on to somewhere else. People tend to be most mobile between the time that they leave school and the time that they settle down to pursue their main career. It may be suggested that, at this stage, entrepreneurs are more likely to move and non-entrepreneurs to stay. This is particularly true of people brought up in isolated rural areas where there are few opportunities for profit. Such areas tend to selectively lose their more entrepreneurial young people. Conversely, large cities tend to attract entrepreneurial young people. They offer greater profit opportunities, a wider choice of jobs, and access to larger amounts of specialized information through clubs and societies that flourish there. Those who succeed in the city may well retire to the countryside, buying their way into the local gentry and acquiring positions of status – for example, becoming a magistrate. Some may retire to the area where they grew up, but envy of their success by those who remained behind may sometimes keep them away.

If entrepreneurs are prepared to move long distances, then they have a choice of political regimes under which to operate. Once an entrepreneur has decided to move, they have, in principle, a wide choice of destinations. Short-run profit opportunities may be an important consideration for the very young, who may be attracted by mining booms to emigrate to underdeveloped parts of the world. Once these booms are over, they have to decide whether to return home, or to move on somewhere else. At this stage, the long-run attractions of political regimes may be important, particularly if they are concerned to protect their new-found wealth from taxation.

Even some of the most entrepreneurial people may not wish to move long distances to alien societies on economic grounds alone. A 'push' may well be required. A good example of this is the expulsion of ethnic minorities by totalitarian political regimes. This may range from the persecution of religious sects to the dispossession of peasants and the expropriation of a wealthy merchant class. While such measures do not discriminate between entrepreneurs and non-entrepreneurs in terms of whether people leave, they may well discriminate in terms of where the migrants terminate their travels. The least entrepreneurial may well stop at the first place of refuge, whilst the more entrepreneurial may continue in search of the most conducive regime.

While immigrants who have been expelled from other countries might be thought to be, on balance, less entrepreneurial than the purely 'economic' migrant, the effect of their adversity on their motivation should not be overlooked. If loss of wealth and status stimulates a desire to restore the family's fortunes, then expulsion may turn into a very powerful motivator of success.

The institutional framework

The regimes that are most attractive to mobile entrepreneurs are likely to possess the classic institutions of the liberal market economy. They will have some or all of the following characteristics:

- private property, which is freely alienable, subject to certain minimal restrictions
- freedom of movement, and freedom to associate with business partners
- confidentiality of business information, especially regarding the relations with customers and suppliers
- protection of creative work through patents, copyright, design protection and so on

- access to impartial courts which will enforce property rights and which have the competence to settle complex commercial claims
- a stable currency, based on a prudent control of the money supply
- democratic government, with sufficient balance of power between opposing interests to reduce the risks of draconian interventions in industry and commerce
- openness to immigration by entrepreneurs and skilled workers (and possibly other groups as well).

Differences in regime can also be found, to a more limited extent, between regions of the same country. Different regions acquire distinctive cultures, often as a result of historical patterns of interregional migration. Regions with a dominant but declining industry may have strong trade unions (or craft guilds), whose inflexible attitude to working practices is a major deterrent to entrepreneurs in 'sunrise' industries. This suggests that successive waves of innovation will move around a country, avoiding areas where previous waves of innovation have ossified into traditional working practices. Only the metropolis will remain vibrant because of its continuing ability to attract young entrepreneurs. If the metropolis too goes into decline, then the outlook for the entire national economy is bleak.

While the presence of liberal market institutions may account for economic success, the converse also applies: the absence of such institutions may lead to poor performance. Their absence may explain the failure of many less-developed countries to commercialize and industrialize on a significant scale. Assuming that the leaders of these countries are seeking economic progress, their persistence in maintaining inappropriate institutional structures remains to be explained. One possibility is that their time horizons are very short and their motives are venal: their objective is to maximize the perks of holding political office for as long as they can cling to power. This approach appears quite common in countries where military dictators hold ultimate power. Another possibility is that the leader has misguided beliefs about the way that economies function. They overestimate the 'gains from raids' and underestimate the 'gains from trade', and therefore focus their attention on waging wars against neighbouring countries. They fail to appreciate that sources of information are highly decentralized, and therefore underestimate the value of competitive profit-seeking whilst overestimating the benefits of state control. A third possibility is that attitudes are so traditional and inward-looking that change of any kind is resisted, including change to a more entrepreneurial economy. Cultural attitudes may be so parochial that leaders are unaware, or unconcerned, about how far their country is lagging behind the most advanced economies.

Ethnic entrepreneurship

Variations in institutional regimes also appear to influence the entrepreneurial patterns of particular groups of migrants. Almost everywhere immigrant arrivals have selected to work in ethnic labour markets in order to reduce the costs of adjustment to the new host society. The reduced assimilation into the host culture also leads to varying degrees of social exclusion. This has often given rise to patterns of so-called ethnic entrepreneurship, where ethnic minorities pursue self-employment in order to avoid economic discrimination. Variations in institutional regimes and in ethnic backgrounds appear to make significant differences in how ethnic entrepreneurs are able to overcome economic discrimination, build prosperous businesses and acquire social acceptability (Godley, 2005).

While currently the dominant view among specialists is pessimistic (that the entrepreneurial route to ethnic assimilation and social inclusion typically fails), the theory of entrepreneurship developed here could better explain the determinants of failure. Focusing on entrepreneurial judgement, for instance, would clarify whether self-employed ethnic minorities are actually entrepreneurial, or whether in fact many small business owners are simply being managerial. Focusing on the entrepreneur's interpretative skills would highlight whether cultural backgrounds either help or hinder the entrepreneurial function. Focusing on the costs of information would highlight whether ethnic entrepreneurs are particularly disadvantaged, and, if so, whether this arises from host society discrimination or some other factor, such as opting to remain in an industry where the long-term prospects are poor.

Occupational mobility of the entrepreneur

Young people who remain behind in a locality may well follow their father/mother into the same line of business. Where father is an employee, they follow him 'into the works' or 'down the pit'. Father may even use his influence to get his son a job, even though it may be in a 'sunset' industry. To those with narrow horizons and a parochial outlook, any long-standing local industry may appear secure. Those entrepreneurs who remain behind will reveal their qualities by getting jobs, or starting firms, in newer industries instead. The non-entrepreneurial workers may eventually join the ranks of the 'structurally unemployed'.

The same mechanism applies in a family firm (Church, 1993). 'One day all this will be yours', the father tells the son, and the son feels morally obliged to succeed his father, even though his interests lie elsewhere. A more entrepreneurial son might turn down the offer and set up his own business in a different industry, forcing the father to look outside the family for a successor – possibly with beneficial results for the firm.

Business owners who remain behind in a declining industry or region may join forces to lobby for protective tariffs or industrial subsidies. They harness organizations, such as trade associations, which were originally established to promote the provision of industry-specific 'public goods' like training, for collusive purposes. They attempt to maintain profit levels through (covert) price-fixing; to counter trade union power by bargaining collectively, and so on. A secretive and conspiratorial business culture develops, reflecting the entrepreneurial weaknesses of the business group.

Intersectoral mobility

Entrepreneurs not only move between industries within the private sector; they can also move between the private sector, the non-profit sector and the government sector. The initial choice of sector will reflect the entrepreneur's preferences. Some entrepreneurs may place considerable weight on pecuniary rewards, whilst others may weight non-pecuniary rewards such as status more heavily instead. Some entrepreneurs may thrive on taking financial risks, while others are more averse to it.

Entrepreneurs who value money rather than status, and are happy to bear financial risks, are likely to become the owners of private firms. Those who value both money and status, but are more averse to financial risk, are likely to become private sector employees. Those who value status rather than money, and are financially risk-averse, are likely to enter the government service. Those who value status rather than money, and are willing to take some financial risks, may enter the not-for-profit sector.

As an entrepreneur's career progresses, their circumstances are likely to change, and their behaviour will therefore change as well. Having acquired a substantial amount of wealth from private ventures, they become fearful of losing it, and so switch it into a 'liquid' asset such as land. Their demand for money being satiated, they switch to the pursuit of status instead. They may acquire a gentry property and enter local politics, until their consumption of money and status are restored to balance again.

There is a strong tendency in much of the historical literature to see the private sector as the sole arena for entrepreneurial activity. This is particularly true of writers who wish to emphasize the greed and avarice of the entrepreneur. Proponents of free enterprise tend to reinforce this bias by attempting to show that entrepreneurship can only flourish when it is driven by the profit motive working through a competitive market system. Theory lends little support to this ideological view. It merely suggests that, not surprisingly, entrepreneurs who seek pecuniary rewards gravitate to the private sector, whilst those who seek non-pecuniary rewards gravitate to other sectors instead.

The entrepreneur in history

Historical applications of the concept of the entrepreneur

It is interesting to note that there was no significant development in the theory of entrepreneurship during the nineteenth century. The only major English-language writer to address the subject was John Stuart Mill (1848), and he defined entrepreneurship simply in terms of supervision.

Early academic writers on British economic and social history offered no systematic interpretation of the role of the entrepreneur, and employed the concept mainly as a descriptive device. The 'Victorian entrepreneur' was regarded more as a sociological than an economic phenomenon: a member of an upwardly mobile lower-middle class, imbued with the bourgeois values of proprietary capitalism. The Victorians themselves seem to have been more impressed with their own engineering feats than their entrepreneurial achievements; thus it was the civil and mechanical engineers, rather than the railway promoters or the company secretaries, that were seen as the heroes of the Railway Revolution (Smiles, 1862). More generally, it was the creation of the Empire, rather than an entrepreneurial domestic economy, that was the main political preoccupation. Contemporary interest in Victorian entrepreneurship is more a reflection of a desire to recover something that has been lost than the continuation of a concern that the Victorians themselves expressed.

In the United States a powerful mythology developed around the 'rags to riches' entrepreneur (Sarachek, 1978). This was notable for sustaining a climate of optimism around small business start-up and playing down the very high risk of business failure. Where serious investigations were carried out (see, for example, Taussig, 1915, and Temin, 1999) they highlighted the middle-class professional origins of many successful entrepreneurs. The large-scale entrepreneurial exploits of the 'robber barons' of the late nineteenth century were chiefly of interest to the 'muck-raking' press.

Schumpeter (1939) provided one of the earliest economic applications of entrepreneurial theory. He identified five main types of 'new combination' effected by entrepreneurs: new products, new processes of production, the development of new export markets, the discovery of new sources of raw materials, and the creation of new forms of institution – such as the cartel or trust. Schumpeter's classification fits well with the major forms of innovation that occurred in Europe during the 'Age of High Imperialism', 1870–1914. Schumpeter was also able to show that this schema fitted the earlier history of the Western economies, from the growth of Mediterranean trade during the Renaissance down to the Industrial Revolution. Schumpeter also claimed that he could explain Kondratieff 'long waves' of 50–60 years' duration by the periodic clustering of innovations since the Industrial Revolution. Unfortunately, however, the empirical basis of Schumpeter's speculations on long waves has not stood the test of time very well (see Solomou, 1987).

Pursuing the Schumpeterian theme, Hughes (1965) examined the influence of the 'vital few' in promoting economic growth. Hughes's approach is mainly biographical, emphasizing the personality factor in entrepreneurship. The great value of his contribution lies in the fact that he recognizes the role of the entrepreneur in the public as well as the private sector, although he sees the public sector entrepreneur as heavily implicated in the growth of bureaucracy. The policy implication of Hughes's study would appear to be that people with entrepreneurial personalities need to be attracted into the private sector where, thanks to competitive markets, the incentives are better aligned with the long-run public interest.

A rather similar conclusion arises from Jones's (1981, 1988) studies of long-term world economic growth. Adopting an international comparative perspective, Jones argues that entrepreneurship is a natural feature of human behaviour which government can either encourage or suppress. Encouragement is provided by a regime of freedom under law, which allows people to carry out experiments in commercial and industrial organization at their own expense. Suppression is effected by governments that fall into the hands of elites, who think they know best which experiments are socially desirable and which are not. They subsidize prestigious experiments out of taxes, and repress ordinary experiments because they are seen as either useless, immoral, or politically subversive.

The debate on entrepreneurial decline

The most substantive recent discussion of entrepreneurship has focused on the alleged decline of entrepreneurship in Britain after 1870 (see, for example, Aldcroft, 1964; Sandberg, 1981). This decline is seen as having both technological and cultural roots (Wiener, 1981). One of the major symptoms of failure is said to be lack of investment in key industries. It has been correctly pointed out, however, that good entrepreneurship does not always mean deciding to invest, for in many situations the correct decision is not to invest at all. Nor is innovation always an indicator of good entrepreneurship; it sometimes pays to let others make the first move, and to learn from their mistakes.

For the historian to know whether entrepreneurs should have invested more heavily in new technologies, it is necessary to develop a counterfactual scenario. This scenario will normally be based on what happened in other situations where such investment was undertaken, and the crucial question then becomes whether these situations were really similar to the original situation or not (see Magee, 1997, for a credible counterfactual approach). Controlling for cultural differences, Godley (2001) has recently shown that entrepreneurs in

Britain did indeed face additional costs arising from conservative craft values among the workforce, which erected hurdles not faced elsewhere to introducing new technologies and working practices.

Even if it seemed, with the benefit of hindsight, that investment should have been undertaken, it may be asked whether a correct judgement could really have been made at the time, given the information that was then available. Were there other people arguing a sound case for investment, and were their opinions dismissed on spurious grounds? There are certainly examples of such 'blinkered' judgement, most notably in the British motor car industry (Church, 1994), but we do not know whether they are exceptional. In other cases it may be more appropriate to ascribe the outcome to misfortune rather than entrepreneurial failure.

Finally, investment that seems worthwhile from a social point of view may not appear worthwhile from a private point of view. For example, if an innovator cannot capture profit from a successful innovation because imitation is too easy, then if the innovation is expensive each entrepreneur will wait for the others to make the first move. Conversely, an innovation may be profitable from a private point of view even though it is harmful from a social point of view – for example, because no charges are incurred for polluting the environment. This distinction between private and social returns is the basis of Baumol's (1990) distinction between 'productive' and 'unproductive' entrepreneurship.

The literature on entrepreneurial failure has touched upon all of these issues, but typically not in a systematic way. There is evidence that innovations made in other countries were ignored by some British entrepreneurs, despite British commentators urging that they should be imitated, whilst other innovations were adopted only with considerable delay. Some investments which might have been socially beneficial in maintaining employment in isolated regions may have been rejected because the entrepreneurs concerned were fixing prices and restricting output. Overall, the debate remains inconclusive on whether more investments, made sooner, would have been more successful or not.

Furthermore, a satisfactory analysis of British entrepreneurial decline needs to embed the issue within a wider perspective. There was significant emigration of entrepreneurial individuals, who left to colonize the growing Empire, and the London capital market played a major role in channelling resources to their overseas ventures. The great railway and mining entrepreneurs did not so much disappear as transfer their skills overseas once the domestic railways system had matured and traditional mining areas had begun to decline. Supplies of entrepreneurship are finite, and migration is a selective process. It is therefore hardly surprising that the limited group of less entrepreneurial businessmen who remained behind in Britain, and inherited family businesses, concentrated their efforts on managing their existing Imperial export trade, rather than pioneering new industries, in the manner of entrepreneurs in other countries that were attempting to 'catch up' with Britain. Moreover, in so far as there were deficiencies in UK technological innovation, these may have more to do with the limitation of the English university system than the quality of entrepreneurship per se – thus Scottish entrepreneurs were very active in high-technology shipbuilding throughout the period of 'decline'.

Developing new hypotheses

Entrepreneurship and human capital

As the preceding discussion has shown, the economic theory of entrepreneurship is useful, not only in refining our assessment of the successes and failures of earlier generations of entrepreneurs, but in developing testable propositions as well. These propositions do not have to relate specifically to entrepreneurs, nor do they have to be tested using biographical information.

There is a close connection between the theory of entrepreneurship and the theory of human capital. Some of the propositions derived from the theory of entrepreneurship can be tested in the same way as propositions derived from human capital theory. Entrepreneurship can be regarded as one of the components of human capital. It is a skill relating to the processing of information. It is not the routine managerial skill of taking decisions according to procedures, but rather the skill of judging what these procedures should be. It is also the skill involved in taking decisions in unexpected business situations where ordinary procedures do not apply.

From this point of view, entrepreneurship is one of a number of inputs that contributes to the overall performance of the economy.

Together with the other components of human capital – skilled manual labour and routine management – it may be considered as a factor input into the economy. It is an input that improves the allocative efficiency of the economy. Like any factor of production, it is a substitute for other factors of production. Thus if managers are abundant, but entrepreneurs are scarce, decisions that would have been taken by entrepreneurs may be taken by managers instead. This means that a decision that would have been improvised, on the basis that existing procedures are inappropriate, will be taken using routines instead.

The market for entrepreneurs

According to this approach, the demand for entrepreneurship, like the demand for any other factor of production, is a derived demand. Unlike more conventional factors of production, however, the demand for entrepreneurship derives not from the overall level of product demand, but rather from the volatility of such demand. If the pattern of product demand were completely stable, so that nothing ever changed, then every firm could repeat the same production plan from one period to the next without any difficulty. Furthermore, if product demand simply alternated between the same small number of states, the firm could prepare its plans in advance for each possible state, and simply implement the prespecified plan appropriate to whichever of these states appeared. The demand for entrepreneurship arises from the fact that product demand is likely to enter new and unprecedented states for which no plan already exists, because it is uneconomic to devise in advance a plan for every conceivable state, since many conceivable states exist that may never actually occur.

It is not only the state of demand that is volatile in this way. In an open international economy, supply shocks are a regular occurrence. Then there are technology shocks arising from new inventions and discoveries, and cultural and institutional shocks which affect the contractual basis on which business is carried on. In general, the more volatile the environment, the greater the demand for entrepreneurs.

This means, in practical terms, that when volatility increases there will be an increase in the demand for entrepreneurs and a corresponding decline in the demand for substitutes, such as managers. This will normally be reflected in the formation of more small firms and the restructuring of large firms. The large firms may disappear through bankruptcy, or be split up through management buy-out and 'asset-stripping'; alternatively, they may be reorganized in a more flexible form, as a coalition of internal entrepreneurs. Greater competition to hire entrepreneurial employees means that pay structures will tend to become more flexible, because it will no longer be possible to offer both entrepreneurial employees and non-entrepreneurial employees the same rates of pay.

Enterprise culture

When there is a general perception in a society that volatility has increased, social and political attitudes may change as well. This is what appears to have happened in many Western industrial countries since the end of the 1970s. Increasing awareness of global competition, and the failure of large-firm 'national champions' to respond effectively, led people to believe that future job creation would come from small business. Recognizing the risks involved in small-firm start-up, the US and UK governments sought to reduce marginal tax rates in order to encourage risk-taking. Successful entrepreneurs became popular 'role models', creating a new set of myths about the 'rags to riches' entrepreneur. This 'enterprise culture' encouraged young people to make their careers in the private sector; recruitment to the public sector was discouraged through loss of status and pay restraint.

Considered as a historical phenomenon, the enterprise culture of the 1980s and 1990s was a natural reaction to some of the anti-entrepreneurial attitudes that had taken root in the West in the early postwar period. The growth of the Welfare State allowed public investment to 'crowd out' private investment, whilst the Cold War focused inventive activity on military projects. Productivity stagnated, while Keynesian full employment policy sustained unrealistic wage aspirations.

It should not be inferred, however, that the enterprise culture of the 1980s and 1990s was based on a correct understanding of the role of the entrepreneur. The highly competitive and materialistic form of individualism promoted by 'enterprise culture' did not accurately represent the dominant values of successful entrepreneurs of previous generations. For example, the Victorian railway entrepreneurs operated through social networks based in Britain's major provincial towns and cities. The limited amount of historical evidence that has been collected and analysed in a systematic way suggests that successful entrepreneurship is as much a cooperative endeavour, mediated by entrepreneurial networks, as a purely individualistic and competitive one.

Conclusion

The principal contention of this chapter is that a coherent and systematic theory of entrepreneurship improves historical interpretation. The theory presented above facilitates a more sophisticated assessment of the factors influencing the rise and decline of firms, regions and nations. It also allows historical evidence to be harnessed to the testing of economic theory, outside of the narrow confines of conventional 'cliometrics'.

The theory emphasizes that both cultures and institutions matter. Like the canonical theories, it recognizes that the economic environment faced by the entrepreneur is not the textbook ideal type of a perfectly competitive market. Firms and governments do not instantly adjust their behaviour in response to price changes. Volatility, and the consequent emergence of disequilibria, occurs continually in the world economy. Entrepreneurs both create and respond to these disequilibria by exercising their commercial judgement.

The theory presented in this chapter has an important advantage over the earlier theories in the canonical literature. It goes beyond canonical thinking by focusing very sharply on the nature of judgement. By examining the factors influencing the demand and supply of judgement, and the role of profit in rewarding judgement, a number of powerful propositions can be deduced. Amongst the range of propositions generated by the theory, several are of particular interest to the historian.

Because judgement improves with age and experience, successful entrepreneurs are likely to be mature people in early middle age rather than those who are very young. Previous experience of working for another firm often provides insights and contacts that are useful to the self-employed entrepreneur.

Because independent judgement is required to identify profitable opportunities, successful entrepreneurs may well be outsiders (ethnically, socially, or religiously). Furthermore, because reputation typically increases with successful outcomes to business interactions, successful entrepreneurs are likely to be well-connected.

Because the volatility of the business environment changes over time, the interpretative abilities of the population of entrepreneurs at one point may fail to meet demands at a later stage. When the supply of entrepreneurs is demonstrably inadequate, political dissatisfaction may encourage institutional changes designed to improve the supply of entrepreneurs.

Despite the clear benefits to research outcomes from the systematic testing of hypotheses concerning entrepreneurship, this has so far largely been absent from the historical literature. The development here of a relatively simple theory of entrepreneurship will (we trust) enable historians to focus their scarce research time and effort on asking and answering the right questions.

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3

Scale, Scope and Entrepreneurship

George Bitros

Introduction

When asked to define what is economics, quite frequently economists respond that economics is whatever economists do. In an analogous way, if one were asked to define what is entrepreneurship, one might reasonably be expected to respond that entrepreneurship is whatever entrepreneurs do. Hence, to understand entrepreneurship, a convenient approach is to focus on the role(s) of entrepreneurs in the economy.

To this effect a cursory look at the relevant literature would reveal that entrepreneurs perform six roles. They act as coordinators in the firm, in the market and in the economy. They absorb the costs of uninsurable risks that are associated with uncertainty. Quite frequently they perform as innovators by introducing new products, new production techniques and new organizational schemes. In their great majority they function as imitators of new products and new production techniques. By setting goals and inspiring employees and associates to achieve them, they provide leadership. And, last, they exercise alertness in discovering previously unforeseen profit opportunities. So by placing the emphasis on one or more of these roles various authors have come up with various theories of entrepreneurship. For example, neoclassical economists working in the tradition of Ricardo (1821) view entrepreneurs primarily as coordinators. Knight (1921) conceives of them as undertakers of risk and uncertainty. The entrepreneurs of Schumpeter (1950) are innovators, whereas those of Machlup (1958) and Kirzner (1985) act respectively as imitators and discoverers of profit opportunities. Here

I will concentrate on the activities of entrepreneurs as coordinators and innovators.

Regarding their function as coordinators, entrepreneurs act in two domains, that is, their firms and the markets where they operate. In the firms the main task of entrepreneurs is to extract economies of scale and scope from modern multi-product technologies so as to remain competitive.[1] In the markets their main task is to perceive opportunities for profit brought about by disequilibrium situations and try to exploit them by shifting resources from less to more valuable uses. If their perceptions prove correct, their actions benefit themselves and the economy. But if they are wrong they absorb the losses and learn to be more careful the next time around. As for their function as innovators, entrepreneurs apply an invention for the first time in order to develop a new product, a new service, or a new productive method on the perception that they may have good possibilities to pass the market test. If the innovations survive this test, the entrepreneurs and the economy benefit because of the superior value engendered by the new applications. Otherwise the innovation is abandoned and the entrepreneurs waste their time and efforts. By implication then, any attempt to investigate how scale and scope may affect, if at all, the inclination of people and business concerns to exercise entrepreneurship must dwell on the nature of two links: one linking scale and scope to firm and market coordination and another linking scale and scope to innovation.

The objective in this chapter is to address the possible existence and characteristics of these two links. In doing so I draw on the views held in contemporary economic theory as well as the results from empirical research. From this review it turns out that the economies that are associated with scale and scope are important driving forces in the expansion and deepening of coordination within firms. At the same time it is found that this inside or organizational type of coordination has been taken over to a large extent by managers who act as administrators and intrapreneurs. So the evidence points to the conclusion that scale and scope limit the role of traditional entrepreneurs in both these functions. But their impact on market coordination and innovation is somewhat uncertain because it is inextricably tied to the structure of various markets in the economy. In this regard it is suggested that we should watch out for two implications. Namely, first, there may exist a trade-off between smaller business units with high market coordination to innovation ratios and larger business units with low market coordination to innovation ratios. And, second, the designing of scale- and scope-related policies may be misguided if the responsible public authorities fail to allow for this trade-off to the best of available information.

The next section is devoted to the relationship of scale and scope to coordination within firms. Its focus is to explain why and how scale and scope have led to the formation of giant enterprises and to the substitution in them of entrepreneurs by professional managers. In the next two sections the presentation turns to the consequences of these two developments for market coordination and innovation. Then, in the following section, the relationships of scale and scope to market coordination and innovation are brought together in an effort to highlight their implications for economic theory and policy. The final section summarizes the conclusions.

Coordination within modern enterprises

Consider an enterprise whose production technology is characterized by the following simple system of equations:

$$\begin{aligned} Q_1 &= f_1(K_1) \\ Q_2 &= f_2(K_2;Q_1) \end{aligned} \tag{3.1}$$

where Q_1 and Q_2 are the products produced and K_1 and K_2 are the resources devoted to the respective facilities or product lines. From Figure 3.1 it is easy to observe that this technology exhibits three important characteristics.

First, looking at the graphs of the production functions f_1 and f_2 we see that they display initially increasing returns to scale, then decreasing returns to scale, and finally if production is extended beyond a certain level the returns to scale turn negative.

Second, notice that as the quantity of output Q_1 increases from Q_1^0 to Q_1^1 the resources that must be devoted to its production increase from K_1^0 to K_1^1. Consequently, with the overall amount of available resources fixed, normally this enterprise would have to reduce the production of Q_2 to the level shown by the bold line in order to free up the additional resources $K_2^0 - K_2^1$ that are required for the increased production of Q_1. But because of the positive impact of Q_1 on the

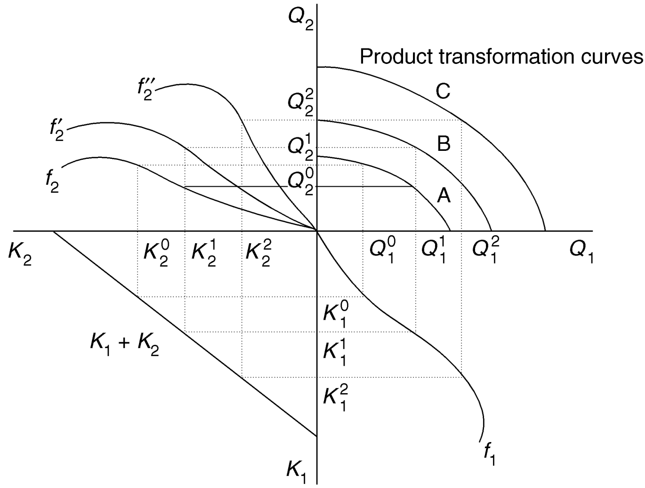

Figure 3.1 Economies of scale and scope

production of Q_2, f_2 shifts to position f'_2, thus pushing the production possibility frontier outward to B. What these changes imply is that the unit cost of producing Q_1 and Q_2 jointly is lower than the unit cost of producing them separately and reveals the existence of economies of scope.

Finally, in order to achieve the economies of scale and scope the role of management becomes quite complicated. To understand the reasons why, assume that the facilities for Q_1 and Q_2 are located several thousand miles apart. Then, most probably, the units for purchasing raw materials, the departments for hiring workers, the departments for selling the two products, the offices for carrying out numerous administrative tasks and so on will become geographically and functionally dispersed. As a result the management will have to develop skills and support systems to monitor and coordinate the activities of many decision centres that may have the tendency to operate on their own. Would traditional entrepreneurs be able to undertake these tasks? Certainly they would find it increasingly difficult, as their enterprises would grow. For this reason realizing the economies of scale and scope presupposes a basic imperative. This is that eventually the management must be entrusted to people with the necessary knowledge and skills to develop the required organizational capabilities.

In view of the simplicity of the model from which this proposition was derived, one might be tempted to surmise that it has little relevance for explaining the evolution of modern enterprises. Such a conclusion would be unfounded because vast quantities of empirical research corroborate it from several standpoints. One of them emanates from the persistent findings by many studies of economies of scale at the plant level and of constant returns to scale at the enterprise level. Clearly if expanding organizational capabilities were subject to diseconomies of scale, the economies of scale and scope at the plant level would tend to vanish at the level of the enterprise. Hence, what these findings imply is that the development of organizational capabilities is a necessary condition for turning the economies of scale and scope to one's advantage.

The second standpoint springs from the voluminous evidence that pertains to the development of industrial capitalism. In this regard we know that the giant enterprises in the advanced market economies managed to compete in international markets and grow by extracting economies of scale and scope from multi-product technologies. How did they do it? For an answer one need look no further than the monumental work by Chandler (1990). What he finds is that the development of industrial capitalism in the United States, Great Britain and Germany from about 1870 to 1970 could be attributed to merely two factors: one being the separation of ownership from control, which made it possible to amass tremendous amounts of capital under a single management, whereas the other has to do with the development of organizational capabilities.

Last but not least, consider the more recent developments in the forms of downsizing, divestiture, restructuring, outsourcing and so on. If diseconomies of scale, scope and management were allowed to creep into the operations, from Figure 3.1 we would expect management to resort to such policies in order to return the enterprises back to profitability. But this is exactly what has been happening in recent years with many large companies, as they try to control their costs and improve their balance sheets.

In conclusion, reaping the economies of scale and scope that are inherent in multi-product technologies and large-scale operations presupposes (a) the control of enterprises by professional managers,

(b) the development of organizational capabilities to coordinate and efficiently integrate widely dispersed activities, and (c) the encouragement of intrapreneurial activities through well-defined systems of motives. In advanced market economies these conditions were met with spectacular success, thus raising material standards in these countries to unprecedented levels. But in the process the role of the traditional entrepreneur as manager and coordinator was confined to small-scale enterprises.

Coordination in the market

Neoclassical economics has been blamed by various schools of thought for various failures. One of them, levelled in a particularly uncompromising manner by Neo-Austrian economists,[2] is that its blind faith in the coordinating powers of entrepreneurship is misplaced, the reason being, according to Loasby (1982, 122, and also 1989, 161), that there is nothing in the market to assure that entrepreneurial perceptions of existing disequilibrium situations will not be so seriously in error as to lead in quite the wrong directions. To be sure, at times of speculative bubbles this criticism gains credibility. But from several historical incidents we know that exuberant optimism does not last for long and no matter how painful the adjustment may turn out to be, bubbles burst and markets return to their normalcy. Consequently, taking the coordinating powers of traditional and managerial entrepreneurship for granted, what I propose to do next is to investigate how these powers are related, if at all, to the scale and scope of modern enterprises.

Coordination in the absence of innovation

Let us start by assuming that we observe a fully competitive market in long-run equilibrium. From Marshall (1890) we know that, in the absence of innovation, the situation will be like the one shown by points E_1 and A in Figure 3.2 where the prevailing price is P_1. Now if demand increases for some reason and the demand curve shifts from $D_1D'_1$ to $D_2D'_2$ the enterprises in this market will feel the pressure because the price will start to climb. For some time the enterprises will try to benefit from the improved price by taking easily reversible measures to increase the supply of the product. During this period neither they nor other enterprises from outside the market will make

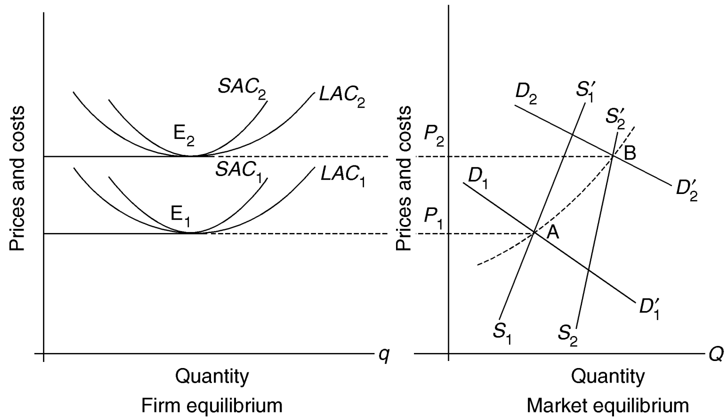

Figure 3.2 Path to equilibrium in the absence of innovation

any move to increase the scale of operations because the nature of the increase in the demand will be uncertain. However, as time goes by and the uncertainty surrounding the shift in the demand is reduced, the enterprises will succumb to the pressure of the potential competition from within and from outside this market. So assuming that supply does increase through a combination of new firms entering the market and old firms expanding their productive facilities, if the industry is an increasing-cost industry, a new long-run equilibrium will be established at E_2 and B.

From the last sentence it follows that, in order for the explanation of the transition from A to B to be satisfactory, the model in Figure 3.2 must be able to explain the path that increasing supply will follow. In particular, the model should be able to predict (a) the expansion of capacity by firms that operate already in the market, (b) the capacity that may be added by enterprises entering the market for the first time, and (c) the rate at which these changes will converge to the new long-run equilibrium.[3] With regard to these issues researchers in the neoclassical tradition have worked out one general and several particular approaches. The general approach provides for the introduction of an additional market in which entrepreneurship is demanded and supplied like all other inputs. For example, according to Stonier and Hague (1953, 325), Vickrey (1964, 143) and other more recent authors, the demand curve in this market represents the marginal productivity of entrepreneurship, whereas the supply curve derives from the notion that Schultz (1975, 834) has defined as 'the value of the ability to deal with disequilibria'. Finally, regarding the particular approaches, these are found in an ever-increasing literature in the direction of new microeconomics initiated by Phelps (1970) and his associates.

To my mind the above represent all there is to the neoclassical analysis of coordinative powers of entrepreneurship in a market without innovation. Are there margins for error on the part of entrepreneurs? Of course there are, since the perceptions about the shift in the demand curve are unknowable. But under the pressure of potential competition, on the one hand, and the lure of profits, on the other, perceptions are adapted so as to drive the decisions of entrepreneurs towards the new equilibrium. Therefore, taking into consideration the qualification expressed in note 3, if there is any substance to the criticism of extreme Neo-Austrians regarding the equilibrating function of entrepreneurship, I myself fail to see it.

Having clarified this point, I turn now to the more thorny issue of the implications of scale and scope for the speed of convergence to the new equilibrium. Figure 3.2 depicts a possible path of moving from point A to point B. How then might the existence of economies of scale and scope influence the speed of adjustment? To an overwhelming extent the answer depends on the nature of potential competition, which in turn depends on the amount of sunk cost of each enterprise in the market. If this cost is negligible, in which case the economies of scale and scope will also be negligible, the market will be highly contestable and the speed of adjustment to the new equilibrium could be instantaneous.[4] On the other hand, if the sunk cost of each firm in the market is large, in which case the economies of scale and scope will also be large, potential competition will be weak, and hence the adjustment to the new equilibrium will be slow, if ever completed.

The conclusion that may be drawn from the above analysis is that the introduction over the years of technologies characterized by economies of scale and scope may have reduced the resilience of markets to adjust from one equilibrium position to the next. However, whether this is good or bad for social welfare cannot be decided without taking into account the relationship of scale and scope to innovation.

Market coordination in the presence of innovation

Launching an innovation is accompanied always by an element of surprise to other market participants because it creates conditions of disequilibrium. To see what happens, consider Figure 3.3. This depicts the sequence of expected events in the market for a substitute good q_1, and the market for a complementary good q_2.[5]

Upon introduction of the innovation potential users will start to experiment with it. For some initial period the suppliers of q_1 will see their sales shrink, whereas the suppliers of q_2 will be surprised by the improved demand for their good. During this period, in light of their ignorance about the reception of the innovation, the suppliers of q_1 and q_2 will stay aloof. But after the innovation takes hold in the market, the suppliers of q_1 will start resisting their losses in market share by reducing prices from $p^0_{q_1}$ to $p^1_{q_2}$, whereas those of q_2 will respond by increasing prices from $p^0_{q_2}$ to $p^1_{q_2}$. Eventually, if the innovation proves commercially successful by realizing sales of, say, q^0, something quite unlikely in the majority of cases, a new equilibrium will be established in which the sales of the two products shown in Figure 3.3 will be q^1_1, and q^1_2 .

This analysis points to two crucial links. The first of them has to do with the relationship of scale and scope to the production of innovations, and the second concerns the same relationship but with regard to the diffusion of innovations. To them I turn immediately below.

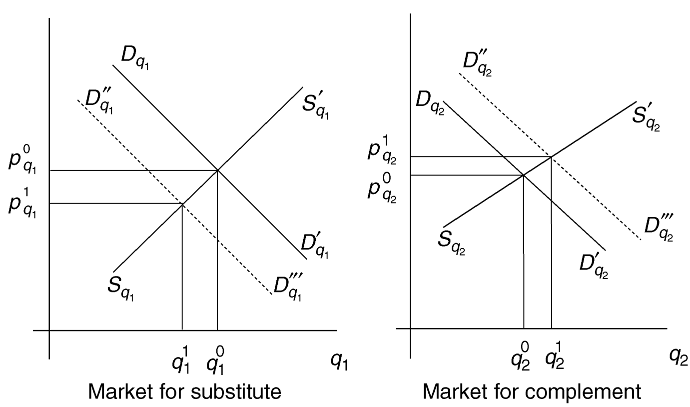

Figure 3.3 Market adjustment in the presence of innovation

Firm size and the production of innovations

The research regarding the production and the diffusion of innovations is vast. Indicative accounts of the attention both subjects attracted in the postwar period are, for example, Mansfield (1968, 1977) and Mahajan and Wind (1986). From this literature it is safe to surmise that the first researcher who considered the relationship of firm size to innovative activity was Schumpeter (1942). He hypothesized that innovative activity is promoted by two main factors: *large firms* and *imperfect competition*. Since then both tenets of his hypothesis have been put to numerous empirical tests, mostly separately (see Link, 1980) but also jointly (see Mansfield, 1963b, and Acs and Audretsch, 1987). The evidence from these tests has shown that, although it is the large firms that resort predominantly to research and development (R&D) activities (see Table 3.1), large firms are not more innovative than their smaller counterparts. More specifically, considering the second tenet of the Schumpeterian hypothesis, it has turned out consistently that markets characterized by imperfect competition are particularly conducive to innovation by large firms, whereas markets more closely resembling the competitive model are more conducive to innovation by small firms. What these findings suggest is that the size of firms is related positively to the rate of innovative activity not directly but indirectly through its influence on market structure. So the interesting question that arises is to identify the ultimate forces that link firm size to market structure to innovation. In this regard, Galbraith (1956) and Scherer (1980), among many others, have noted that scale economies in production may provide scope

Table 3.1 The distribution of R&D expenditures by firm size in US manufacturing, 1958

	Firm size (employees)		
	5,000 or more	**1,000–4,999**	**Less than 1,000**
Number of firms	384	1,459	260,000
Per cent doing research	89	50	4
Per cent of industry research expenditures	85	8	7

Source: Richard R. Nelson *et al.* (1966), p. 48.

economies for research and development.[6] To the extent that this hypothesis is valid, the train of influences would be envisioned to run as follows. The capital intensity caused by economies of scale in production generates economies of scope to innovation. In turn, the economies of scope to innovation provide a barrier to small-firm innovation, thus leading to market imperfections. Finally, by enhancing the profitability of firms, market imperfections furnish the incentives and the resources for accelerating innovation. Simply put, large firms, rather than small firms, are in a better position to exploit the gains from innovation in an industry characterized by economies of scale.

The above leads to the conclusion that, by relating positively to market imperfections, scale and scope raise the rate of production of innovations while retarding the degree of market coordination. However, these findings highlight only one side of the story, since scale and scope are related also to the rate of diffusion of innovations. So to complete the analysis, the following section is devoted to this aspect.

Firm size and the diffusion of innovations

From the work of Mansfield (1963a, 1996) and many other researchers we may surmise with relative certainty that the probability of any given percentage of firms adopting an innovation depends on two determinants. These are the profitability of the innovation and the required investment. In particular, as depicted in the two diagrams of Figure 3.4, the empirical evidence shows that the less profitable an innovation is and the larger the investment its application requires, the less is the probability of any percentage of firms of adopting it. Hence, given that scale and scope are positively associated with the size of investment, the larger the required investment, the slower the diffusion of the innovation and the more sluggish the rate of adjustment to the new equilibrium for two reasons: first, because large firms have the ability to adopt the innovation first; and, second, because having adopted the innovation large firms can deter its adoption by smaller firms. As a result, by slowing down the diffusion rate of innovations, scale and scope lead to further losses of coordination.

In conclusion, from the analysis in this section it transpires that scale and scope accelerate the production rate of innovations, retard

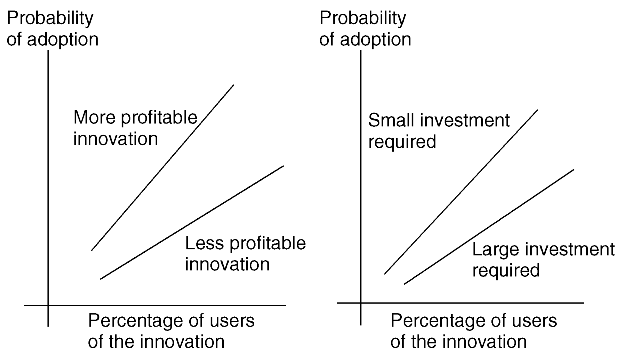

Figure 3.4 Determinants of the rate of diffusion of innovations

the speed of their adoption, and impede the coordinative powers of the market. So the task that remains is to pool all effects of scale and scope on coordination and innovation in order to evaluate their importance for social welfare.

Policy issues

Exploiting the economies of scale and scope, which are associated with present-day multi-product technologies, presupposes among other requirements the enlargement of business units and the commitment on their part to large-scale investments. In the process though, markets become increasingly imperfect with two consequences. On the one hand the rate of innovative activity increases, whereas on the other the adaptability of the economy is reduced due to losses in coordination. Drawing on these two tendencies, one is tempted to hypothesize that the economies of scale and scope are related to the ratio of coordination to innovation via a negatively sloping relationship like the one shown by curve *SS′* in Figure 3.5, the rationale for the negative slope being that, as economies of scale and scope increase, the aforementioned ratio declines because the index of coordination decreases and that of innovation increases.

In view of the possibility that a relationship like *SS′* may exist and be fairly stable, the question that arises for regulatory and other policy-making authorities is how to account for its implications. As is the case with many other problems involving choices among

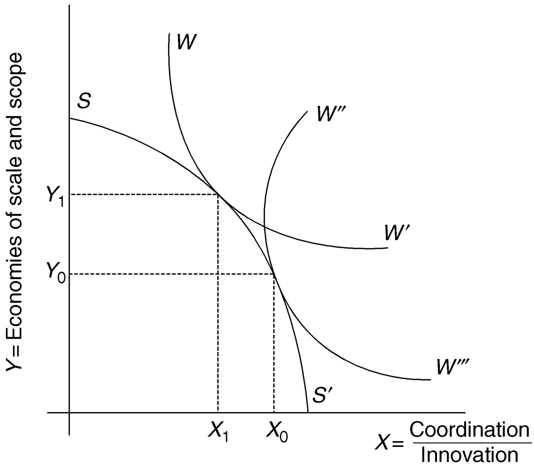

Figure 3.5 Coordination and innovation in the presence of economies of scale and scope

conflicting social ends, the answer depends on the presumed preferences of society. If these preferences are believed to be represented by social welfare function *W″W‴*, authorities should aim at achieving equilibrium point X_0Y_0. At that point people would give high priority to market coordination, with emphasis on relatively small-scale enterprises and traditional entrepreneurs, and the growth of material welfare would be moderate. On the contrary, if social preferences are represented by *WW′*, people will give high priority to innovation and growth, driven primarily by managerial entrepreneurs and large-scale enterprises, and they will not mind very much about market coordination. In that event, policy-makers would be advised to aim at achieving equilibrium point X_1Y_1. Hence, which policy choices would be better suited in the case of each particular country depends crucially on the priorities of its citizens and the stage of development of its social and economic institutions.

Conclusions

For many decades now innovations have favoured the development of multi-product technologies that are characterized by economies of scale and scope. To exploit these economies and prevail in international markets, enterprises in advanced capitalist countries grew in three crucial directions. First, they attained the required organizational capabilities to coordinate effectively activities that were widely dispersed geographically and functionally. This was achieved mainly by separating the ownership from the control of enterprises and facilitating the substitution of traditional entrepreneurs by professional managers. Second, they promoted rapid innovation by resorting to systematic research and development efforts. And, third, they enhanced control over their markets by introducing innovations whose application required large-scale investment and which led to continuous product differentiation.

All these developments raised the material standards in the respective countries to unprecedented levels. But simultaneously they led to losses in market coordination because they increased market imperfections. As a result the economies of scale and scope appear to be negatively related to the ratio of coordination to innovation in the economy. For this reason, to the extent that policy-makers strive to achieve the priorities of citizens, as represented in the social welfare function, they are advised to allow for the implications of this relationship to the best of their information.

Notes

1. The activities of entrepreneurs within modern enterprises are referred to in the literature as 'intrapreneurship'. For an excellent account of the difficulties involved in the implementation of intrapreneurship as well as the available approaches to dealing with them see Schollhammer (1982).
2. With the exception of Kirzner (1992, 3–37) and his followers, who are very close to the neoclassical views as to the equilibrating powers of entrepreneurship at least in the dynamic part of the analysis.
3. Baumol (1968), Baumol *et al.* (1988) Barreto (1989) and others have pointed out, and Eliasson and Henrekson (2003) ascertained recently, that the model of perfect competition does not allow for the presence of entrepreneurs and entrepreneurship. This view implies that long-run equilibrium is imposed exogenously. Yet, from the research of Nadiri and Rosen (1974) Eliasson (1984) and others, it follows that the interesting question is not how long-run equilibrium is established but how the markets and the economy move from one long-run equilibrium to another. This transition presupposes the existence of a mechanism to confront disequilibrium situations of the sort depicted in Figure 3.2. Evidently this mechanism is associated with the activities of entrepreneurs. But the introduction of

entrepreneurship as an endogenous process of bringing about equilibrium after long-run equilibrium is disturbed remains unabated.

4. For an analysis of the relationship between the degree of contestability in a market and the amount of required costs for entry see Baumol *et al.* (1988).
5. Lest it is construed that the term 'good' in this sentence refers exclusively to final or consumer goods, it is stressed that the following analysis could be applied also to explain the sequence of events when the innovation concerns the introduction of a new technique.
6. According to Scherer, 'Research and development projects may benefit from scale economies realized in other parts of large firms' operations' (1980, 414).

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4
Measuring Historical Entrepreneurship

James Foreman-Peck

Measuring entrepreneurship, assigning numbers to the concept, requires identification of who is or is not an entrepreneur, and therefore what entrepreneurs do.[1] One approach represents entrepreneurs as identifying and exploiting profit opportunities resulting from market disequilibria, so eliminating this profit and balancing the market (Kirzner, 1973). Another links entrepreneurship with innovation (Schumpeter, 1961). Entrepreneurship might then perhaps be measured by profit stemming from innovation. Profit corresponds with the 'adding value' indicator of entrepreneurial performance (Kay, 1993, ch. 2). But actual profits may be as much a symptom of lack of competition (as in the 'persistence of profits' literature: for example, Geroski and Jacquemin, 1988) as of successful innovation. Ideally the profits should be rewards for successfully bearing uncertainty, rather than for the exercise of monopoly power (cf. Knight, 1921).

For some purposes, productivity may be a more satisfactory measure of socially desirable entrepreneurship. In principle the contribution to productivity increase of new industry entrants, clearly performing an entrepreneurial function, can be distinguished from that of established and surviving businesses on the one hand and exiting businesses on the other (for example, Disney *et al.*, 2003). This solution is by no means complete, however, for at least two reasons.

First, supposing that the productivity of successful process innovation is identified, the impact of product innovation is more difficult to take into account. While a successful process innovation for an existing product will reduce inputs and raise productivity, prices are a less satisfactory indicator of the willingness to pay for product innovations.[2] Second, a competitive industry is likely to need continual flourishing innovation among survivors, so that long-lived established businesses in such industries will exhibit entrepreneurial behaviour as well. The rise of the corporate economy has meant the institutionalizing of entrepreneurship.[3] A distinction between entrepreneurship, on the one hand, and management, on the other, is therefore not easy to draw in practice. The chief executive will generally take the credit for high corporate achievement.[4] But the source of successful innovation may well be elsewhere in the company. In any case the grounds for discriminating between 'intrapreneurship' and entrepreneurship do not seem strong. So professional managers who are associated with high-performing firms may as well be accorded the same status as founders or inheritors of growth businesses. No measure of entrepreneurship is likely to be satisfactory for all purposes, but some can be more suitable for answering specific questions than others.

Because entrepreneurs are conventionally attributed with the introduction and diffusion of new products, processes and organizations, they are often assigned key roles in the success or failure of whole economies. The interest in measuring entrepreneurship stems from a concern with such consequences and their causes. Though only a very few of the huge number of firms spawned are really successful, the long-term economic significance of truly dynamic businesses, and the entrepreneurs that run them, is immense. The conditions that give rise to outstanding new firm formation therefore attract enormous attention. If Alexander Graham Bell had not left Scotland first for Canada and then the United States, would the 'Baby Bell' telephone companies ever have been born? Why did the Rothschild banks flourish in Paris and London but not in Naples? What is so distinctive about the family or their strategy that Cadbury-Schweppes is still chaired by Sir Dominic Cadbury, whose forebears founded the company in the early nineteenth century? What makes entrepreneurs, what they achieve and how they accomplish it depend upon their generally complex social context.

To assess the impact of this social environment on entrepreneurship requires simplifying models, implicit or explicit.[5] There is a close relationship between measuring and the higher-level concept, modelling. Modelling involves the selection of abstract and measurable aspects of a phenomenon, such as entrepreneurship, so as to better understand it. A helpful approach to modelling is to distinguish between the supply of entrepreneurs (persons with appropriate risk attitudes, resources, information and so on) and the demand, or opportunities, for entrepreneurs (Casson, 1982). An extension is to focus on the culture in which the entrepreneur operates as the determinant of opportunities (Casson, 1991, 1999). In any clearly defined business environment such models usually imply that there will be ideal production and marketing decisions with which in principle less satisfactory choices can be compared.

This chapter first discusses the implications of identifying entrepreneurs with business founders, and the corresponding measure of entrepreneurship, the number of new firms established. The supply of entrepreneurship can then be analysed as a choice between employment, self-employment and, in some circumstances, unemployment. Either well-being or the expected profit, income or wealth from the employment options are the objects of choice. Profit or wealth is therefore examined as a possible indicator of entrepreneurial performance in particular contexts. The determinants of entrepreneurship are the factors that influence the choice of employment. Credit rationing is especially worth considering, since even small businesses require capital, which may not always accompany entrepreneurial talent. Distinctive historical measurement and estimation problems, including those arising from entrepreneurial culture and social mobility, are addressed in some detail.

The chapter then considers measures of entrepreneurial optimization, focusing first on choice of technique of production and then on total factor productivity indices that embody this choice, distinguishing aggregate performance from that of the individual entrepreneur. Examples show how the choice of production technique approach can be extended to product selection and entrepreneurial success, as well as quantifying the gains from improving the extent of best practice, thereby reducing the dispersion in entrepreneurial performance.

Entrepreneurship as firm formation

A common approach is to study becoming an entrepreneur, defined as starting a firm or becoming self-employed. Then the corresponding measure of the entrepreneurial vigour of a social group of or an entire economy is the propensity to found new firms. A simple but strikingly effective way of applying this principle to identify influences upon entrepreneurship is to compare the proportions of a group that are self-employed in different environments. This Andrew Godley (2001) does with Jewish immigrants to London and New York between 1870 and 1914. He finds a significantly higher proportion of them self-employed in New York and proceeds to analyse the contrasts between the two societies that gave rise to this difference in firm formation.

Not all, or perhaps most, new firm-founders would meet the 'innovativeness' requirement of entrepreneurship. In principle a successful entrepreneurial subset of firm-founders may be defined as those earning more than they could as employees, after allowing for the opportunity costs of other resources employed. This definition has the merit of excluding firm-founders who are prepared to earn less than their wage in employment simply in order to be self-employed, or to work in a different location.

A standard quantitative specification for studying entrepreneurs as firm-founders involves the choice between employment and self-employment, according to expected income (Hudson, 1987), or to the utility derived from the options (perhaps stemming from the attitude to risk). The key equation typically explains the probability of choosing self-employment rather than employment. Perhaps the most widely used approach to modelling the choice between types of income is based upon Evans and Jovanovic (1989). Here self-employment income is determined by a production function with an entrepreneurial efficiency parameter and dependent upon experience and human and financial capital. From this production function is subtracted the opportunity cost of the entrepreneur's capital that would be committed to the firm.

The principle that more competent entrepreneurs will demand more capital (other things being equal) was utilized in a study of nineteenth-century Greek entrepreneurs (Foreman-Peck and Pepelasis Minoglou, 2000). It appeared that entrepreneurs operating abroad as well as in Greece had stronger than average demands for capital, perhaps because they could seize, or at least identify, more opportunities in the wider geographical market.

What determines the duration of survival of a start-up business (for example, Taylor, 1999) and its exit (Robson, 1996)? An international index of entrepreneurship, that compared the propensity to start new firms as a proportion of the total population, would show the USA as a high achiever and Europe performing poorly. However, a high rate of US firm formation is matched by a high bankruptcy rate. This in turn is in part a response to a different legislative environment and to rewards for risk-taking.[6] Whether the high rate of firm formation then indicates more entrepreneurship in the USA than in Europe is a moot point. There is a greater willingness to enter industry perhaps because the penalties of failure are lower.[7]

There are other related limitations of this measure of entrepreneurship. Firm formation can be a 'choice' when there are no other tolerable options open. The boom in new firms during deflationary periods may have meant the start-ups were 'chaff' rather than 'seedcorn' (Storey, 1982; Foreman-Peck, 1985). A high formation rate stemmed from the lack of alternative work for the otherwise unemployed founder. Whether such people on average were sufficiently innovative to be defined as entrepreneurs is questionable. Their opportunity cost of self-employment was lower during slumps. For this reason, firm formation is not necessarily a good measure of entrepreneurship. It would be better to know how many or what proportion of 'start-ups' grow rapidly for some time ('gazelles'), attain a reasonable size or even last for more than two or three years.

Entrepreneurial profit, income or wealth

A way of addressing one objection to firm creation as an entrepreneurial measure – that many start-ups involve no innovation or novelty – is to focus on profit, income or wealth generated by the businesses. In a competitive economy like nineteenth-century Britain, where statutory monopoly was insignificant, profitability was a signal that a business was delivering what the market required. Other things being equal, a firm with higher productivity than its competitors will be adding more value and making more profits. The entrepreneur receives profits and accumulates some, either as corporate or personal wealth.

Until recent periods data on the income of the self-employed versus the employed have been in limited supply. But wealth at death is often available from wills (see Rubinstein (1981) for Britain and Daumard (1973) for France). The utility of the index turns on, among other things, the absence of disincentives to accumulate wealth. For this reason, in Britain the period before the rise of inheritance taxation around the time of the First World War is most suitable to apply the wealth at death measure. Changes, or expected changes, in this tax rate may induce fluctuations in accumulation that distort the measure. Marked alterations in the price level, as continued after the war, are likely to reduce further the suitability of the index.

The measure is subject to a number of other caveats. Wealth at death depends upon lifetime consumption as well as upon income, and consumption patterns may differ between sectors and professions. If the cost of living in London were greater than in the rest of the country (rents are undoubtedly higher, for instance), consumption spending of London entrepreneurs would therefore be higher, and for given entrepreneurial performance their wealth at death would be lower. Thus a failure to find a significant difference between London and other regional entrepreneurs' wealth could nonetheless be interpreted as evidence of stronger entrepreneurial performance in London; that is, their nominal earnings in London are likely to have been higher.

Protestant ethic-type explanations for entrepreneurship emphasize frugality and unwillingness to engage in conspicuous consumption. Such people – say Nonconformists in nineteenth-century England – would need to perform less well to attain the same wealth at death as less thrifty entrepreneurs. The frugal accumulate more from given entrepreneurial income and therefore end up with higher wealth.

There is also a sampling issue to be addressed in drawing inferences from wealth at death data. Suppose the selection of entrepreneurs in the British *Dictionary of Business Biography* (*DBB*) was influenced by editorial interest in manufacturing industry, stemming from the traditional historiography of the Industrial Revolution. In this case the sample could be misleading as a guide to the relative importance of entrepreneurial wealth from finance and commerce in British industry as a whole (Nicholas, 1999b, 2000; Rubinstein, 2000).[8] On the other hand, the fact that the *DBB* contains only a small proportion of the wealthy entrepreneurs in the period studied is not a source of error in itself. The precision with which sample characteristics can be measured depends on the size of the sample, not on the proportion.

Does a focus on successful entrepreneurs bias conclusions? Genuine risk-taking must involve failure, but so long as those who failed were simply unlucky, characteristics of winners and losers will be similar. Where gradations of entrepreneurial success are measured, it may be reasonable to suppose that the fewness of observations at the failure end of the spectrum is compensated by the adjacent relatively poorly performing entrepreneurs. As to the social impact of bankrupt entrepreneurs, if the market works reasonably well and the value of an entrepreneur's assets – be they telegraph cables or buildings – is less than their liabilities, this is a signal that entrepreneurship has subtracted from rather than added to society's economic well-being. In practice, matters may be more nuanced, and historians have shown interest in gallant failures as well as successes.

Rationing credit to entrepreneurs

A potential entrepreneur unable to borrow enough may be constrained to start a firm at an inefficient size, with a greater chance of bankruptcy and creating fewer jobs. The new business may even be stillborn. Availability of bank credit and other sources of capital, such as inheritances, therefore have been a focal point of enquiry (Blanchflower and Oswald, 1990; Holtz-Eakin *et al.*, 1994; Cressy, 1996). There is a long literature about credit rationing by banks based upon asymmetric information between lender and entrepreneur borrower. Individual entrepreneurs are frequently assumed to know how risky are their prospective debts but lenders are not. It is often supposed that only poor credit risks would be willing to pay high interest rates on debt – on the grounds that if they are unlucky they will go bankrupt and not pay at all. So to avoid this 'adverse selection' banks choose to ration their loans by size rather than by higher interest rates.

At higher interest rates, existing borrowers may switch to riskier projects. Thus, a lender's expected return will eventually fall as the interest rate charged to borrowers increases (Stiglitz and Weiss, 1981). At higher interest rates, safe enterprises are hardest hit: although they have greater chances of repayment, they are obliged to pay rates appropriate to risky business. They drop out of the market, leaving only firms with a high risk of default. One solution to this problem is to cap the interest rate on loans and restrict how much is lent to any one customer. In so far as starting successful businesses requires a threshold level of capital, this policy may reduce start-ups. Hence entrepreneurs who can call upon more equity, through family, friends or inheritance, may be more likely to found a flourishing firm.

Subsequent theoretical analysis has suggested over-lending is at least as probable as this predicted under-lending. The rich will be able to take more equity and so the gearing of their start-up firms (not subject to financial constraints) will be lower (de Meza and Webb, 1999). If new, less able, borrowers enter the market with consequently higher risk proposals, as interest rates increase, then the overall risk of lenders' portfolios also rises (de Meza and Webb, 1987). In contrast to the previous (Stiglitz and Weiss, 1981) model, lower-risk borrowers do not abandon their projects. In these circumstances lower-risk borrowers subsidize the higher-risk projects and hence there are too many entrepreneurs. As entrepreneurial wealth rises, this excessive entry is reduced and start-ups fall. Entrepreneurs hold more equity in their projects and therefore take fewer inordinate risks.

How do we tell which model is appropriate – whether bank lending creates too many or too few entrepreneurs? Of 453 cases of English banks refusing to make loans to industrialists between the 1860s and 1914, 23.8 per cent involved new firms (Capie and Collins, 1996). New businesses were more likely to fail the standard capital adequacy criteria. Does this mean that start-ups were unwarrantedly deprived of funds? New firms were unlikely to account for as much as 23.8 per cent of loan applicants in any period, so they do appear to have been disproportionately penalized, but possibly quite correctly. Measurement without theory or a standard of comparison cannot take us far. Similarly a more extensive study (Capie and Collins, 1999) showed that a sizeable proportion of bank loans to industry were granted without the deposit of tangible collateral.[9] A rational banker would grant an unsecured loan if the company was considered extremely reliable, but entirely new firms could not fall into that category. It is no surprise then that for a collection of twentieth-century firm-founders, capital was overwhelmingly derived from the individual's own resources or those of a partner. Only 4 per cent of the sample obtained their capital from a bank (Shaw, 1993). But this might only imply that bank terms were relatively expensive or imposed an unacceptable loss of control or constraint upon business, not necessarily credit rationing. A study of British bank lending to start-up firms in the 1980s found allocation according to a wide range of human capital variables and no need to invoke any rationing effect (Cressy, 1996).

If banks rationed credit by loan size instead of entirely by interest rate charged, higher interest rates might encourage banks to lend to riskier prospects and thereby increase new firm formation. In fact the opposite effect has been estimated. Interwar British company formation was negatively related to interest rates, as might be expected if there was no credit rationing (Hudson, 1989).[10] Using selected start-up data for the Second Empire French economy a similar impact is found. Also for nineteenth-century Greece there is evidence that financial turbulence, which must be associated with higher interest rates reduced start-ups. The depreciation of the exchange rate predicts a fall in the general level of firm start-ups in the 1890s.[11]

Supposedly, evidence for rationing has been the finding that the chances of self-employment in the USA were influenced by financial asset ownership (for example, Evans and Jovanovic, 1989). But there are other explanations. A correlation between assets and self-employment could stem from entrepreneurs forgoing more leisure than others to accumulate wealth, so that they can start a business (as Quadrini (2001) found for the present-day USA).

Entrepreneurship and inheritance

If inheritors show a higher propensity to self-employment then this need not be taken as evidence of unreasonably credit-constrained start-ups; more equity reduces the risk of firm formation and should therefore encourage it. Some self-employment may be merely inheritance of established family firms, the value of which is included in inherited financial assets. The (British) National Child Development Survey provides an unusual longitudinal data set that allows the study of wealth and other correlates of self-employment (Blanchflower and Oswald, 1998; Burke *et al.*, 2000). It follows a cohort born in one week in March 1958 to 1991. Inheritances of financial gifts increase the probability of self-employment. More recent inheritances decrease the chances of self-employment. Up to a threshold of £70,000 inheritance increases job creation, but above that level exercises a negative effect. The general credit constraint appear to be rejected.

The foregoing reasoning about the operation of capital markets can be extended from the choice of self-employment to entrepreneurial wealth at death as a performance measure.[12] With capital markets in which there was neither credit rationing nor over-lending there should be no relationship between entrepreneurs' inherited wealth and their wealth at death. Entrepreneurial performance would be independent of the size of the entrepreneur's equity stake from inheritance. In reality then, the importance of inherited wealth should vary according to capital market 'imperfection' and particular business needs for capital.[13]

Historical studies using inheritance data as a performance indicator face their own distinctive difficulties. Often when a father's wealth at death can be identified, the assumption that all is left to a particular person cannot be tested. A father's wealth at death is not the same as inherited wealth and thus wealth utilizable for business.

Measuring cultural influences

Religion and the education patterns of entrepreneurs are commonly studied influences on their choice of occupation and their success. Mrs Thatcher's most prominent minister, Sir Keith Joseph, required that all his senior civil servants read Wiener's *English Culture and the Decline of the Industrial Spirit* (entirely free of measurement) so that they could understand Britain's industrial ills as the result of 'leisure class' attitudes. Even simple cross-tabulation can provide more rigorous evidence for cultural influences upon entrepreneurship. For instance in nineteenth-century Scotland the disproportionate scarcity of Roman Catholic businessmen supports the hypothesis that religion affected the supply of entrepreneurs (Foreman-Peck and Boccaletti, 2002, 21).

More systematically, the influences of formal human capital (Bates, 1990; Cowling *et al.*, 1997) and informal human capital, as measured by second-generation proprietors (Lentz and Laban, 1990), on entrepreneurship – or self-employment – have been estimated for recent times. In contemporary Britain regression analysis of panel data showed that formal education reduces the probability of becoming an entrepreneur – which could be interpreted as consistent with Wiener's thesis. But university education raises income, given that a person is self-employed (Burke *et al.*, 2000). The father's occupation has some influence on the direction of the heritability of entrepreneurship.

Motivated by an interest in entrepreneurial vigour, 'achievement' scores for groups and epochs have been constructed from content analysis of literature, corresponding to questionnaire scores derived from contemporary respondents (McClelland, 1976). More recent questionnaire-based approaches could be adapted to compare, say, the context of labour history and business history biographies to identify cultural influences. In their study of networking, Drakopoulou Dodd and Patra (2002) found that Greek entrepreneurs were highly authoritarian, outranking those of Japan and Italy (as well as the UK and the USA) on the 'power distance' measure. The variable is one of Geert Hofstede's (1980) four dimensions of culture that have proved enormously popular in cross-cultural comparisons of influences upon entrepreneurial behaviour. The measures are:

- *individualism*: the degree of individual or group orientation
- *power distance*: the level of preference for equality or inequality within groups
- *certainty*: the preference for risk versus structure
- *achievement*: the relative degrees of relationship versus task orientation. This dimension also tracks the relative masculine and feminine influences in the workplace.

Power distance in particular measures subjects' valuations of the interpersonal power or influence between superior and subordinate; in a culture with high power distance, subordinates defer to superiors and do not question their authority.

To obtain measures of power distance, a block of statements are presented to entrepreneurs, such as 'In work-related matters, managers have a right to expect obedience from their subordinates' and 'Employees should not express disagreements with their managers'. The subject is then asked to score their reaction to the statement on a (seven-point) scale ranging from strongly disagree (1) to strongly agree (7). The scores are added up to produce the power-distance index for the respondent.[14]

A 'Cronbach alpha' figure is sometimes supplied with the index mean and variance. This statistic shows how consistent the responses to the different statements have been. When the average inter-statement correlation is low, the Cronbach alpha score is low. A 'high' score is taken to confirm that a genuine 'latent construct' has been identified. Some form of 'Delphi' technique could control the employment of analogous approaches on historical material; whereas one person's scoring of, say, a biography might be dismissed as subjective, the independent agreement on the score of several experts offer greater confidence in the judgement.

Measuring entrepreneurial social mobility

Entrepreneurship can transform whole societies by changing the characteristics of ruling groups. Entrepreneurship ensures that 'the upper strata of society are like hotels which are indeed always full of people, but people who are forever changing', according to Joseph Schumpeter (1961, 156). This does not mean that the new arrivals originate from the lowest strata of society and anyway there have been other channels than business for upward and downward mobility in Western societies. Politics, rather than entrepreneurship, was responsible for widening the recruitment of the US elite over the twentieth century (Temin, 1999). In Western Europe, where state intervention has been more pervasive, business elites seem to have become more open than in America; upward mobility was apparently greater (Kaelble, 1980; Cassis, 1997).

The challenges of measuring historical entrepreneurial mobility into the 'upper strata' can be illustrated with Table 4.1. The table, constructed from marriage register data (Miles, 1993), measures mobility from all occupations into the much broader class I in late Victorian Britain. Column 2 shows that there was just under one chance in a thousand (0.0009) that a son with a father in class V would end up in class I – 'fathers in class V' was a large group. At the other end of the spectrum the chance of being in class I with a father in class I was 0.42, almost 50:50. Column 3 shows that the probability of a son in class I having a father in class V was rather higher – over

Table 4.1 Transitions to social class I, 1879–1914

Fathers' class *i*	**Pr(S1 | Fi) Chance of arriving in class I with father in class *i***	**Pr(Fi | S1) Chance of a son in class I having a father in class *i***	**RCA = Pr(S1 | Fi)/ Pr(S1)**
I	0.42	0.587	27.3
II	0.02	0.256	1.3
III	0.0036	0.110	0.2
IV	0.0046	0.042	0.3
V	0.0009	0.013	0.06

Note: Registrar General's 1951 classification.
Key: S = son, F = father, Pr = probability, | = 'conditional upon', RCA = revealed comparative advantage.
Source: Calculated from Miles (1993) Table 2.1.

one in a hundred – because there were relatively few sons in class I. Column 4 indicates whether, and in what direction, class origins of father made a difference. No difference is signified by an index of 1. The RCA index would be unity if the son's class were independent of the father's class – there would be no advantage or disadvantage in starting from a particular class for entering any other class. The chances are in fact more than even that a son in class I would have a father in class II (RCA = 1.3).

The probability of the third column is preferable for analysis of mobility into the 'upper strata' because the small size of the elite group compared with others – such as all manual workers – means that the mobility probabilities are otherwise extremely small and therefore particularly vulnerable to sampling error (Temin, 1999). Comparison of the 0.0009 and the 0.013 hints at the magnitude of the difference between the two measures, which is far more extreme with the much smaller size of the elite than class I. There is a case for studying instead the chances of originating in a particular social group and being in the elite. The relation between this measure and the more conventional index depends on the relative sizes of the social group in question and the elite, being determined by the inverse probability rule.[15]

Cross-tabulations, such as Table 4.1, are limited in their value for explaining the causes of mobility because there are potentially a considerable number of variables at work, the effect of each of which must be isolated. A more powerful formulation is written:

$$Pr_{ij} = f(Z_i) \tag{4.1}$$

where Pr_{ij}, the probability of any elite member i originating in one of two groups, such as 'upper class' and 'all other classes', depends on Z_i, a variety of factors.[16] The analysis can be extended to cover a more detailed classification of the social origins of those moving into any social class or into the elite with a multinomial logit model (Schmidt and Strauss, 1975). However, when the dependent variable is the social origins of those in the elite, those factors influencing the probabilities of interest pertain to elite members, not to the population as a whole. The influence of entrepreneurship or business upon the chances of someone in the elite originating in a certain class is not the same as the influence of entrepreneurship or business on the probability of a member of a certain class joining the elite. The relationship between the two depends upon the relative proportions of entrepreneurs from the class of interest and of entrepreneurs in the elite.

Multinomial logit confirms Schumpeter's prediction that, controlling for other factors, intergenerational mobility into the British elite was indeed higher among those with manually employed fathers working in business than in other occupations between 1870 and 1914. However, access to better education seems to have ensured greater entry to the elite of the middle classes through the professions and the civil service, not through entrepreneurship and business (Foreman-Peck and Smith, forthcoming).

Entrepreneurship as choice of technique

Successful entrepreneurs may be driven by a variety of motives, but if they work in a competitive market economy, they must pursue a strategy that makes profits and they must be efficient in some respects. These are conditions for survival and success, independent of motive and other consequences such as economic growth which will normally accompany such behaviour (Payne, 2002). In a competitive environment, profits will be earned only by effective innovation in products and processes.

An innovation must be modelled at a level of generality that assumes away innovativeness; a new technique might be represented as a combination of factors of production in a particular industry, for instance, although it is also much more than this. The efficient choice of technique approach is presented in Figure 4.1. To display the logic, the axes could represent skilled and unskilled labour or raw materials and other inputs instead of capital and labour.

The first point demonstrated by the model is that entrepreneurs cannot be assumed incompetent merely because they employ a different technique from that in another firm or economy if their circumstances also differ. The classic controversy in British economic historiography concerned the later nineteenth-century cotton industry, ring spinning in the USA and mule spinning in the UK. US and British entrepreneurs chose respectively *B* and *A* in Figure 4.1 (Sandberg, 1974). Given the different costs of factors of production in the two economies, each

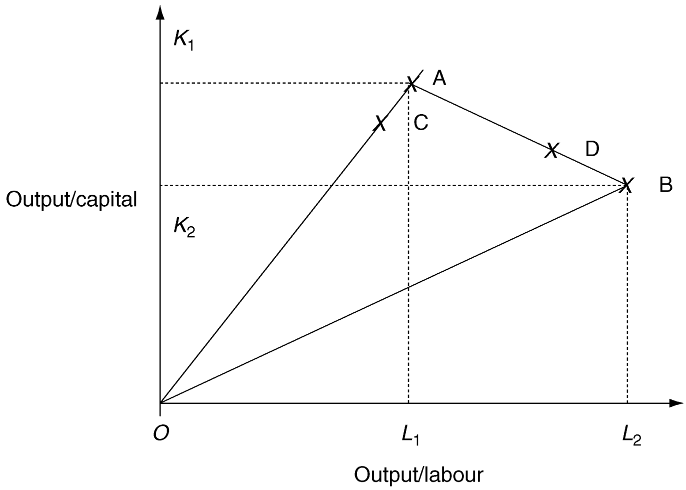

Figure 4.1 Efficient and inefficient entrepreneurs

point could be cost-minimizing in the different environments. The USA uses more capital than Britain to produce a given output (say); American capital productivity is lower at K_2, compared with British entrepreneurs' K_1. But because labour is more expensive (better paid) in the USA, American entrepreneurs employ less labour per unit of output and choose a higher level of labour productivity L_2, compared with Britain's L_1.

An entrepreneur adopting a technique D could not be accused of incompetence. Although labour productivity is lower than the US technique at B, capital productivity is higher. A related argument can be presented relative to the British technique at A.

These positions so far do not demonstrate that different techniques were justified, only that they could be, if the prices of inputs were appropriate. Technique B is not dominated by technique A – unlike C. An entrepreneur at C produces less output per unit of capital and labour than an entrepreneur at A. C is dominated by A; this is a type of entrepreneurial failure that emerges from the 'choice of technique' model.

In fact improved measurement has shown that labour productivity was higher in Lancashire than in New England: L_2 was to the left of

L_1 (Leunig, 2003). Unless American cotton textile entrepreneurs achieved greater productivity with other factors, their technique was inferior to that of the British. It turns out that US productivity in raw materials and energy was lower as well, so that American productive efficiency was indeed below that of the British industry.

Typically entrepreneurship involves utilizing a variety of inputs, and sometimes they are unique to an economy or an individual. The nineteenth-century British paper industry adopted esparto grass from Spain as a raw material for paper, to substitute for the rags that did not increase in supply sufficiently as paper demand expanded (Magee, 1997). By contrast the US industry opted for wood pulp, producing paper of lower quality. During the 1890s US productivity drew ahead of Britain's, not because of the raw materials, but because there were scale economies in the industry that America could exploit and the slower-growing smaller British market could not.

The model represented in Figure 4.1 implicitly assumes constant returns to scale. Larger industries are no different from smaller. All that matters is input ratios. In the above account, the capital-intensive continuous-flow nature of paper production instead meant that larger throughputs reduced unit costs. Technique A could dominate technique C simply because the volume of output entrepreneur A could sell was so much greater than could entrepreneur C.

Where scale matters, an economy or entrepreneurial firm might be able to produce more efficiently with every input combination, if output is everywhere greater. In this case total factor productivity (TFP) would be higher. In Figure 4.2, the frontier A′D′B′ is everywhere above ADB. Entrepreneurs with frontier A′D′B′ are more successful than those with ADB, though perhaps for reasons for which they themselves are not responsible. Whatever inputs they have available will be used more efficiently.

The total factor productivity measure of entrepreneurial performance can also be offered in dynamic form. An entrepreneur or economy is more successful than another when total factor productivity *growth* is higher (for example, Nicholas, 1982, 1985; Thomas, 1985). The drawback with this approach, as the economies of scale example suggests, is that circumstances beyond the control of the entrepreneur may underlie the differential rates of shift. Attributing responsibility to entrepreneurs in these circumstances transforms empirically

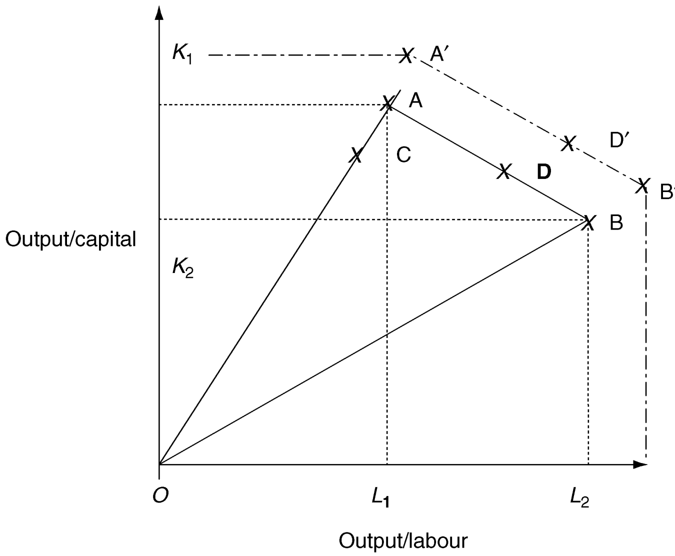

Figure 4.2 Entrepreneurs operating at a higher and lower total factor productivity

falsifiable theory into a doctrinal judgement. Entrepreneurs are here held responsible for outcomes, in the sense of accountable, regardless of whether they might plausibly be expected to have altered them. As a way of measuring entrepreneurship the TFP growth approach is therefore seriously flawed.

Measuring entrepreneurial choices: data envelopment and stochastic frontiers

As the above analysis shows, with knowledge of all entrepreneurs' input combinations it is possible to calculate which techniques were efficient – on a frontier – and which were inefficient or dominated. Where there are large numbers of entrepreneurs whose performance is to be examined, more systematic techniques are available. An efficiency or performance benchmark requires not only information about outputs and inputs of the types discussed above, but also weights and formulae for combining them. For instance, in Figure 4.1 there are ratios of output to capital and output to labour that must be added together into a single index to establish whether an entrepreneur is on an 'efficiency frontier'. Data envelopment analysis and stochastic frontier analysis are common means of identifying such a frontier (though their 'success' is still debated).

Data envelopment analysis (DEA) 'solves' the weighting problem by selecting a different set of weights for each unit or organization in the study.[17] The weights are chosen so as to give the highest possible value of the efficiency index for each entrepreneur or unit. An entrepreneur or unit is efficient if no linear combination of other units gives a higher efficiency score. In Figure 4.1 D is a linear combination (on a line between) A and B. The 'efficient frontier' consists of linear combinations of efficient entrepreneurs or units.

A linear programme searches for combinations of entrepreneurs or units that produce at least as much output, in every dimension, as the unit of interest, but which consume the minimum fraction of each input used. This fraction is then the technical efficiency of the entrepreneur or unit of interest. The programme must be run as many times as there are entrepreneurs or units for which efficiency scores are required.

Stochastic frontier analysis (SFA) (Aigner *et al.*, 1977) is a development of the ordinary least squares (OLS) regression model. The approach can be conceived as assigning the weights to, say, a set of inputs by entrepreneurs in a common production process that provide the best fit between these inputs and the entrepreneurs' outputs. Unlike DEA, the weights are common to all entrepreneurs.

Whereas OLS regression generates weights on the assumption that the unexplained variation in the output or the dependent variable is symmetrically distributed around a zero mean, SFA, as the name suggest, instead adopts the assumption that the relationship is a frontier or envelope. SFA estimates an asymmetrically distributed 'efficiency' term, as well as the symmetrical normal disturbance term of OLS regression.

The skew of the efficiency distribution depends on the function being estimated. A production function would be expected to have a tail of units with high inputs (X) and low outputs (Y), even though most units would be clustered close to the efficiency frontier, with low inputs and high outputs. Where u is the 'inefficiency' term, and v is the stochastic term, the production function is

$$Y = bX + v - u \tag{4.2}$$

An SF cost function is

$$C = bY + v + u \tag{4.3}$$

v is symmetrically distributed around a mean of zero, as if the values are a consequence of measurement errors for instance. By contrast, all values of u are positive, with greater frequencies close to the mean (such as described by a half-normal distribution, an exponential or a truncated normal distribution).

Given the negative sign on the efficiency term in the production function, so that u is an inefficiency term, the distribution of $v-u$ should be negatively skewed (the elongated tail of the distribution is on the left of the mean).[18] A small number of units will be a long way from the efficiency frontier and will reduce average output (Y) relative to average input (X). The converse is true for the cost function. A small number of inefficient units a long way from the frontier will raise costs for given output, so that the distribution of $v+u$ is positively skewed.

Like OLS regression, it is possible to assess how well an SFA model fits the data, with tests of significance. These are unavailable for DEA. DEA works best when the process modelled is approximately linear and there are sufficient observations close to the efficient frontier to capture the functional form, or for non-linear processes, when the variation in the drivers is small (Cubbin and Potonias, 2001). Without these conditions DEA requires several hundred observations to model accurately. (See also Cubbin and Zamani, 1996.)

Both DEA and SFA in their original form are single-equation approaches to performance measurement. But many social relations involve more complex interactions. Methods have been developed to address this challenge in the data commonly analysed by econometric methods – though they have not been refined for SFA. For DEA an approach to the 'simultaneous determination problem' is to regress initial DEA scores against the 'environmental variables' in a second-stage regression model. This attempts to allocate variation in first-stage efficiency scores to three distinct sources – the operating environment, statistical noise and residual managerial inefficiency (Lovell, 2000).

The relative efficiency of French entrepreneurs of the Second Empire

To demonstrate SFA and DEA in practice, Figure 4.3 is an empirical counterpart to Figure 4.1. For the businesses of selected French

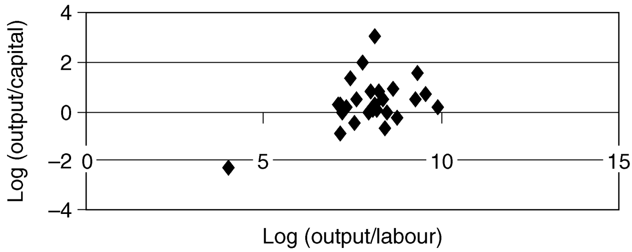

Figure 4.3 Productive efficiency of French entrepreneurs, 1866

entrepreneurs of the Second Empire in the 1866 census, the two axes plot output per unit of capital and output per employee. According to this display the two most efficient users of capital and labour, the most northerly and the most easterly points, are respectively Vrau and Kuhlmann. A long tail of apparently less efficient entrepreneurs stretches away behind them towards the origin. Reducing this dispersion by improving the mean entrepreneurial performance, perhaps by intensifying competitive pressures, would have raised national income without the need for any shift in the best-practice frontier.

Estimating the relationship with stochastic frontier regression, an exponential distribution of *u* behind the frontier fits best (Table 4.2). The production parameters are consistent with constant returns to scale assumed in Figures 4.1 and 4.3 (the sum of the coefficients on

Table 4.2 Stochastic production frontier for French entrepreneurs, 1866

Number of observations 26,		Log likelihood function	–30.0370		
	Exponential frontier model					
Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]	Mean of X
Primary Index Equation for Model					
Constant	4.7148	2.5943	1.817	.0692	
LOGLAB	.5587	.2260	2.472	.0134	6.5930
LOGK	.4781	.1283	3.726	.0002	14.2450
Variance parameters for compound error					
Theta	1.5915	.4986	3.192	.0014	
Sigma	.5099	.2129	2.395	.0166	

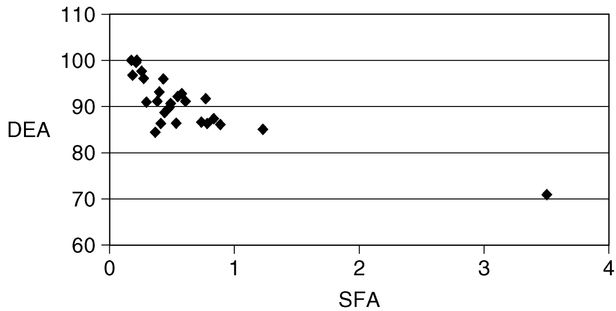

Figure 4.4 Association of DEA and SFA efficiency scores for French Second Empire entrepreneurs

log labour (LOGLAB = 0.5587) and capital (LOGK = 0.4781) are not significantly different from unity). The variance parameters of the compound error, theta for the efficiency term *u* and sigma for the stochastic error *v* are significantly different from zero and from each other. The expected value of the efficiency term is 1/1.59 = 0.63. If all units were fully efficient then the mean output would be 0.63 higher, increasing the intercept, or total factor productivity index for the industry from (4.71–0.63) to 4.71, or by 15 per cent.

An analogous exercise with data envelopment analysis yields similar best performers but some difference in intermediate rankings. The correlation between SFA and DEA scores is 0.79 (Figure 4.4 and Table 4.3).

Table 4.3 SFA and DEA scores for selected Second Empire French businessmen

	SFA effic (*u*)	DEA score
François Philibert Joseph Vrau	0.17465	100
Jacques Hartmann-Liebach	0.18402	96.77
Jean-Charles Besselièvre	0.21271	99.56
Charles Frederic Kuhlmann	0.21873	100
Henri Rondeaux	0.25626	97.67
....		
François Auguste Blanzy	0.83384	87.34
Gustave Goldenberg	0.8876	86.12
Floris Joseph Descat	1.2292	85.08
Alphonse Pierre Cardevac, Marquis	3.5035	70.91

Whereas the chemical manufacturer Kuhlmann is on the DEA frontier – as Figure 4.3 implies – the SFA analysis that introduces error terms ranks him fourth, around 25 per cent less efficient than Vrau, who in turn is some way behind the frontier (u is not zero). However they are very close together when the full range of u terms is considered. By far the worst performer in both the SFA and the DEA is Cardevac.[19]

The efficiency of entrepreneurial product strategies: motor cars in Britain, 1902

The frontier approach can be employed to assess the relative effectiveness of entrepreneurs' products as well as processes, especially when market share data are not available, and/or when consumers' responses are lagged. In a competitive market for differentiated goods such as cars, the price (P) will be higher if the goods supply more characteristics (Z) that some buyers want. The way attributes are combined and how much they cost depend upon the technology embodied in the car model. Those models employing superior technology will either supply more desired characteristics for the same price than rivals, or the same attributes as competitors but at a lower price. Either way, there will be a frontier of best-practice technology marked out by superior car models. Behind the frontier less successful car technologies will be spread at greater distances and the less effective are the models in supplying desirable characteristics for a given price. Equation (4.4), an example of the cost relationship (4.4), represents this process:

$$P = a + bZ + v + u \tag{4.4}$$

If u for any model is zero then the car is on the frontier.

Turning to particular characteristics, if fuel consumption mattered to buyers then they would offer lower prices for 'thirsty' vehicles, other things being equal. If steam cars were inconvenient in some way relative to internal combustion cars, then again, they would be sold at a discount.

The British market from 1896 was at first dominated by French models, but by 1902 domestic makes were selling well, and US steamers were also new entrants. New entrants should be close to the price/cost frontier, whereas buyer inertia, or switching costs, allows

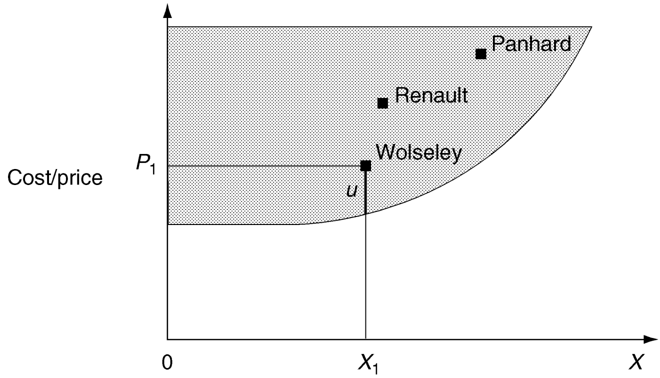

Figure 4.5 The efficiency frontier: RAC Trial, 1902

established products to be further away. Of the 43 cars competing in the 1902 RAC Trial for which data are available, eight were steamers (two French, Gardner-Serpollets, and six American, Whites and Locomobiles). Fourteen were French. The cheapest cars were the US Locomobile 5.5 hp two-cylinder steamers. The fuel consumption of steamers was invariably higher than that of the internal combustion engine cars. The most expensive vehicles were the 22 hp four-cylinder Daimlers and a 15 hp four-cylinder Panhard. The highest-scoring car was a 10 hp £600 four-cylinder Peugeot, followed by the Panhard; French cars took the top two places in the Trial. Figure 4.5 illustrates the technique and the positioning of three models.

In Table 4.3 three variables or model characteristics – horsepower, number of cylinders and fuel consumption per cwt – in a simple OLS regression explain 85 per cent of the variance in the log of price. Doubling the horsepower, other things being equal, was approximately worth a 40 per cent increase in price (frontier estimates equations 2 and 4 in Table 4.4), and doubling the number of cylinders warranted about a 60 per cent increase. Doubling fuel consumption per cwt laden weight reduced the price chargeable by one quarter. Steamers consumed twice as much fuel as internal combustion-powered cars. With an average price of £460 for the cars that completed the rally, a steamer would sell for £345 if it was in other respects

Table 4.4 OLS and frontier regressions of car prices in the RAC Trial, 1902

	1 OLS	2 OLS	3 Frontier, ½ normal	4 Frontier, exponential
Log HP	0.45	0.40	0.45	0.39
	[4.32]	[4.47]	[3.92]	[3.45]
Log CYL	0.59	0.62	0.58	0.62
	[6.31]	[6.71]	[6.31]	[7.02]
Log Fuel/cwt	–0.33	–0.24	–0.33	–0.25
	[–2.76]	[–2.54]	[–2.08]	[–2.42]
Log Steam	0.12	–	0.12	
	[0.15]		[0.81]	
R^2	0.85	0.85	–	–
Log-Likelihood	14.66	14.17	14.69	14.14
Breusch-Pagan χ^2	2.43(4)	2.30 (3)	–	–
Variance Components:				
$\sigma^2(v)$	–	–	0.022	0.029
$\sigma^2\ (u)$	–	–	0.020	0.028

Note: t-ratios in parentheses of OLS coefficients are calculated from White robust standard errors.

comparable to an average internal combustion car, a difference of £115 or $560. Otherwise steamers did not sell at a discount; the coefficient on the steamer dummy variable is insignificant (equations 1 and 3). When the fuel consumption variable is dropped, the steamer dummy remains statistically insignificant (equation not reported). The conclusion must be that, within the limits of accuracy of this analysis, the British market in 1902 found entrepreneurs' choices of steam and internal combustion technologies equally satisfactory, apart from their different fuel costs.

Assuming that the parameters of equation 4 in Table 4.4 determined the frontier, the 20hp (British) Wolseley was the most efficient, followed closely by the (British) Brooke and two (US) Locomobiles. Most inefficient were two French cars – one of the cheapest, the single-cylinder Renault, and one of the most expensive, the £1150 15hp Panhard. This appears to show that by 1902 British motor entrepreneurs were recovering from the handicap of the 'Red Flag' legislation,[20] and at least in the home market were beginning to challenge the supremacy of the French industry.

Conclusion

Measurement can greatly advance the historical study of entrepreneurship. But data availability and the problem in hand will determine the line of investigation. No single idea of an entrepreneur is likely to be adequate for all questions. Even more certain is that no one measurement approach will prove universally satisfactory.

A standard framework involves the choice of self-employment versus employment and unemployment. In itself this does not exclusively identify entrepreneurs as generally accepted because of the requirement for a link with effective innovation. Hence the need for supplementary measures such as profit, income or wealth in a competitive market economy. For historical entrepreneurship, wealth at death is an obvious measure but the interpretation of this variable in different contexts must be undertaken with care. Among other reasons this is because consumption must be subtracted from income or retained profits before an entrepreneur's wealth at death is a reasonable measure of cumulated lifetime profits, and consumption may vary systematically between different groups and locations.

Credit availability is often said to limit either the opportunities or the supply of entrepreneurs. Consideration of models of lending and borrowing with imperfect information together with some empirical evidence suggests that the contentions are hard to demonstrate, beyond the truism that if resources were less scarce there could be more of everything, including entrepreneurship. The reappraisal of the significance of inheritance for the over- or under-lending hypotheses is a case in point; both positions predict that inheritance will be correlated with business start-ups and so the observed association is consistent with both, and no doubt many other, hypotheses.

The influence of culture upon entrepreneurship has provided an opportunity for many impression-based generalizations upon which even cross-tabulations can improve. For a variety of aspects of culture are readily measurable, even without the questionnaire approach that is available for the study of contemporary entrepreneurs. Correlation between attributes such as class and religion or religion and education can, however, limit the reliability of inferences drawn from cross-tabulations, and multivariate analysis is therefore generally preferable. Entrepreneurship impacts upon national culture through social mobility to join, dilute and challenge traditional elites. The extent to which business, rather than other channels or influences, brought members of different social classes into the elite can be fruitfully studied with regression-type categorical dependent variable models (such as multinomial logit).

Measurable models of entrepreneurship can set out more objective standards and tests of performance. The choice of technique approach, with efficiency frontiers established by comparison with other players, are particularly suitable. Data envelopment analysis and especially stochastic frontier analysis are so far underutilized in the historical study of entrepreneurs. They provide a convenient way of summarizing and comparing the dispersion of entrepreneurial efficiency in different industries or countries. In turn this information allows judgements about the causes and effects of entrepreneurship with rather more precision than hitherto. If the full advantage of these approaches is to be obtained a considerable number of studies in different places and times must be undertaken as standards of comparison.

Notes

1. Even the first level of measurement, with a nominal scale, requires distinguishing entrepreneurs from others, so that, for instance, they can be counted. A higher level of measurement, such as with an ordinal scale, is necessary to be able to answer 'How well do entrepreneurs do what they do?', to assess whether this entrepreneur was more successful than that, but less successful than another. When an entrepreneur is said to have died twice as wealthy as a second, a still more demanding interval measurement scale is employed.
2. The greater price inelasticity of demand for new products suggests that their consumers' surplus is greater than that of mature products. If so the contribution to well-being from the introduction of new relative to established goods and services would be underestimated. Measuring the characteristics of products with hedonic price indices could solve the problem. If a new product has more desired attributes for a given price than existing products, it is superior. But the new product will only register as a productivity improvement when the output of established firms, as well as product innovators, are measured in characteristics.
3. Or sometimes the hijacking by large corporations of opportunities identified by individual entrepreneurs, another form of monopoly power associated with profit. For a comparative study of the causes of intrapreneurship in the contemporary USA and South Africa see Morris *et al.* (2000).
4. Only when the CEO moves between companies with different market positioning and in different phases of the economic cycle is there some chance of identifying a genuine 'intrapreneur' effect. Otherwise an apparent

impact may be merely good luck. The theory of managerial labour markets (Fama, 1980) sets out the conditions for market identification of managerial impact. There is evidence in recent years of a significant and positive correlation between directors' pay, company performance and size in Britain (Conyon, 1998). There is also a negative and significant association of CEO turnover with prior shareholder returns. This is consistent with the view that CEOs are disciplined by the threat of dismissal and their performance when successful is also rewarded. However, there is a good deal of randomness in the reward process. CEOs may be remunerated for being at the helm at the right time and punished for factors entirely beyond their control.

5. Although of course it is possible simply to describe the social background without attributing causation, for example Lévy-Leboyer (1979), Slaven and Kim (1992) and Jeremy (1984) respectively for France, Scotland and England. Cassis (1997) compares characteristics of business leaders of the top 100 companies in Britain, France and Germany at selected dates. Burns (1999) compares contemporary entrepreneurs' characteristics across Europe.
6. Jobert and Moss (1990) supply a selection of papers on Britain and France which can suggest some of the impact of these alternative environments.
7. Bartelsman *et al.*'s (2003) OECD study shows US firms have lower 'infant mortality' than the UK; indeed UK mortality is higher than any other country in the study except Finland.
8. London wealth (and therefore presumably finance and commerce) declined in relative importance between 1809 and 1899, but remained dominant.
9. Wholly unsecured loans were particularly important in the 1880s and still represented over one quarter of industrial loans in the years before the First World War.
10. In any case, the majority of start-ups were not registered companies. These were typically quite large and might often have had a business existence prior to registration.
11. General credit rate series, as a contributor to the factor price of capital, are unavailable and inappropriate, but the exchange rate is a measure of financial confidence. For the small open Greek economy, the interest parity condition, that interest rate differentials between monetary areas will reflect expected exchange rate movements, supports this proxy. An unanticipated demand for financing at home by the government pushing up interest rates and prices will cause a compensating expected depreciation of the drachma exchange rate.
12. Assuming the life-cycle theory of consumption does not hold and that instead individuals accumulate wealth as if they and their families or posterity are an immortal entity.
13. An attempt to calculate an internal rate of return (IRR) from inheritance and wealth at death presupposes or imposes a particular value on the inheritance coefficient that implicitly averages these effects (Nicholas, 1999a). In so far as the quadratic relation between inheritance and start-ups

found by Burke *et al.* (2000) extends to entrepreneurial performance, the assumed linear relation of the IRR calculation could be misleading.

14. Different weighting schemes might in some cases change the values of this aggregated variable.
15. Let E signify elite membership and Zi originating from class i, then Temin proposes considering $Pr(Zi \mid E)$, whereas the conventional social mobility focus would be $Pr(E \mid Zi)$ (which is extremely small). The relation between these, given by the inverse probability rule, is $Pr(E \mid Zi) = [Pr(Zi \mid E). Pr(E)]/Pr(Zi)$. If we know the chances of being in the elite ($Pr(E)$) and the chances of originating in class i ($Pr(Zi)$) then we can calculate the probability of being in the elite having originated in class i ($Pr(E \mid Zi)$) from the chances of originating in class i, given that the person is in the elite ($Pr(Zi \mid E)$).
16. The function, f, that links the probability of being in one category rather than another to explanatory variables, is usually assumed to be cumulative logistic or normal.
17. DEA originated with Michael Farrell's (1957) paper on 'The Measurement of Productive Efficiency' (Charnes *et al.*, 1978).
18. This exposition follows conventional treatments that generally assume very inefficient units will be few. Competitive forces tend to eliminate them, while ensuring that most units cluster close to the frontier.
19. Cardevac's inefficiency term is 17 times as great as Kuhlmann's but the SFA efficiency terms are not normalized like the DEA scores to take into account units of measurement.
20. The legislation, repealed in 1896, required that a person with a red flag walk in front of any self-propelled vehicle driven on the public roads.

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Part III

Thematic Approaches

5
Innovation

François Caron

Analysing the process of innovation can no longer be accomplished by constructing the innovating entrepreneur *à la* Schumpeter or by singing the virtues of the great Chandlerian organization, now the market's ideal substitute. A rich economic and historical literature has uncovered the complexity of the concept of innovation itself and of the processes characterizing its emergence and spread. Three statements about the role of innovation in entrepreneurship may be put forward:

1. An enterprise which ceases from innovating is condemned to death.
2. A society in which there are no or very few creations of new firms is condemned to decline.
3. Inside the firm, innovation is a global process, encompassing both management and engineering.

For the above reasons the analysis of the innovation process inside the firm must be founded on a clear definition of its nature.

The history of the influx of innovation, dating back to the end of the eighteenth century, highlights three successive phases of grouped and interdependent innovations. Each of these phases forms an equal number of technical systems, which can be categorized, out of convenience, as industrial revolutions. The first phase was dominated by coal technology, the piston steam engine and inorganic chemistry. The second phase was dominated by electricity, organic chemistry and the internal combustion engine, and the third by electronics, biotechnologies and composite materials. The passing from one industrial revolution to another may be described as the result of dynamic innovation in the emergence of new technologies and the diffusion of the latter throughout the whole system.

The mechanisms and forms of innovation changed from one industrial revolution to the other, although one may still propose a general interpretation of this phenomenon. It is easy, in fact, to pinpoint the following permanent features, which make the innovating process the central element of the dynamics of civilizations and enterprises:

Innovation always marks a break in productive practices and consumer habits, but is not limited to perfecting new products or new processes. It must be commercially successful in order to be effective. It entails the modification of modes of production, as well as of organizational patterns and cultural practices, all of which constitute 'an irreversible commitment', according to Divry *etal*. (1999). So each innovation system follows its specific path.

We will first try to understand the initial sources of the innovating process in the firm, by referring to the concept of 'invention demand'. Then, we will analyse the process of accumulating knowledge and competences. We will examine how it determines the strategic choices and the technological trajectories of the firm, and how it defines the various elements of innovative management. Finally, we will try to establish which the innovating companies are: big firms or newcomers?

The demand for invention and the 'awareness of needs'

Regarding the sources of innovation, my first hypothesis is that the 'invention demand' concept is valid. This validity has been contested by several authors, such as Mowery and Rosenberg (1989). A recent study of patent records registered in the British cotton sector between 1760 and 1850 showed that one of the most worn-out myths of economic history, the 'challenge and response model', was erroneous. (Griffiths *etal*., 1998). However, to my mind, the rejection of this model is not justifiable. One must subscribe to Schröter and Travis's assertion that in order to innovate, 'the entrepreneur has to visualise in his mind's eye the potential future demand, and to act according to his beliefs and expectations' (Schröter and Travis, 1998).

In the same vein, Divry *et al.* correctly write that 'the innovating process . . . largely corresponds, in the firm, to an activity of resolving and defining problems' (1999) and Travis rightly states 'the awareness of changing needs' (1998, 196) to explain chemical innovations in the interwar period. It is possible to use the concept of 'prospective fields' to describe this process. These fields of research are defined from the knowledge of these needs. However, an innovative project can also proceed from an awareness of society's aspirations and expectations. It is then a matter of answering to social demand.

In order to perceive the relation between the awareness of a need and the innovation itself, one must reconstruct the approach of innovators, entrepreneurs, engineers and technicians by using their written works, articles, reports and written proofs of patent requests. This method has borne plenty of fruit. In the area of production processes, innovation was first carried by the desire to find a solution to incidents and accidents which are part of daily life in a factory. This is why a concept of dysfunction can be adopted, in association with the 'cost reducing' innovation concept. It is rather close to the 'reverse salient' and 'load factor' concepts favoured by Hughes (1983). This process will be illustrated by three cases.

The first French aluminium factory using the electrolysis process opened in 1888. The basics of the process were perfected between 1888 and 1894, thanks to a series of innovations brought in by Héroult and Kiliani. Between 1895 and the 1920s, this technique made very little development. The operation of factories remained very flawed. Accidents at work, often fatal, were numerous and incidents occurred daily. In the 1920s, this permanent crisis situation became more and more difficult to handle, because the rapid expansion of air navigation and some other uses extended the size of the market for aluminium. Moreover, more and more demanding customers exerted a great deal of pressure for getting higher quality products. Unfortunate incidents grew in number. Thus, the only way out was to search for major innovations. For example, the tank operation problem was resolved by integrating improvements into the traditional system and drastically increasing productivity. These improvements were the result of a process of trial and error. A new era was beginning in the history of electrolysis: this new process was the starting point of more and more outstanding performances. This case shows both the role of customer pressure on the supplier in the orientation of innovation and the role of the learning-by-doing process in its achievement.

The rationalization of space in the factory was a major stake of the organization of enterprise in the engineering industry in the nineteenth century. The difficulty to carry energy far away and to divide it made it impossible to get an effective organization of work. The handling of heavy castings was another obstacle. That is why the transmission of motive power was a major requirement in the field of organization of the firm. The engineering industry began to use electric motors in the 1890s. The arguments used at the time by AEG to sell its equipment give a good idea of the seriousness of dysfunctions, which electrical innovations gave appropriate answers to. Apart from energy saving, fluctuating between 58 and 62 per cent, an AEG engineer noted 'a large removal of bulky transmission shafts; the simplification of transmission units; the independence of machine tools; the ease in assembly; the possibility of using the power current at a distance; the considerable improvement of safety in engineering shops' (Hartman, 1994, 414). The technological innovation made possible an organizational revolution.

Similar analyses can be applied to the emergence of the innovations in the field of corporate information management. Beniger has shown that large business enterprises experienced 'a crisis control' in office technology in the 1880s.The manual handling system became unable to control the 'complexity, scope and speed of information processing'. (Beniger, 1986, 390) In the field of calculating devices, hundreds of innovations emerged between 1890 and 1914 in the USA and Europe. Basic applications were understood and machines applied to them in accounting, engineering and science and inside manufacturing and offices. The punch card tabulation was the first step towards the development of data processors and computers (Cortada, 1993). The managerial revolution described by Chandler would not have been possible without this flow of technological innovations. It is clear in these three cases that the adoption of technological innovation made an organizational revolution possible.

The technical system dysfunctions are not alone in influencing the entrepreneurial innovators' choices, but are joined by market expectations, as seen in the aluminium example. The two following examples are also conclusive. Many authors emphasized the role of product innovation in the rapid development of the first industrial revolution. Maxine Berg described 'a world of new commodities revealed in the patents records and the trade catalogues' (1998). A new consumer culture gradually spread in modern England and came to full bloom in the late eighteenth century. These multiplied products were created and manufactured either by craftsmen and home workers or by industrial entrepreneurs who were aware of these markets' potential for development.

The promotion of electric light in the nineteenth century is another good illustration of this entrepreneurial model. Edison, Siemens and Swan had a perfect knowledge and consciousness of the expectations and needs of society in the field of lighting. The 'need for light' grew strongly in nineteenth-century society. In the streets, it was meant to fight immorality and insecurity, and in the workrooms, to fight laziness. In department stores, cafés, theatres and ballrooms, it was meant to arouse the desire to consume and to entertain oneself. In the privacy of homes, it increased social interaction time. Only electric light was fully able to meet all these expectations. Its main rival, gas lighting, gradually declined, defeated by the improvements of electrical technology. International electricity exhibitions were launched in Paris in 1881.They were aimed by enterprises of electro-technical industry at promoting simultaneously the uses of electricity and technological development. These exhibitions can also be considered as promotional campaigns of marketing.

Therefore, it does not seem possible to contest the capacity of entrepreneurs to be aware of needs in the technical system and in society in orienting innovation. The model of a first innovation being influenced by market expectations is compatible with a model in which innovations are the products of opportunities given by advances in scientific knowledge. This model develops along a form of logic akin to a branch, the logic of 'arborescence'.

Innovations, accumulation of knowledge and managerial competences

The nature of competences and necessary knowledge of the act of innovation is constantly being renewed by the transformation of the technical system and organizational models. The opposition of two forms of competence – one being of scientific origin and the other resulting from a learning process of a more technical nature – has dominated writing about the sources of innovation for a long time. Is this opposition justifiable?

First, I note that far from being exclusively a process of 'creative destruction', innovation, on the contrary, is a result of a continuously growing experience. For, as Rosenberg points out: 'the introduction of a technological innovation . . . is a continuous activity'. The validity of these words will be illustrated in three ways.

Until the mid-twentieth century, in a number of sectors, the role of incremental innovations in improving traditional and technical skills remained dominant: 'A large portion of the growth in productivity resulting from innovations assumes the form of a slow and often almost invisible accretion of individually small improvements', wrote Rosenberg in 1986. John Harris (1976) showed that transformations in the iron and steel industries and the invention of steam engines in the eighteenth century were the result of a long process of learning to utilize coal that had started as early as the fifteenth century; referring to the same period of time, Berg speaks of 'a pool of interchangeable skilled labour: in the metal trades, workers in gold and silver now intermeshed with workers in . . . steel, glasscutters and wire – and tool makers' (1998, 153). She sees it as one of the major sources of innovation. Divall and Johnson's comment about British chemistry likewise applies to a great number of sectors: 'until the last quarter of the nineteenth century technical innovation relied more upon empirical developments than organized science research by trained investigators' (1998, 206). During the second Industrial revolution, technologies also largely depended on existing skills for their development. New products and new processes were grafted to and transformed traditional trades. In the first phase of their evolution, the automobile and air navigation industries created a symbiosis between workers' skills and technical and scientific knowledge.

But, at the same time, in large firms, the process of arborescence became more and more important. Since the last quarter of the nineteenth century, the large firms were marked by the ability of laboratories and research policies to implement fundamental science, and to strengthen their links with the milieu of scientists. This 'institutionalization' of in-house corporate research and its openness towards fundamental research did not change the nature of the relationship between scientific knowledge and innovation. Research has showed that even innovations whose scientific content seemed the heaviest could not have been completed without the implementation of knowledge and technical skill, regardless of whether the latter were formalized or tacit. From this point of view, the historiography of research in Dupont de Nemours between the two wars is particularly illustrative. In 1927, the Central Chemical department launched a vast programme of fundamental research on macromolecules. In the 1930s, there were several spectacular successes, among which was the perfection of neoprene in 1930 and nylon in 1934. This success boosted a research strategy witch can be defined as an 'exploration driven research strategy', as it aimed to find 'new nylons' through fundamental research. Although this model was not questioned before the 1970s, many written works contested its historical validity. Hounshell and Smith (1989) showed that in order for it to become a marketable product, it was necessary to implement more expert skills into the ammoniac and rayon departments, and not only the Central research department. Pap Ndiaye (2001) showed that nylon manufacturing had required the use of chemical engineering technologies, mastered by the engineering department that built the Seaford factory, completed in 1938. On the whole, concludes Ndiaye, nylon development cannot be reduced to a scientific laboratory invention, as it combines product innovation with procedural innovations. But as Jeffrey Meikle (1995) showed, nylon was also a mass marketing success, based on the advertisement of stockings.

Third, it must be underlined that for a long time the ability to market was the main competence required of an innovating entrepreneur. Initially, industry was only an extension of commercial activity. Knowing the consumers' needs and knowing the markets remain the necessary condition for a successful industrial innovation. The three German chemical firms (BASF, Bayer and Hoechst) which founded the synthetic dyeing industry were not content with simply mastering scientific knowledge and the technical processes necessary to produce these products. They were also able to take advantage of their perfect knowledge of the uses of these products and their markets. Between 1880 and 1914, the promoters of electricity, automobiles and the perfume industry were able to 'invent customers' (Caron, 1987) by developing marketing strategies adapted to each of these products, while technologies remained uncertain. Michelin's creation of the 'Michelin Man' (*Bibendum*) in 1898 and the Green Guide in 1900 serve as an illustration.

A final activity of the firm, financial management, requires a specific competence. Financial institutions undergo changes in parallel with economic and technical development. The entrepreneur must imagine new practices to meet the requirements for developing new technologies, new markets or new organizational methods. The development of electricity in twentieth-century Europe was made possible by the emergence of new forms of finding and using funds. In France, the electrical companies, founded during and after the 1890s, were obliged to find a great deal of external funds by issuing either equity shares or debt. Their needs grew fast. The consequence was a rapid development of the capital market and a radical change in its relations with enterprises. Big concerns were created by gathering electrical companies in the whole country. The second most important of these concerns, the 'Durand group', adopted a financial strategy that did not conform with the preferences of the Parisian financial circles, which appreciated high levels of internal financing. Durand succeeded in founding a network of subsidiary companies, which were strictly controlled and were capable of calling up great amounts of external capital, while paying high dividends to shareholders (Vuillermot, 1997). Another innovation was the founding and development of financial holdings (*Sociétés d'investissement*), which more often specialized in the financing of big collective investment programmes of public works. In the same line, Peter Hertner (1986) has pointed out the importance of the role played by the *Unternehmensgeschäft* through which 'the large German trusts created their own market by founding local and regional power, tramway and lighting companies', and has described the management of these financial holdings in an international context. Thus, financial innov-ation forms an essential part of the entrepreneurship.

In the long term, innovation is subjected to a learning process founded on the internal accumulation of knowledge and know-how. Some authors argued that established firms, and particularly big ones, suffer from considerable handicaps in terms of the process of innovating, because they can sometimes stick to an accumulated technical culture that has become obsolete. This fact can be illustrated by numerous examples. The failure of the French producer of tabulating machines, the '*Société des Machines Bull*', to overcome

IBM in the field of computers can be partly explained by the influence of a technical and marketing culture originating from its experience of the tabulating system.

In fact, the established enterprises have goods assets to manage the 'knowledge economies'. The accumulation of knowledge provides the means to bring positive answers to problems, and to transfer it from one sector to another. In order to develop these practices and products, big firms can make large funds available for research. They can also lean on know-how and knowledge from other sectors. In these terms, innovation has a strong specificity and imposes a specific 'technological trajectory' to the firm.

Abundant literature has been dedicated to analysing the knowledge accumulation process. Two authors are renowned for their works in this field. Pavitt elaborated a typology of trajectories and firms in a seminal article in which he wrote: 'Since patterns of innovation are cumulative, the technological trajectories of innovative firms will largely be determined by what has been done in the past – in other words, by its principal activities' (1984). He distinguishes three categories of trajectories and firms: the supplier-dominated category, the intensive production category and the science-based category. John Cantwell analysed the evolution of firms' international specializations by using patent record registrations in the United States. One of his most constant conclusions is that changes in specializations are made only on a very gradual basis, and that long periods of stability can be observed in the way they are distributed.

Paul David and, especially, W.B. Arthur (1988) insisted on the process of irreversibility. The trajectories' progression is described as a 'path dependence' process. This progression engenders 'adopting increasing returns' that create an important competitive advantage, if not for the first firm ready to invest, at least for the one that can ensure innovation development in the most precocious and fastest way. Most often, this firm is then able to determine standards.

Consequently, the competitiveness firms depends on the ability of the entrepreneur in quickly developing new technology applications and uses, and in controlling the implementation of knowledge and know-how associated with it. Institutionalized research policies aim at establishing such a control by maintaining a constant lead. One example alone will prove that point: in 1900, the General Electric management board justified the creation of a laboratory in the hope of 'being able to discover a great number of profitable activity fields' (quoted in Caron, 1997, 64). Effectively, the laboratory was quickly directed towards research in the area of fundamental science so as to master the whole field of electricity applications. Intra-muros research thus appears above all as a means of conquering, maintaining or strengthening a dominant situation, based on the command of initial knowledge.

Since the 1880s, research policies have been systematically reinforced by a double policy of taking out patents for research results and defining the standards that control the system. In fact, when several trajectories are in competition, the involved players might have to negotiate convergent solutions. This process is fostered by worldwide scientific organizations that have been created in numerous sectors since the late nineteenth century, by cooperative research development and by a possible governmental regulation. But standardization of procedures and norms can also result from the victory of one of the competitors'. These strategies have been completed by the implementation of marketing policies that are increasingly developed throughout the world, which gives innovation its global character. The precocious constitution of international oligopolies in emerging industries such as chemistry and electricity between 1890 and 1914, and their strengthening in between the wars and in postwar years can be largely explained by the implementation of such strategies.

Newcomers and big enterprises

Mansfield, among others in the 1970s (Mansfield *et al.*, 1977), defended the idea that radical innovations, and particularly product innovation, were, for the most part, introduced by small firms, while large ones spent more time developing process innovations, most often incremental in nature. This idea still dominates the works written on that topic. A recent French study dealing with the 'thématique des compétences' concluded that 'small entrepreneurial units are necessary for starting radical innovations, not only because, for that, an entrepreneur needs to have the audacity to risk, but also because it is necessary to create an environment where innovators are freed from obsolete constraints or constraints becoming obsolete' (de Meyer *et al.*, 1999, 252). Such statements need to be strongly revised.

The newcomers

The advantages of innovating entrepreneurs over big firms is described by Freeman as follows: 'It seems apparent that one of the few advantages held by the entrepreneur is speed. It is simply quicker to start a new firm and move into a new technological or market niche than it is to change the course of an existing (large) firm into that same niche' (in Cortada, 1993, 50). The new players' driving role in promoting these new technologies is abundantly confirmed by historical experience. Three arguments can be put forward.

Research on start-ups (Jobert and Moss, 1990) has highlighted the good correlation between the innovation movement and the nineteenth-century start-ups. At first, innovative businesses were created on the fringes of the system. They either implemented technologies or proposed products that were radically different from existing techniques and products. In a second phase, new firms ensured these innovations' diffusion while improving them. In a third phase, the whole productive system was involved in the creation process, thanks to the generalization of the use of new products and new processes in the whole system and thanks to externalization effects on other sectors.

The emergence of new sectors in the second industrial revolution mostly resulted from start-ups. These innovative firms can be characterized in three ways: In France, the majority of founders come from a business bourgeoisie milieu, capable of seizing any kind of opportunity. A large minority of founders is composed of craftsmen and skilled workers. These founders' competences in electricity are both of a scientific and technical nature, while mostly scientific in air navigation, and mostly technical in the automobile industry.

Their success is not individual, but collective. They were able to gather teams together with various competences, be they scientific, technical, commercial or legal. These newborn firms integrated business networks that could bring them necessary information about the evolution of knowledge and products, about clients and contracts necessary in creating a market, and about necessary funding for initial capital formation and development. The founders were integrated in social circles composed of relatives, friends, and also potential clients and suppliers, bankers and entrepreneurs practising development strategies as well as diversification. The venture capital market, even if it was less institutionalized than today, developed broadly in Europe and the United States in the nineteenth century.

The universe of innovative firms' creators is highly competitive. Risk-taking is important, even though entry barriers are not always very high. It was a very evanescent world, where a few leaders quickly emerged who were able to tap the innovation movement by mastering markets and controlling knowledge and standards.

The scenario of emerging technologies in the third industrial revolution, between 1950 and 1980, was basically identical. Dosi (1984, 148) showed that in the microprocessors sector in the United States, in the 1950s and 1960s, big firms mostly innovated in an incremental way, through experience, while innovation was mostly in small firms 'with an entrepreneurial dynamics'. But one of the characteristic features of the period was the important role played by entrepreneurs coming from large firms or from research laboratories, be they engineers, commercial executives or researchers. In the nineteenth century, an entrepreneur could acquire competences in a firm before leaving it to later found his own business. This phenomenon expanded significantly in the second part of the twentieth century, especially in the field of new technologies, information, electronics and genetics. Most of the founders studied by Dosi came from large firms' laboratories, especially from the Bell laboratories. Some of these new firms experienced rapid growth, while others failed, disappeared or were absorbed into others. In France, Philippe Mustar (1994) examined a sample of 100 firms in chemistry, biotechnologies, electronics and computer science, created by researchers between 1984 and 1987, and he followed them between 1988 and 1993. Within this sample, most start-ups aimed to valorize the value of their research results by continuing research until a product or a process was marketed, such as a software programme, for example. Founders came from research laboratories localized in universities, public research organizations or large industrial groups.

Today, big firms and innovative small and average firms are united by a strong solidarity, based either on subcontracting or on some type of cooperation in the field of research. Many of these young firms were created thanks to the help of bigger firms, the latter hoping to later recoup their outlay by acquiring the innovative firms if successful. Big firms thus limit their risks. The distribution of roles between small innovative firms and large firms is somehow organized and institutionalized. In fact, cooperation between big firms and young innovative firms is only one particular case among those played by social networks in the innovation process.

Large firms in search of an innovative organization

Some authors say that big firms can be the victims of organizational rigidity blocking the innovation process. In fact, good entrepreneurship enables favourable conditions for innovation within big firms, even if they were created a very long time ago.

The patterns of firm management and research administration that dominated in the 1960s, based on power hierarchy and the compartmentalization of functions, were questioned in the 1970s. To meet this challenge some big firm adopted new strategies and organizations. Four trends are getting stronger:

- Research was reorganized to the benefit of the industrial department laboratories and at the expense of the central laboratories, which were then destined to bring more active support to the development of products and processes without giving up fundamental research. In fact, at the same time, this type of research has become the source of innovation more and more necessary for operating factories and conceiving new products. In addition, competences implemented in research programmes were diversified, whether they applied to the scientific field or to the marketing field.
- Meanwhile, after having chosen a diversification strategy for their sphere of activity in the 1960s, firms tended to focus on their best trades and on fast-expanding technical fields, for example what Du Pont did with synthetic fibres and the life sciences. But, as Mark Casson notices, 'The fact that the line of business is becoming increasingly focused is perfectly compatible with the fact that research competence is becoming more broadly based.' (1991, 254)
- The general tendency is to favour and even to organize internal cooperation between services. Managing innovation through projects has been a major tool in innovation management, which has been seeking to restore the conditions of entrepreneurial creativity in big firms.

- Cooperation between firms and external actors/*players*/*forces* to the firms is even more essential. These actors/*players* are customers and suppliers, sub-contractors, competitors, and research centres. Von Hippel (1988) remarkably illustrated the importance of conversing with customers and Gemünden has shown that 'the firms' innovation ability was positively linked to the intensity of external connections with customers, with research organizations and with other firms' (quoted in Romelaer, 1999). This factor is more important than R&D intensity and 'informal relations are more important than contracts'. All specialists in management can accept these conclusions. The development of either technological or scientific network research has been one of the major features of the evolution of research strategy in the 1980s and the 1990s. (Combs *et al.*, 1996)

Even though it is always described as a break/*rupture*, innovation results from a continuous process. Innovations do belong to technological and organizational trajectories, which develop from the specific knowledge existing techniques and practices, of their limits and dysfunctions, and also from the sometimes visionary knowledge of society's expectations. Starting from this definition, we can conclude from the point of view of entrepreneurship that:

1. The entrepreneur must be able to mobilize and combine multiple competences. Scientific and technical knowledge, coming either from within firm, firms or public infrastructure, must be combined with empirical know-how resulting from experience, which has not been formalized. Creativity in the commercial promotion field and in the marketing and financial field and the ability to become integrated into strongly united social networks are both necessary complements to the success of the innovating processes. Innovation then appears as both a cumulative and collective process, issued from a good perception of changing needs and from shared experience. This is how firms build a capital of knowledge that constitutes their true identity.
2. Historically, the role of new firms has been decisive for promoting major innovations, especially product innovations. This phenomenon can be perceived in the second as well as in the third industrial revolution. Yet large firms developed strategic research

that enable them to be competitive by being able to seize (right in time) the opportunities presented by technology or by the market at strategic moments, so as to promote innovations or to control their development thanks to strategies based on patent record registration and standards definition.

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6
Venture Capital and Enterprise

Richard Coopey

Investment: who are the entrepreneurs?

Entrepreneurship usually implies the ability of individuals or key groups to found, run, or expand an enterprise in a successful fashion. More often than not this term is seen as synonymous with a heightened sense of innovation and risk-taking. All enterprises need capital investment, either in their initial stages, or through subsequent growth phases. A significant proportion of this investment *may* need to come from outside the enterprise. The role of external investors, whether individuals or institutions, therefore frequently forms one of the vital contextual factors enabling entrepreneurship to thrive. Viewed from another perspective, however, the action of investors or investing institutions can itself be understood as entrepreneurial. Individuals or banks, in seeking out or in making decisions over investments or investment strategies, may fulfil many of the criteria associated with the entrepreneurial firm. Entrepreneurship, therefore, is woven into the fabric of the capital investment process, both internally within the firm, through external relationships the firm may have with providers of funds, and within funding individuals or institutions themselves. This process and the relationships which develop vary considerably in their origins and effectiveness due to particular historical contexts.

This chapter will examine one such context, in which, on the face of things, a new wave of entrepreneurial investment banking emerged in Britain and the USA. The venture capital sector which developed in both countries, but at different times, was identified very closely with a particular type of innovative firm in what came to be defined as the 'high technology' sector, a sector deemed to contain a high proportion of entrepreneurial activity. Often spatially located close to the innovative firm, venture capital was seen to form an almost symbiotic partnership with new, dynamic firms and entrepreneurship was integral to the many aspects of the close relationship which developed. One of the characteristics of venture capital investment was the holding of equity, for example, which put the investor in direct ownership, if not management, of the enterprise, along with the innovator.

In addition to considering this dual level of 'relational' entrepreneurship between the enterprise and the investor, we must also consider a wider range of further entrepreneurial perspectives which might be usefully applied to venture capital in its own right. Venture capital itself can be viewed as highly innovative in the ways in which it seeks, assesses and deals with risk and the ways in which it shapes investment and control to enhance the prospect of the enterprise becoming successful. This is only part of the story, however, since venture capital is best viewed as Janus-faced. On the one hand the venture capitalist seeks *investments* and then strives to enhance the success of those investments. On the other hand venture capitalists seek *investors*, suppliers of funds which they can then channel towards innovative firms. This process of raising capital itself, certainly when compared to 'ordinary' banking, should be viewed as a particularly heightened form of entrepreneurship.

Venture capital came to the fore during a period of renewed political focus on the entrepreneur as the keystone in a revitalized society and economy, particularly in Britain in the 1980s. This chapter will examine the relationships outlined above in terms of the stated hopes and aspirations for this new investment sector in Britain and the USA, but will also explore the contrasts between the historical reality and the theoretical ideal.

The origins of entrepreneurship and investment

The emergence of the venture capital sector in both Britain and the USA was greeted as a new dawn for investment, or perhaps in some way a reversion to a pioneering or golden age. In essence it promised to restore a connection between the bank and the enterprise which had been progressively eroded in both countries. In obtaining investment funds in the nineteenth century, for example, an enterprise usually looked to local, personal funding provision. As Collins points out, the majority of manufacturing concerns in Britain during this period raised capital either through profits or through family or connections (Collins, 1991, 34). This personal connection could come through these direct, often familial, relationships, but close connection could also be a feature of more formal bank relationships. Small firms, or entrepreneurs with an innovative idea, did on occasion look to local banks for funding. More often than not these banks, or rather the managers within them, or those associated with decision-making, were at the centre of a web of commercial and social linkages. Any information asymmetries could be significantly reduced by the intimate or tacit knowledge of a range of pertinent factors. These encompassed local market knowledge and probably extended to some knowledge of the product or processes involved in production. They also extended to knowledge of the entrepreneur seeking funds – past business success or failure, local social and business connections and so on. Thus a range of commercial and social factors could be brought to bear in assessing risk, by managers who were themselves astute and experienced in making investment decisions. Security in exchange for investment was, of course, an important factor, nevertheless an accurate assessment of risk could be used to offset this necessity.

Bank support for local or regional industry in the nineteenth century could be seen as limited to a supportive, enabling role, as in the provision of working capital, for example. Certainly this was the case in parts of the early nineteenth-century British textile industry, as Caunce (2003) has shown. Newton has also shown, however, that banks' directors were more closely connected to the innovative and speculative aspect of investment:

> Directors of a typical pre-1860 joint-stock bank – relatively small and with few branches – were often themselves also businessmen, involved in local industries and commerce and were, therefore, part of the fabric of immediate business networks. They were able to utilise their personal knowledge and participation in such business milieus to assess borrowing customers. (Newton, 2000, 181)

Newton convincingly demonstrates that trust and reputation, reinforced and monitored through a range of local connections and experience, were at the heart of a localized banking system: 'Regarding the appraisal of clients, English and Welsh bank records give the impression that reputation was paramount. Their dominant language is that of customer "soundness", "safety" and "reliability" – traits of virtue' (Newton, 2000, 187). A similar picture emerges in the USA, where banks were linked very strongly to local business communities. This level of connectedness could have its problems, however, as demonstrated in the case of some nineteenth-century US banks. As Lamoureaux (1991) has shown, if the local 'network' is limited to the bank and its circle of directors, the temptation to extend credit among those directors can lead to reckless and occasionally disastrous investment patterns. The local or regional connection in terms of finance may not have been limited to bank finance where funds for start-up or expansion were concerned. Joint-stock companies could, in the nineteenth century, often look to a regional public to subscribe to issues (Stokes, 1998). Again this can be ascribed to a complex mixture of loyalty or tacit knowledge, with local or regional financial market boundaries both establishing and reinforcing the pattern of investment.

The finance of nineteenth-century industry and enterprise can, then, been seen as a local or regionally determined phenomenon, across a range of forms. At the heart of almost all these forms lay the concept of connection, of personal knowledge and a degree of trust which stemmed from that knowledge. In this way risk could be reduced, or at least accurately assessed, and uncertainty minimized. In the twentieth century, however, widespread changes occurred in the ways in which banks and capital markets functioned. Standardization and formalization of banking procedures with the concentration and centralization of banks accelerated in the twentieth century, certainly in Britain. Risk was no longer tied to local intimate knowledge of a firm or its owner or manager (Newton, 2000, 193). Chandler (1977) identified a managerial revolution which came with the concentration of industry in the USA. So too in the banking sector it is probable that the personal discretion of managers gave way to a formalized decision-making process. Moreover, economies of scale meant that small enterprises with their inherent calls on time and effort in managing and monitoring loans, for a comparably limited return, were progressively squeezed out in favour of larger-scale or safer investments such as government securities. Concerns with liquidity similarly saw the favouring of safe and tradable investments superseding any longer-term equity investments in small- and medium-sized firms, as banks in Britain settled into a cosy cartel which was to dominate the British clearing bank system for most of the mid-twentieth century. A similar trend of concentration and centralization developed in the capital markets, with the demise of regional stock exchanges and consequent escalating scale (and costs) of issues. In the British case concentration of both banking and capital markets devolved to London, fuelling perennial complaints of a North–South divide between the manufacturing and financial economies respectively (Ingham, 1984; Capie and Collins, 1992). In sum it is fair to say that there occurred a disconnection between entrepreneurship and capital availability as changes in the banking and capital markets developed. This resulted in a loss of entrepreneurship within banks in terms of local, regional autonomy. Perhaps this process saw the demise of the manager-entrepreneur. Certainly it saw the severing of a connection between the bank and entrepreneur in terms of any fusion of strategies of innovation.

Reconnecting the investor and the entrepreneur: the rise of venture capital

The situation described above rests, of course, on a series of generalizations, and there were no doubt exceptions to the general pattern. To many observers, however, it seemed that a noticeable shift had occurred in the structures of banking practice, certainly in Britain and the USA, and that this shift had a particular impact on entrepreneurial or growth companies. The problem was compounded in that these companies could be seen as the wellspring of innovation and economic modernization, despite the defence being mounted on behalf of the large-scale firm and its systematised R&D and innovation structures (Chandler, 1977). A new wave of technology was to emerge in the 1960s which, while initially requiring the research and capital structures of large firms, or even governments, to develop in its initial stages, soon produced niche opportunities for smaller enterprises and was ultimately to favour those smaller and more dynamic companies over their larger competitors. It was in this sector of technology-driven firms, particularly in the burgeoning computer sector, that a new form of investor was needed, and indeed seemed to be emerging.

When the first modern venture capital enterprises appeared in post-Second World War USA they were seen as heralding a new dawn. What Bygrave and Timmons have termed 'classic venture capital' (CVC) can probably be traced back to investors associated with the fledgling computer industry of the 1950s.[1] ARD's investment in the Digital Equipment Corporation (DEC), for example, can be portrayed as a 'classic' venture capital investment. The basic profile of such an investment follows a set pattern based around investment in an emergent, innovative and volatile high-technology niche market and long-term investment – usually with a major component in the form of equity ownership. This involves a heightened sense of risk-taking, for example investing without security or the benefit of a long-term record of success on the part of the enterprise. Typically a venture capital investor would, somewhat paradoxically on the face of things, expect to lose money on a relatively high number of investments. To compensate for this the venture capitalist would expect to gain very high returns from the few investments which do turn out to be 'home runs'. These very high returns – enabled by the equity stake which forms part of the essence of CVC – can more than compensate for the large number of failures elsewhere in the portfolio. In the case of ARD and DEC for example, an initial investment of $77,000 was worth over $350 million fourteen years later and provided ARD with almost 50 per cent of its entire profits during the first 25 years of its existence (Bygrave and Timmons, 1992; Gompers, 1994).

Classic venture capital was, then, associated with an increased juxtaposition of high risk and high reward. It was also associated, as we have seen, with a particular sector – the newly emergent IT industry in the USA from the 1950s onwards. (Successive 'high tech' sectors or subsectors would later follow the same pattern, notably the biotechnology sector in the 1980s and the dotcom sector in the 1990s.) The IT sector, characterized by the volatility of a newly emerging industry in terms of new products, new applications and new markets, offered a turbulent environment where CVC could seek 'home run' investments. The other characteristics of this sector were the dominance of start-up or smaller-scale firms, with very large and meteoric growth potential. A typical profile of the ideal IT firm would be one or two scientists, engineers, or technically literate individuals, usually with an inordinate affinity for a specific technology. (The most celebrated examples of this process have gone on to become household names – Bill Gates, Steve Jobs, Steve Wozniac and so on.) These individuals could emerge direct from college, or from within large R&D departments in firms or in the public sector. Venture capital could provide the initial funding to take micro enterprises to a stage of full production and growth. Often the ratio between capital and profit in early IT niche enterprises could be extremely high, facilitating very rapid growth. While there were few if any effective competitors in the market premium prices could be charged. The first WordPerfect software packages, for example, sold for around $5,500, though actual production costs were only around $25 (Peterson, 1994, 14). Usually, however, in the early stages of company growth the enterprise needed funds in the short term to enable business plans based on rapid expansion to be implemented.

New sectors, characterized by a range of new enterprises, often gravitate around a particular area, originating perhaps from a particular institutional catalyst, as in the case of MIT and Route 128, or sharing and feeding a common skilled labour pool. There may be a broader range of dynamics and effects in play. The expansion of IT firms may well conform to a Schumpeterian or Kondratieff cycle in terms of sectoral rise and decline or entrepreneurial regeneration. They may form part of a quantum shift in economic patterns, in this case a move towards a post-Fordist production and consumption cycle, predicated again on a smaller-scale, regional, technologically driven set of comparative advantages which create the opportunity for new firms to thrive (Piore and Sabel, 1984; Storper and Scott, 1992; Wilson and Popp, 2003). Whatever the wider causes and effects, these new firms certainly needed a new form of relationship with banks and investing institutions and this was where the venture capital sector became a vital part of the process.

Binary entrepreneurship

Importantly, the relationship between the venture capitalist and these new young, entrepreneurial and innovative firms was not limited to that of a mere financial facilitator. When examining the relationship between the venture capitalist and investee enterprise we can perhaps begin to detect the development of a binary entrepreneurship – entrepreneurship superseding the instrumentalities of simply providing financial backing. Beyond the provision of capital for a quantum jump in scale of the enterprise, the classic venture capitalist brought a range of expertise to the new partnership – for example, bringing added value to the investment. This added value would enhance the level and effectiveness of entrepreneurship within the firm. Since the venture capitalist took an equity stake in the firm, this meant an increased 'hands on' role in the running of the business. While this may not have involved product design or everyday management it could certainly take the form of imposing an accounting and financial discipline on firms, which were often run by innovators with plenty of technical knowledge and a feel for market opportunities, but with very little formal managerial experience.

Beyond this, under certain circumstances, the venture capitalist could bring technical knowledge of their own to the investment. Spatially situated in clusters or networks around the fledgling industry, venture capitalists accumulated knowledge from their experience with similar firms. In addition the venture capitalist may have accumulated knowledge of related technologies, or other innovators in the region with whom the entrepreneur might team up. They may have developed specialist market knowledge – for example, which products are likely to compete with or complement those under consideration, or what price the market will stand and so on. The classic examples of this hyper-regionalization are very well known – notably in this case the clusters around Stanford and Route 128, and other areas conforming to the so-called 'silicon valley' (or 'silicon glen' in Scotland) model. If there is an enterprise-enhancing factor emanating from the clustering effect then *locally* situated venture capitalists could become effective conveyors of information and experience. In the primacy of 'local' market knowledge we see in some senses a reversion to earlier forms of banking and reduced information asymmetries to be sure, but the relationship in its proactive sense extends far beyond this in terms of the effectiveness of actually adding value to the enterprise through the 'binary entrepreneurial' function. At the very least the venture capitalist's own experience of failed investments can be put to particularly good use in this context – passing on the lessons learnt and highlighting the pitfalls revealed by unsuccessful enterprises in the same region or sector.

The CVC sector, as noted above, emerged in the USA in the 1950s, expanding substantially in the 1970s. Although typically associated with new industries with rapid innovation cycles, the venture capital–enterprise relationship was also seen to be long-term in nature. Again the issue of equity ownership is important here, lessening the debt burden on the newly expanding firm, but also tying in the investor for the long haul. This was especially the case in small and medium-sized start-up firms where there was no readily available secondary market to trade equities. There are of course broader contextual reasons to explain the rise of highly dynamic sectors like IT in the USA from the 1950s onwards, which provided the opportunities for both the innovative entrepreneur and the venture capitalist. These include the general technological environment, in part driven by the spin-offs from Pentagon Cold War spending in IT and related sectors (Mowery and Rosenberg, 1989; Norberg and O'Neill, 1996). The 1950s and 1960s represent the high point of government intervention in this sector (Coopey, 2004a). This is not to say that this intervention had a direct effect on smaller entrepreneurial firms, but rather it created a critical mass of IT development in the USA, partly ushering in successsive phases of development as the industry moved from mainframes to micros to PCs to networks and the IT industry overlapped and enhanced the communications sector. (The government did have a more direct enabling impact on growth firms in the sector later on in terms of business policy aimed at fostering small and medium-sized enterprises (Gompers, 1994).)

The peculiarities of the British

If we shift the focus to Britain we get a different story in relation to the timing and nature of the emerging venture capital investment sector. (Quite how far the US venture capital sector deviated from the CVC model proposed above will be scrutinized below.) In the British case several 'deviant' factors must be identified at the outset. The sector only developed in a readily identifiable state in the 1980s – much later than in the USA. Neither could venture capital be strongly identified with the IT sector, since the rapid innovation cycles of the early years were no longer in evidence (except in the software sector perhaps) and in the case of Britain this sector had failed to mature into an industry of national importance, being largely eclipsed by the US and Japanese IT industries (Coopey, 2004a). There was, however, a critical institutional impetus – a centre of economic gravity – which did act as a catalyst to the expansion of the venture capital sector. In Britain the venture capital sector was formed under the heavy influence of a particular financial enterprise – the investment bank ICFC, which later became 3i.

The 3i influence grew from British peculiarity, in the form of an attempt to intervene and reshape the banking and investment sector in Britain during the interwar years. The long-standing criticism of the British banking system outlined above crystallized during the 1930s around the notion of a gap in the capital market – the inability of small and medium-sized firms (SMEs) to obtain long-term finance. This was held to be the product of a range of historical trends including the merger of the major clearing bankers and their concentration in London, the external orientation of the merchant banking sector, the inability of SMEs to raise capital on the stock market (due to scale and the costs of placing an issue and to the lack of secondary equity markets below a certain threshold). The later years of the Second World War saw a complex process of negotiation, planning and intrigue involving the major political parties, government departments (notably the Treasury and Board of Trade), the Bank of England and the major clearing banks. The Industrial and Commercial Finance Corporation (ICFC) and the Finance Corporation for Industry (FCI) were established in 1945, both institutions designed to address perceived shortcomings in the functioning of the British capital market and banking sector (Kinross, 1982; Coopey and Clarke, 1995). These institutions, though capitalized and owned by private sector banks and financial institutions, were seen to have a sense of public duty. ICFC in particular was charged with closing the 'Macmillan gap' – the shortfall in investment capital for SMEs identified by the Macmillan Committee in the interwar years (Macmillan Report, 1931; Ross, 1990; Kynaston, 2001).

ICFC (which was to form the intellectual centre of a merged and renamed 3i in the 1980s) went on to form the core of the venture capital sector in Britain as it emerged in the 1980s. The bank had survived a turbulent and difficult early period thanks to paternal support from the Bank of England and some astute and innovative investment strategies by successive chairmen and general managers (Butt-Philip, 1985; Coopey and Clarke, 1995). What emerged from the process was an investment strategy which closely resembled many features of classic venture capital banking. ICFC invested long-term, in the form of equity investment wherever possible. In this respect the institution scored a number of 'home run' investments, the most notable of which being the investment in the airline company British Caledonian, which, though at one point written down as a loss, eventually realized a very large profit (Coopey and Clarke, 1995). ICFC also followed the CVC pattern in several other respects. They remained, at least nominally, an institution dedicated to SMEs – start-up and growth companies in particular.

ICFC also engineered a regional effect – though not within specific industrial/innovative regions such as the later stereotypical silicon valleys or corridors. Rather ICFC maintained a local presence through the establishment of regional office networks, to provide local facilities and acquire local knowledge. In adopting this strategy ICFC went against the trend of the major banks and finance houses which had concentrated in London. Though not as closely tied to a particular industrial or technological sector, the local presence of ICFC in cities such as Birmingham, Leeds, Cardiff and Glasgow effectively reconnected the investor with both the economic and social networks of which smaller firms were a part. ICFC also conformed to a CVC profile in the way in which it presented a 'value added' image in terms of guiding newer firms through the process of setting up effective management and financial reporting. Finally, in terms of investment in high-technology sectors, ICFC did begin to deviate from the CVC paradigm, though not entirely. The bank did invest in aerospace and IT-related companies, and during the 1960s did establish a dedicated offshoot – Technical Development Capital (TDC) to target 'high technology' investments. TDC was never the central strategy of ICFC, however, and the bulk of the bank's investments could not be said to come from the high-tech sector.

ICFC did not conform to the CVC model in several other respects. The source of the bank's capital through the initial years of growth remained ICFC's major shareholders – the clearing banks. As such it was rather protected for a venture capitalist. This protection was largely at the behest of the Bank of England, and ultimately a *political* factor – again rather deviating from the image of venture capital and entrepreneurial independence. ICFC was nurtured through a complex blend of ideology and pragmatism managed by the Bank of England, largely to stave off the possibility of further government intervention in the banking sector. (In its early years ICFC was expected to follow government policy in favouring investment in depressed regions of the British economy, for example, though in practice this was effectively resisted.) Only later, when ICFC was fully established, was it able to fund investment from its own accumulated capital and money raised on the wider capital markets. ICFC also failed to conform to the CVC paradigm in terms of the scale of its investments. Though primarily investing in smaller companies (ICFC was formally restricted to investments within the 'Macmillan gap' – deemed to be approximately £200,000 at most), the bank did where possible invest in bigger deals – sometimes simply by making multiple investments in the same enterprise. (This question of scale – investments outside the realm of CVC activities – is one to which we shall return below.) ICFC also enhanced its profits by investments which were not directly related to growth companies, but rather capital transfers or manipulations of the tax regime – as in the case of minimizing the effect of estate duties, for example (Coopey and Clarke, 1995).

ICFC, though it was born through a political process, and did engage in activities outside the remit of CVC, nevertheless demonstrated a strongly innovative approach to investment and did bear a close resemblance to many of the traits of true venture capitalism. This was in part due to the entrepreneurial approach of the early chairman, Lord Piercy, and his general manager John Kinross. Faced with a difficult relationship with the clearing banks, who often sought to frustrate ICFC, and a difficult investment environment, hedged around by government restriction and rife with the inherent difficulties in investing successfully in the SME sector, Piercy and Kinross demonstrated considerable tactical skill in both finding investments and maximizing the returns to ICFC. They engendered a culture of non-conformity in investment practice which became part of the enterprise culture at ICFC and which was to be transmitted to the large number of venture capitalists which emerged from the bank in later years.

In the 1980s the group comprising ICFC, FCI and other components was reorganized and re-badged as 3i (a derivative from Investors in Industry). 3i presented itself in venture capitalist style as the mentor and supporter of entrepreneurs and innovators. This was particularly true in terms of its focus on industrial investment and equity, long-term partnership investing, and its regime of value-added functions, extending ICFC's advice and imposition of reporting discipline on investee firms. Occasionally, though not typically, ICFC, and later 3i, would place a representative on the board of investee companies – though this could present problems in terms of a conflict of interests if two or more firms in the same sector were being invested in, or if, as had been the case for ICFC, the appointed board member began to favour the enterprise over the bank (Coopey and Clarke, 1995).

3i's position as the progenitor of venture capital in the UK and the promoter of entrepreneurial firms rests on three claims. First, 3i grew primarily from ICFC, which certainly displayed strong CVC traits in the nature of its operations from the outset – long-term, risk-based equity investment, networked in nature and bringing added value to the start-up and growth-led SME sector. Second, when the venture capital sector grew very rapidly in the 1980s in Britain, many of the new venture capitalists were headed by staff who had gained their experience of investing while working for 3i, so much so that 3i became popularly known as the 'university of venture capital'. Ex-3i staff carried with them all the knowledge of the ICFC/3i risk assessment and management skills accumulated over many years. Third, and more controversially, 3i pioneered the management buy-out (MBO) in Britain, and essentially established the market for this type of investment.

It is worth dwelling briefly on the MBO phenomenon, particularly in the British context, since it raises many important questions concerning venture capitalism and its relationship to entrepreneurship. As noted, 3i pioneered this form of investment (known as the leveraged buy-out in the USA). Corporate law concerning the transfer of ownership made the process complex and time-consuming in Britain until the law was changed in the early 1980s. Despite these difficulties 3i established a market for buy-outs and developed a proactive marketing stance to encourage managers to consider the MBO as an option. The MBO effectively handed over ownership of the firm, or part of the firm, to its managers and their backers. The managers would use their own capital (often raised through mortgaging personal property) to buy a proportion of the equity; the venture capital backer would in turn take their share. The managers would typically get more shares for their money in order to recognize their unique position in terms of expertise and 'sweat equity', that is, recognizing the fact that they had put in many years of work in the management of the firm before the buy-out, and that it would be their responsibility to continue to run it.

The management buy-out, promoted by 3i and the general venture capital funds which grew exponentially in the early 1980s, could be viewed as one of the most important links between investment and entrepreneurship. The very essence of the MBO is the empowerment of managers – releasing the entrepreneurial energy which is held in check by the existing corporate ownership. A number of political initiatives set the context for the expansion of this investment sector. The 'New Right' Conservative governments of the 1980s were, of course, keen to expound Schumpeterian reverence for the entrepreneur. One factor in support of this was the relaxing of the tax regime to facilitate capital gains, freeing prospective entrepreneurs to seek rapid profits. The governments of the 1980s were more than usually concerned to encourage the growth of SMEs. Research at the time, since refuted, seemed to point to this sector as the most dynamic in terms of job creation in times of recession (Birch, 1979; Stanworth and Gray, 1991). There were dedicated initiatives to aid the SME sector such as the Business Expansion Scheme and Loan Guarantee Schemes, though these were largely ineffectual or subverted. Another central tenet of New Right political economy – the primacy of the market – eventually gravitated towards the privatization of the nationalized industries, partly to encourage 'popular capitalism' by spreading the share-ownership base in Britain in emulation of the USA, and partly to promote entrepreneurship and competition among the newly privatized firms.[2] Some of the early sell-offs generated opportunities for managers to seek backing for a buy-out. Though not large in number these buy-outs did achieve a high profile, promoting the idea of the MBO. A third factor was the appearance, in the early 1980s, of a buoyant stock market. This was important for the MBO, since most involved a business plan, typically four or five years, which would result in flotation of the enterprise and the realization of a large capital gain for the entrepreneur and the venture capitalist. A successful MBO, for the venture capitalist at least, required a satisfactory exit. In this respect the establishment of the unlisted securities market in 1981 promised to provide a further boost, giving access to the stock market for smaller enterprises, in much the same way that the Nasdaq and its OTC market opened up opportunities in the USA. In some ways the MBO represented the quintessence of entrepreneurship in Britain, generating a fusion of manager and investor in the ownership of a break-out enterprise with a dynamic high-growth strategy.

The overall growth of the venture capital sector in the UK was one of the prominent features of the 1980s. There are definitional difficulties which preclude an exact figure in terms of the size of the venture capital sector. There is, for example, a range of ownership characteristics which need to be taken into account. Venture capitalists could be privately owned, affiliated to other banks or institutions or formed as directly controlled subsidiaries of larger banks or investment institutions. In the latter case, for example, the major clearing banks formed special subsidiaries in an attempt to take advantage of the emerging venture capital sector in the 1980s. These included County NatWest Ventures, Barclays Development Capital and Lloyds Development Capital. 3i itself represented another form of venture capital company, though rather unique in its origins and ownership structure. The number of venture capital organizations was estimated by Graham Bannock to have risen from around 50 in 1982 to over 130 in 1989, while the British Venture Capital Association (BVCA) membership quadrupled in the 1980s, rising from 30 in 1980 to 120 in 1990 (Coopey and Clarke, 1995).

Venture capital and the promotion of the entrepreneurial firm

Accepting the difficulties of definition and the differing trajectories and characteristics of the venture capital sector in the USA and Britain, are we nevertheless able to say that the emergence of this sector somehow enhanced entrepreneurial opportunity or effectiveness in either economy? On the face of things venture capital provided investment for firms unable to persuade more conservative elements of the capital markets and banking sector to invest. Many commentators who had seen the failure of the British banking and investment sector in particular welcomed the emergence of this new investment phenomenon. British banks, as noted above, were held variously to have become too concerned with security and liquidity, to have been oriented towards investing in government treasury issues or large corporate loans, to have had no interest in equity investment, to have not understood industrial, let alone advanced technology investment or markets, or to be more interested in overseas investment. Centralized in London they had also lost touch with regional or local information and markets. The capital market was unavailable to all except the large corporation, able to afford underwriting and issuing costs and able to seek large enough amounts of investment to guarantee a secondary market in shares. The capital market also sucked up the very large amounts of capital controlled by the big City institutions – the pension and insurance funds, which, administered by a small staff of fund managers, could not be directed towards a myriad of smaller investments.

Venture capital seemed to offer an opportunity to change this. They welcomed risk (managed through equity participation), understood markets and technologies, invested long-term and added value in terms of knowledge and corporate governance (Coopey, 2004b). Their success had persuaded the clearing banks to set up subsidiaries, which adopted a new corporate culture of risk and reward, linking earnings of staff to investment success (see below). They also offered a route to unlocking institutional capital within the big funds. Venture capital was able to act as an intermediary in channelling the funds of the big investors towards a large number of smaller, entrepreneurial investments. Whereas the manager of a large pension fund could not spare the time and effort in finding, assessing and monitoring a number of investments at, say, between £500,000 and £1,000,000, he could simply invest £10 million in a venture capital fund, sit back and let the venture capitalist act as entrepreneur by proxy, doing all the hard work. In addition to these advantages which venture capital opened up for the entrepreneurial SME, it also created the MBO sector (and management buy-in sector), which, as noted above, represented the zenith of entrepreneurial empowerment. In the USA the earlier venture capital movement had empowered a whole range of the most dynamic entrepreneurial and innovative enterprises which, in cases like the IT sector, were to topple larger established corporations in almost David and Goliath fashion.

However, in many ways venture capital has failed to live up to expectations in both the USA and Britain. Bygrave and Timmons have clearly outlined the ways in which classic venture capital in the USA fell short of the ideal. Principal failures include the *lack* of a long-term perspective in practice (Bygrave and Timmons, 1992; Gompers, 1994). Venture capitalists have been seen to favour a short-term business plan, with a realizable exit within a few years. In this respect companies with venture capital backers are encouraged to grow the company as rapidly as possible and inflate popular expectations of product development and market share. This has in some ways been determined by the general context of stock market buoyancy and the boom phases of new sectors. To enable a rapid expansion and optimistic prospectus for an IPO (initial public offering), companies were usually encouraged to add large amounts of debt to the equity provided by the venture capitalist. Thus highly geared companies are presented to an eager market, but stand less chance of long-term success given the high debt burdens and inflated projections presented to the public.

Venture capitalists have also been seen to fail in respect of boosting the SME sector. Increasingly deals became larger and larger in scale, particularly in the leveraged or management buy-out sector. Very large transfers of ownership, such as the (Isosceles) Gateway supermarket MBO in Britain, had very little to do with the empowerment of SME-style entrepreneurs. Venture capital was also seen to fail, in Britain at least, in boosting the advanced technology sector. Proportionately fewer deals became linked to firms in this sector, particularly after the MBO market began to develop. This in essence reflected an increasing aversion to risk. As a rule of thumb venture capitalists estimated that for every ten investments in the high-technology sector, nine would fail, leaving one success to carry the burden of paying for the rest. In the case of MBOs the likelihood of success was nine out of ten – exactly the reverse of high-technology investments when it came to risk. Added to this, high-technology companies were more trouble in terms of assessing and monitoring progress. Linked to this failure, venture capital also failed to live up to expectations in terms of added value in the form of market or technical advice. The presence on the board of a representative from the investor is often held to be a positive factor, most notable in the oft-cited presence of bank officials on the supervisory boards of German firms. Criticism of this schema has emerged, pointing to the peripheral influence actually wielded by bank appointees. In the case of venture capital, investee firms began to complain that they only experienced interference at best, and that added value was in fact an illusion – leading to the sector being given the epithet of 'vulture capital'. In the case of the MBO market venture capitalists were seen as adding nothing to the technical or managerial strategy of the firm, but rather taking a cut from the process of simply moving ownership from one place to another.

The venture capitalist as entrepreneur

Up to this point when considering venture capital and entrepreneurship, we have looked critically at the ways in which CVC or real venture capital promoted or enhanced the opportunities available to the entrepreneurial firm. In some ways venture capital, if it conformed to the ideal model, could be seen as successfully reconnecting risk and capital in a way which was perhaps destroyed with the demise of the Schumpeterian owner-entrepreneur of early industrialization and the networked local bank. Venture capital, in its pure form, may have produced a kind of symbiotic or synchronous entrepreneurship whereby both investor and entrepreneur form a fully functional partnership. In practice venture capital may have simply been opportunist and often a misnomer when used to describe the kind of investment activity often undertaken in this sector. However, seen from another perspective, the question of entrepreneurship may be very germane to the activity of practising venture capitalists. If we consider the venture capitalist as entrepreneur, this opens up a very rich field of enquiry.

It is the very nature of venture capital, as pointed out above, to be innovative and dynamic in a way that suggests classic entrepreneurship. In contrast to the risk-averse, conservative banking sector in Britain for example, we have seen how venture capital, in its pure form, thrived on risk. Innovation is also a key component in the ideal entrepreneurial profile and venture capitalists can be seen to innovate in various ways in terms of structuring equity and debt and taking advantage of changing investment environments. Venture capitalists need to be efficient in seeking new opportunities for investment, or, in the case of 3i and MBOs, for example, effective in marketing the idea of the MBO – selling it to potential MBO 'customers'. In this regard 3i was very successful in engendering the idea of the MBO in some management teams – so much so that if they failed in plans to buy their own firm, the team looked for another firm to buy into, transforming the operation into a management buy-in (MBI). MBIs became a substantial market for 3i in the later 1980s.

In considering entrepreneurship the role of individuals must remain central. The venture capital sector stands out as one dominated by individual control. Many of the early funds were controlled by a single key personality, able to make decisions, often intuitively, and without the burden of corporate approval. This factor is graphically illustrated by the clearing banks' incursion into the venture capital market in the 1980s. When setting up their venture capital subsidiaries they were at pains to conform to the norms of the sector – they needed in particular to link reward to individual performance though bonus- and incentive-related pay schemes (Coopey and Clarke, 1995). This was not least in order to be able to recruit staff of sufficient experience in the venture capital labour market. This method of reward created significant friction between the established departments of the banks where performance and reward were not directly linked. Nevertheless an exceptional remuneration scheme was seen as necessary to conform to the individualistic culture of the venture capital sector.

A further perspective from which the venture capital sector can be seen as entrepreneurial is in the way in which it sought funds to invest. Not only did venture capital need to find investment opportunities, but it also needed to attract investors willing to subscribe to venture capital funds. In this respect, certainly in the British case, venture capital can be seen to be innovative in seeking out, or rather unlocking, the previously inaccessible funds which existed within City institutions, or in persuading large banks, such as the clearers, to enter this ostensibly very risky sector. In this sense the venture capitalist can be seen to be involved in entrepreneurial activities in two spheres, the first of these encompassing first the finding and then the structuring of deals with the innovative firm. Where equity was involved this often involved considerable persuasion on the part of the venture capitalist, as SME owners, with a bright idea, are traditionally reluctant to hand over any degree of ownership or control of their business. The second sphere involved selling the idea of venture capital investment to the fund provider, again involving a considerable degree of persuasion and entrepreneurial flair in convincing, often quite conservative, fund managers or bank boards of directors to invest in a portfolio of risky ventures.

Conclusions

Venture capital and entrepreneurship are integrally related. Both the entrepreneur and the venture capitalist, in their pure form, operate in a world of innovation, risk and competition. In certain contexts, notably the USA from the 1950s onwards and in Britain from the late 1970s, a wider environment may emerge which fosters the growth of entrepreneurial venture capital investment. Given the close relationship which exists between the venture capitalist and the investee firm, what emerges might be a form of binary or synchronous entrepreneurship – both parties working in concert to grow the business and make profits reflecting the level of risk involved. This is especially true where the venture capitalist can be seen to add value to an investment through the transmission of market knowledge or the encouragement of best practice in management, for example.

In practice it can be seen that a precise definition or typology of venture capital may be difficult, and that in many ways investors that emerge under the umbrella of 'venture capital' may fall short of initial expectations – may prove less innovatory or more risk-averse than existing institutions. However, a stronger case for the link between entrepreneurship and venture capital may be revealed when focusing on the venture capitalist itself as entrepreneur. In the seeking of investment opportunities, in the creation of new investment 'products' and markets, in finding sources of funds to invest, and in maintaining the primacy of individual or small-team management and decision-making, venture capital can be seen to closely fit the profile of the ideal entrepreneur.

Notes

1. Though a longer-term version of 'venture capital' may of course be applicable to much earlier enterprises, such as the adventuring companies which

eventually emerged as the East India companies, the Hudson's Bay companies and so on. This chapter will focus on what is generally accepted as the modern phenomenon, defined below.

2. The sale of these industries also raised large revenues for government, of course, offsetting the considerable expenditure engendered by policies which had created very high levels of unemployment.

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7
Company Founders

Youssef Cassis

The creators of large companies have carved a niche for themselves in the world of business history. They epitomize the very idea of entrepreneurship, whether one looks at their achievements – the emergence of a large company is usually the result of a major innovation – or at their personality and motivation – risk-taking, audacity, perseverance, but also luck, flair, vision, even creativeness: in short, a genius for business. Entrepreneurs are the heroes of business history, the ones who occasionally give it a romantic dimension. They have been celebrated, and their contribution to economic growth theorized by many an economist, beginning with the most famous of them, Joseph Schumpeter (Schumpeter, 1934).[1]

As the chapters in this volume show, the concept of entrepreneur poses several problems, in particular within large companies: does it apply to a single person or to a team? Can salaried managers be considered as entrepreneurs or should this label be reserved for the owners of capital who, in the last analysis, run the risks involved by investment and expansion? Should financiers and raiders be seen as a new breed of entrepreneurs or are only the creators of wealth worthy of the name? While the concept of entrepreneurship can be fruitfully used to analyse the innovative process within the large corporation (Lazonick, 1991; Langlois and Robertson, 1995), an effective use of the notion of entrepreneur is made more difficult by the contradictory answers which can be given to these questions.

To define entrepreneurship as the creation of a large company would be far too restrictive, both in terms of identity (by considering an individual rather than a group or an organization) and function (by neglecting most aspects of the innovative process). Yet there can be little doubt that whatever definition is given to entrepreneurs, it will always include 'the founders of large enterprises'. The object of this short chapter is thus to shed some light on one variety of the species with which we are concerned. I will do so by considering a small group of businessmen: those who not only founded their own firm, but who built it into a large corporation during their lifetime. The geographical framework will be limited to the three major European economies (Britain, France and Germany), while the chronological framework will span the entire twentieth century. The definition of a large company used here is fairly restrictive. Rather than taking into account the fifty or one hundred largest companies in each country, I have only considered those above a size which might be considered as the minimum to qualify for 'big business' status (Cassis, 1997).[2] Such criteria inevitably lead to overlooking many a deserving company founder. However, those selected can be considered as truly exceptional cases, as most companies usually reach a giant size either at the second generation or after their founder has retired.

The chapter will address four major questions:

1. What has been the proportion of large companies led by their founder in the course of the twentieth century, and have company founders been more numerous in one country than in another?
2. Who were the creators of large companies and in which sectors were they more likely to be found?
3. Do company founders present some common characteristics which differentiate them from 'ordinary' business leaders?
4. How do we assess the significance of company founders in economic and business development?

Large companies led by their founders

The proportion of large companies led by their founder was far from insignificant in the first part of the twentieth century, with 17 per cent in 1907 and 14 per cent in 1929. The figure drops sharply after the Second World War: 4 per cent in 1953, and 5 per cent in 1972 and 1989. Their geographical distribution might be surprising. Before 1914 the highest proportion of founders was in Britain, that aged industrial nation so often condemned for her senescent capitalism and loss of entrepreneurial spirit. The cliché is threadbare. In 1907, 24 per cent of the country's largest companies featured one of their founders as chairman or managing director, as against 13 per cent in Germany and 10 per cent in France.[3] In 1929, German large companies came first, with 18 per cent, as against 14 per cent for their British and 10 per cent for their French counterparts, despite the fact that Weimar Germany was economically far less dynamic than Imperial Germany. In the early 1950s, Britain was the only country where a few major companies (five out of a sample of 55 large companies) were still led by their founder, as against a single one in France and none in Germany. France came top in both 1972 (8 per cent as against 7 per cent in Britain and 2 per cent in Germany) and 1989 (6 per cent as against 5 per cent for Britain and 3 per cent in Germany), though of course only a handful of companies was concerned.

The creators of large companies

One would expect to find founders of leading firms in the new industries where there existed possibilities of developing a new technology, reaping monopoly profits and financing a rapid growth. In 1907, only 38 per cent of the large companies headed by their founder (eight out of a sample of 21) were involved in one of the new industries, with nearly half of them in electrical engineering. The most impressive figure was undoubtedly Emil Rathenau (1838–1915), at nearly 70 still the boss of the company he had founded 25 years earlier (Chandler, 1990). In Britain and France, Hugo Hirst (1863–1943) and Pierre Azaria (1865–1953), the respective joint founders of the General Electric Company and the Compagnie Générale d'Électricité, had not yet reached Rathenau's stature before 1914 (they were in any case a generation younger) but they definitely approached it in the interwar years (Jones and Marriott, 1970; Broder and Torres, 1992). In chemicals, the founders were in Britain, with John Brunner (1842–1919) and Ludwig Mond (1833–1909), the two founders of Brunner Mond & Co., and William Lever (1851–1925), later Lord Leverhulme, the founder of Lever Brothers (Wilson, 1954; Reader, 1970). The great firms of the German chemical industry (BASF, Bayer, Hoechst) had been established some twenty years earlier and were run by members of the second generation in business or by salaried managers (Haber, 1958; Beer, 1959; Chandler, 1990). In France, the only chemical company of any size, Saint-Gobain, had been founded by Colbert nearly 250 years earlier (Daviet, 1989). Likewise in oil and rubber, major companies still had their founder as chairman: Shell with Marcus Samuel (1853–1927), later Viscount Bearsted; Dunlop, with William Harvey du Cros (1846–1918); and Michelin, with Édouard Michelin (1859–1940), the real founder of the French firm (Henriques, 1960; Jemain, 1982; Jones, 1984).

The highest proportion of creators, however, was to be found in the heavy industries (seven large companies out of a sample of 21–33 per cent), with several big names of the German and British iron and steel industry including August Thyssen (1842–1926), the founder of Deutscher Kaiser; Oscar Caro (1852–1931), the founder of Oberschlesische Eisen-Industrie; Hugo Stinnes (1870–1942), the founder of Deutsch-Luxemburg in Germany; Arthur Keen (1835–1915), the founder of Keen & Co. which was merged into Guest, Keen & Nettlefolds in 1901; and Arthur John Dorman (1848–1913), the founder of Dorman Long in Britain. Dudley Docker (1862–1944), the founder of Metropolitan Amalgamated, a railway equipment company, also belonged to this group (Treue, 1966; Davenport-Hines, 1984; Jones, 1985).

Founders were also prominent in the service industries, including Sir Thomas Lipton (1850–1931), of the eponymous retailing chain, and Théophile Bader (1864–1942), founder of the Galeries Lafayette. Alfred Harmsworth (1865–1922), later Lord Northcliffe, was the first press baron, heading the Associated Press which comprised the various newspapers he had launched since 1890. In shipping, John Ellerman (1862–1933), the richest man in Britain, was the founder, among others, of Ellerman Lines, though his business interests extended to brewing, coal mining, publishing and property (Rubinstein, 1984). Colonial enterprises offered wide opportunities for adventurers and serious businessmen alike. There were a few successes, but none on such a spectacular scale as Julius Wernher's, the last survivor of the three founders of the diamond company De Beers Consolidated Mines.

With 54 per cent of the large companies still run by their founder, the share of the new industries was higher in the late 1920s. Some, such as Hirst and Azaria, consolidated their pre-war position. Others were finally rewarded for earlier endeavours. In the German electrical industry, Robert Bosch (1861–1942) managed the firm which he had founded in 1898 but which only reached large proportions in the

1920s with the growth of the motor car industry, supplied by him with electrical accessories (Heuss, 1994). In chemicals, Gerhard Korte (1858–1945) was at 70 chairman of the potash trust Burbach Kaliwerke, which he had started to build at the turn of the century by methodically buying some sixty mines. In synthetic fibres, Max Fremery (1859–1932) was still among the leaders of the Vereinigte Glanzstoff-Fabriken which he had founded thirty years earlier. In the same industry, the rise of Henry Dreyfuss (1882–1944) was much quicker: he founded British Celanese in 1916 in Britain after an early career in Switzerland (Beau, 1961; Gerstein, 1980; Coleman, 1984). Nevertheless, the heavy industries were still well represented, especially in Germany, with Friedrich Flick (1883–1972), founder of the Mitteldeutsche Stahlwerke, and Peter Klöckner (1863–1940), whose company Klöckner Werke was formed in 1923 by the amalgamation of the various firms he had acquired over the years. In the service industries, especially in the media, most creators were in Britain: the brothers William Ewert Berry (1879–1954) and James Gomer Berry (1883–1968) at Allied Newspapers, Harold Sidney Harmsworth (1868–1940) at Associated Newspapers, and Isidore Ostrer (1899–1975) at Gaumont. In Germany, Rudolf Karstadt (1856–1944) was highly successful in establishing his chain of department stores, a venture started in the 1880s. As for the traditional industries, they got a new lease of life with William Price (1865–1952) at United Dairies, the largest distributor of milk in England, and Montague Burton (1885–1952) in the clothing industry.

The great founder-managers of the period were, however, the pioneers of the motor car industry: Louis Renault (1877–1944) and André Citroën (1878–1935) in France, Herbert Austin (1866–1944) and William Morris (1878–1963) in Britain (Fridenson, 1972; Overy, 1976; Church, 1979; Schweitzer, 1992). They ran the four largest European motor companies. In France, Renault and Citroën were probably the country's two largest firms. Individual success of such magnitude has not been equalled since then. Nevertheless, there have been some serious contenders. The first is the aircraft manufacturer Marcel Dassault (1892–1986), in the 1950s and 1960s an almost mythical figure, symbol of France's economic and technical recovery after the Second World War (Chadeau, 1988; Carlier, 1992). The second is Jules Thorn (1899–1980), an Austrian immigrant to Britain who set up on his own in the 1920s: his company, Thorn Electrical Industries, specialized in household electrical goods, radio and television, for which demand soared after the Second World War, and became a multinational empire in the 1960s (Bowden, 1986). The third one is François Bouygues (1922–1993), the 'concrete king', probably the most impressive figure among the founders still active in the late 1980s: his small firm established in 1951 had become thirty years later the world's number one in the building industry and one of the ten largest French industrial companies (Barjot, 1992).

Other significant founder-managers of the postwar years included Sir Thomas Sopwith (1888–1989), chairman of Hawker-Siddeley, and Francis Hearle (1886–1965), chairman of De Havilland both in the aircraft industry. By the early 1970s, founders were almost exclusively to be found in the service industries: retailing, with Isaac Wolfson (Great Universal Stores) and Marcel Fournier (Carrefour), hotel business with Charles Forte (Trusthouse Forte), conglomerates with Tiny Rowland (Lonrho), and consumer electronics with Max Grundig. The domination of services, and especially retailing, was even stronger in the early 1990s with the bothers Karl and Theo Albrecht (Aldi) and Otto Bisheim (Metro) in Germany, Gérard Mulliez (Auchan) and Paul-Louis Halley (Promodès) in France, and Stanley Kalms (Dixons) in Britain, to whom must be added the brothers Charles and Maurice Saatchi (Saatchi & Saatchi) in advertising (Fallon, 1988; Chadeau, 1995).

Among the founders of large companies, the creators can be distinguished from the predators. The former mostly relied for their expansion on internal growth, the latter on external growth, mergers and acquisitions. The two strategies are of course far from incompatible and many a company founder made use of mergers and acquisitions in the course of their career. In recent years, predators have been more commonly associated with the 'Anglo-Saxon', market-oriented form of capitalism, and creators with its German version. Without entering into a discussion on the respective merits of the two models, or the extent of their differences (Albert, 1991; Hall and Soskice, 2001), it should be noted that in absolute terms more predators have been running large companies in Germany than in Britain throughout the twentieth century. Their golden age was in the inflationary 1920s, which were propitious for such initiatives. In any case, predators have been a much smaller group than creators, probably because their main weapon, the takeover bid, is fairly recent. It had hardly been used before the 1950s in Britain, the 1980s in France, and the late 1990s in Germany. Nevertheless, in the first part of the twentieth century, such business figures as Hugo Stinnes and Friedrich Flick (both in the iron and steel industry) and Günther Quandt (in electrical equipment) in Germany, and Dudley Docker (in transport equipment) and Isidore Ostrer (in the film and cinema industry) in Britain, built their empire through mergers, takeovers and sales of companies.[4]

Though more frequent in recent years, takeover bids have most often been made by already large and well-established firms in order to expand or diversify their activities. They were rarely the means of creating a giant company from scratch. A major exception to this rule was James Hanson, later Lord Hanson (1922–2004). The conglomerate he had built since the 1960s had become the seventh largest British industrial company by 1989 by taking over ever larger companies such as Imperial Group in 1986 and Consolidated Goldfields in 1988, before failing to capture the ultimate prey, ICI, in 1991 (Brummer and Cowe, 1994). Predators did not neglect the traditional industries. Here the prize must surely be awarded to the four Willot brothers. They belonged to a family of small manufacturers, established in the north of France. The Agache-Willot group, which they built through a series of bold amalgamations, was the thirtieth largest French industrial company in 1972, before being wound up in 1981 (Battiau, 1976; Boussemart and Rabier, 1993).

Do company founders present same common characteristics?

To what extent can company founders be distinguished from other business leaders? Posing this question should not be seen as an attempt to highlight what might be the specific features of the twentieth-century entrepreneur, or to define the ideal type of the founder of a large company. However, comparing the collective biography of founders with that of other business leaders might help to better identify the particular type of entrepreneur with whom we are concerned. Particular attention will be paid to three decisive moments in the shaping of a business life: birth, education and training, and early career.

There is little doubt about the narrow social recruitment of business leaders. Since the beginning of the nineteenth century, in Europe as in the United States, they have been recruited among the privileged classes (landowners, businessmen, senior civil servants, professionals).

Moreover, up to the generation active in the 1960s, more than half were themselves sons of businessmen (Kaelble, 1980). The founders of large companies were no exception to this rule. There was, however, a difference between founders on the one hand and inheritors and salaried managers on the other, which consisted in the higher proportion of sons of businessmen, especially sons of small businessmen, among founders. Caution must of course be applied when dealing with such figures, but there is a clear trend which cannot be solely attributed to erratic statistical results typical of small samples.[5] In 1907, 67 per cent of the leaders of the largest companies were sons of businessmen, as against 76 per cent for founders alone. As far as the sons of small businessmen were concerned, the figures were respectively 6 per cent for business leaders and 19 per cent for founders in 1907, and 6 per cent and 39 per cent in 1929. In 1953 and 1972, all the founders whose social origins are known to us came from a business family, as against only half for the entire group of business leaders. It thus appears that having been immersed from birth in a business milieu, in particular that of owner-managers, constituted one of the ingredients in the formation of the entrepreneurial spirit: August Thyssen's father owned a small rolling mill before setting up as a banker, Louis Renault was the son of a button manufacturer, Francis Hearle was the son of an agricultural machinery dealer. The list is endless.

Founders also differed from other business leaders in that their educational background was less elitist and their level of education usually lower. In Britain, a single founder of a large company was educated at a public school: this was Arthur Rank, founder of the film company Rank Corporation and son of Joseph Rank, himself founder-manager of the country's largest flour milling company. By contrast, 27 per cent of British business leaders active before 1914 had been educated at a public school, and around 40 per cent of the subsequent generations. Not a single founder went to Oxford or Cambridge, while in the case of business leaders, the proportion rose from 15 per cent before 1914 to a third in the interwar years and nearly 50 per cent thereafter. In France, throughout the twentieth century, a good third of the business elite was trained at the École Polytechnique, but this was the case of only one founder, André Citroën. In Germany, where an apprenticeship was more common than in Britain and France, the proportion of founders trained on the job (40 per cent in 1907, 50 per cent in 1929) was much higher than for business leaders (31 per cent in 1907, 18 per cent in 1929). The reverse applies to university education, more widespread among the latter (57 per cent in 1907, 61 per cent in 1929) than among the former (40 per cent in 1907, none in 1929). A similar trend is noticeable in Britain, where, for those active in the first part of the twentieth century, an apprenticeship was more common among founders and a university education more common for other business leaders.

The early careers of founders were also different from those of other business leaders. Despite the extreme diversity of their business experiences, founders had one point in common in that most of then (over 80 per cent) set up on their own at a very early age. The business career of other business leaders, on the other hand, was made up of successive stages leading to the top of the tree, not all of them within the company they were eventually to lead (Cassis, 1997).

The traditional image of the outsider should thus not be entirely rejected in order to pinpoint the founders of large companies. Most of them did not belong to the business establishment as far as their social and educational backgrounds and early career were concerned. Through their family background, however, they were deeply rooted in the world of business. What was the situation at the end of their career? Not surprisingly, founders of large companies were among the richest people of their time. The only fairly comprehensive data relate to the British and German business leaders active before 1914. They reveal that 52 per cent of founders were millionaires in pounds sterling, a much higher percentage than that of other top businessmen (21 per cent in Britain and 10 per cent in Germany). It could also be noted that 86 per cent of the British and German founders of large companies active before 1914 were worth £400,000 or more, while the poorest on record (Harvey du Cros, the founder of Dunlop) left £42,000 on his death in 1918. Differences between founders and other business leaders are harder to assess for the more recent years. They were probably fairly substantial until the last decade of the twentieth century, as suggested by the estimated wealth of such founders as Lord Hanson (Hanson Trust), Lord Forte (Trusthouse Forte), Otto Bisheim (Metro), Karl and Theo Albrecht (Aldi), Gérard Mulliez (Auchan), or Paul-Louis Halley (Promodès), all with fortunes of £50 million or more in the early 1990s.[6] However, the situation has radically changed since the introduction of new pay packages, in particular stock options, leading the phenomenal enrichment of top salaried managers, first in the United States and, increasingly, in Europe.

The significance of company founders in economic and business development

What has been the contribution of the founders of large companies to business and economic development? The answer will depend on how one values the contribution of big business to the 'wealth of nations'. This role has been firmly established by the Chandlerian school: the new industries of the second industrial revolution could only have developed through large firms, where economies of scale and scope made possible by technological innovation could be achieved, and one does not need to dwell on this point here (Chandler *et al.*, 1997). Two qualifications, however, should be made to this general conclusion. The first concerns the role of small and medium-sized companies, whose importance should in no way be underestimated, as has also been clearly established by the recent literature on the subject. From this perspective, it could be said that creating, during one's lifetime, a large company is probably a greater achievement than creating a small or medium-sized one. However, this is not necessarily the case in terms of contribution to economic development. This is particularly true, and this is the second qualification, as the creation of a large company is not necessarily an act of 'creative destruction'. One obviously thinks of conglomerates and other financial set-ups. Moreover as we have seen, not all new large companies have been the consequence of some kind of innovative process. Throughout the twentieth century, large companies have continued to be created in the traditional industries. Chronological time lags between countries must also be taken into account. The founder of a large company can be an innovator within a national context, while lagging behind the global leader. To take an example from the electrical engineering sector in the early twentieth century, GEC in Britain and CGE in France became truly large companies a full generation after their German counterparts Siemens and AEG. In the same way, giant retail chains emerged in France and Germany a generation later than in Britain. And a gap has already emerged between the United States and Europe in information technologies, where a founder of a European large firm still has to emerge.

In any case, company founders only include a small proportion of the business people who could be considered as entrepreneurs, especially within the world of big business. One possible extension could include those, whether individuals or groups, who gave a new, decisive impetus to the company they were leading. Together with the founders, they could be grouped under what could be called the 'creators'. The notion of creator should be useful for a better understanding of the role of both large firms and entrepreneurs in economic development. Although it will have to be confirmed by empirical research, the two types of creators are likely to form a fairly homogeneous group in terms of socio-economic characteristics, with noticeable differences from other business leaders. It is tempting to describe the creators as 'Schumpeterian entrepreneurs', and other business leaders as 'Cassonian entrepreneurs', that is, those making judgemental decisions under conditions of uncertainty, though Mark Casson's concept is sufficiently flexible to embrace a broad variety of entrepreneurial activities, including the creation of new companies. This makes it even more necessary to establish a proper taxonomy of entrepreneurs, based on the combination of historical evidence and economic theory.

Notes

1. Useful collections of classical writings on the subject can be found in Casson (1990) and Swedberg (2000).
2. For the first part of the twentieth century, two selection criteria have been used: share capital (£2 million before 1914, £3 million in the late 1920s and £5 million in the mid-1950s), and workforce (10,000 for the three benchmark years). For the later years, companies with a turnover of $400 million in 1972 and $2.5 billion in 1989 have been selected (Cassis, 1997).
3. The figures are for 1910 in the case of France.
4. Hugo Stinnes created the Deutsch-Luxemburg concern at the turn of the twentieth century and Friedrich Flick the Mitteldeutsche Stahlwerke during the inflation years; Günther Quandt took control of Accumulatoren Fabrik during the same period. Dudley Docker built the Metropolitan Carriage, Wagon and Finance Company in the early twentieth century and Isidor Ostrer took control of Gaumont in the 1920s (Davenport-Hines, 1984; Chandler, 1990; Cassis, 1997).
5. The following figures are based on the sample of business leaders analysed in Cassis (1997).
6. *Sunday Times Magazine*, 14 April 1991; *Le Nouvel Economiste*, 14 October 1994; *Forbes*, 18 July 1994.

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8

Diaspora Entrepreneurship between History and Theory

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The history of diaspora entrepreneurship is becoming a vibrant area of research.[2] Its intricate nature invites and challenges scholars to combine in their analyses elements from the theories of entrepreneurship and the firm; international business studies; cultural history; and the history of the rise of the world economy and the West. This interdisciplinary case study of diaspora entrepreneurship examines the organizational form of nineteenth-century trading companies (TCs). In spite of their significant contribution to global trade, these international business institutions have attracted little attention among scholars, with the notable exceptions of Chapman (1977, 1985), Casson (1990,1997) and Jones (1996, 2000). In this chapter, through a comparison of Western and Greek diaspora TCs, we strive for a better understanding of the distinguishing features of Greek diaspora business methods. At a more general level our analysis, through the interwining of history with theory, prompts a rethinking of conventional theoretical perspectives and provides insights on how the process of formation of concrete economic organizations is related to entrepreneurship.

The study of economic organization and the study of entrepreneurship constitute two fields of research with surprisingly little cross-reference.[3] Economists working in the former field usually focus on concepts like contracts, transaction costs and agency costs, with little attention paid to the entrepreneurial behaviour that brings about the various organizational forms (Coase, 1937; Hart, 1995; Williamson, 1996). On the other hand, those working in the latter field focus on the propensity of individuals to discover profit opportunities and on the nature of such opportunities, with little attention paid to the organizational mode through which these opportunities are exploited (Knight, 1921; Schumpeter, 1934; Kirzner, 1973). However, when research focuses on specific historical instances, in which both the entrepreneurial behaviour of the relevant actors and the organizational forms that they created need to be explained, this intellectual division of labour between the fields of entrepreneurship and economic organization must be challenged.

To this end, we propose a conceptual framework for the analysis of the process through which the implementation of an entrepreneurial idea leads to the establishment of concrete forms of business organization. We argue that the mode in which entrepreneurial behaviour is exercised and, especially, the mode in which knowledge of new entrepreneurial opportunities is acquired and managed will have important and profound implications for the organizational forms that will emerge. We draw insights from two streams of literature: first, from Austrian economics, which views entrepreneurship foremost as a discovery of new knowledge in the form of fresh profit opportunities; and second, from the resource-based view of the firm, and especially the strand that puts emphasis on the acquisition and management of knowledge resources. Therefore, our analysis, which is firmly based on the concepts of entrepreneurship and learning, offers an alternative to the 'contractual' approach to economic organization which draws from transaction costs economics, incomplete contracts and agency theory.

As noted above, the historical example we concentrate on is nineteenth-century trading companies and especially those of the Greek diaspora of the Black Sea. These entities pose a challenge to the conventional theories of economic organization because although some of them grew to enormous size and degree of diversification, they never made the transition to the corporate formula, always retaining the character of family-based partnerships. However, while this is true of all nineteenth-century TCs, those of the Greek diaspora seem to have been even less hierarchical, even more volatile organizationally and even less dependent on direct family relationships than the general case. Therefore, the major questions posed in this chapter are: why did TCs not adopt the corporate formula? And how can the difference between Western and Greek Diaspora TCs be explained?

The nineteenth-century trading company: the historical evidence

Western–British trading companies

In the nineteenth century, and particularly in the last four or five decades before the First World War, there was a large expansion in the size and significance of international business. Specifically, in the realm of long-distance trade there was a proliferation of merchant enterprise. The activities of some individual merchants evolved, from the individual level, into large TCs. These business organizations had a multinational scale and were important actors in nineteenth-century globalization.[4] British TCs had an important presence among Western trading companies.[5] Throughout the nineteenth century British TCs usually took the shape of family partnerships. Even in the 1920s in the major British TCs, family control remained strong and there was a continual preference for private companies and partnerships. British TCs – regardless of whether they operated in Asia, Latin America or, for example Russia – conducted business abroad on the basis of interlocking partnerships or directorships, consortia or joint ventures, and network-based strategic alliances.

How can the theory of the firm enhance our understanding of Western TCs as a form of business organization? Ever since Coase's (1937) contribution, theories of the firm start from one fundamental question: under what circumstances do resource owners choose to abandon the freedom to trade their resources in the open market and to assign their use to an entrepreneur-organizer? Williamson (1975) described the dilemma succinctly by referring to it as a choice between markets and hierarchies. More recent work (Williamson, 1996) has focused on a wide array of intermediate organizational forms, rather than just on the polar forms he had originally introduced. On these grounds, we can think of business organization as a continuum between the two poles. On the one pole we have the individual entrepreneur, a person who does business employing no human or non-human resources other than their own. On the other pole, we have the Chandlerian corporation, defined as corporate ownership of non-human assets and long-term employment contracts of human assets. In between we have a multitude of intermediate forms. Figure 8.1 depicts graphically this continuum. Notice that we

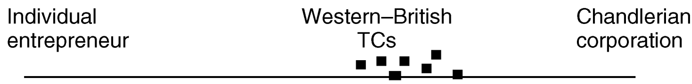

Figure 8.1 The position of Western–British TCs in the organizational continuum

have placed nineteenth-century Western–British TCs in an intermediate position with regard to the two poles of the continuum.

Contractual theories of economic organization usually assume that efficient governance of vertically integrated relations[6] and size – defined as the volume of resources required for the production of a specific output[7] – are the major determinants of the position in the continuum that a specific type of concern will occupy. On these grounds, we should expect to find that nineteenth-century TCs were of moderate size, of moderate degree of integration and of low hierarchy. And yet, as already mentioned, this is not borne out by the historical facts.

Indeed, TCs grew to enormous size and were not only intermediaries in trade. Especially from the 1870s onwards, as the British case aptly demonstrates, many diversified into other services, such as banking and transportation, and into production, such as manufacturing and agriculture, leading to their evolution to investment groups or hubs (Jones, 2000). These latter formations provided concentrations of information, contacts, capital and personnel, thereby allowing the traditional family-based TC to acquire many of the advantages of the joint-stock system without losing control. A TC organized as a partnership often would act as the parent organization of the investment group, 'but its real economic strength would be concealed from the public'. The firms in which it would have a stake – some of which were joint-stock companies – were, as Chapman (1985, 231) observes,

> often registered abroad and run by junior partners or managers there, sometimes under quite different names and local legislation. It was a device that developed from various starting points to maintain effective economic power in a few hands, but its very size and diversity made it much more than a family business in the accepted sense.

Chapman's quote captures the essence of TCs as business organizations. On the one hand, and superficially, these entities seem to display only a minimum degree of hierarchy. Although they were characterized by a high degree of vertical integration of activities – usually taking the form of many consecutive stages, for example agents in the Russian hinterland, agents in Western European transit ports and large urban centres, and so on – each activity was carried out by an independent organization, a partnership in most cases, where each unit enjoyed great leeway in its business dealings. On the other hand, however, hierarchy was ever present, as illustrated by Chapman's reference to the concentration of 'effective economic power in a few hands'. These partnerships were based on networks of business associates, which, however, were intentionally created – and, thus, closely monitored – networks, usually linking together family concerns.

Therefore, as the British case portrays, Western nineteenth-century TCs never made the transition to hierarchical corporations of the Chandlerian type, in spite of the fact that some of them grew to an enormous size and developed a high extent of vertical integration and of diversification, and a considerable – albeit informal – hierarchy.[8] On the other hand, the fact that they never transcended the status of private–family partnerships meant that their continuity was greatly impaired, as evidenced by their high mortality rate. The partnerships lasted with the expiry of time or of the partners themselves.[9] Another factor responsible for the high mortality rates were the sharp fluctuations in trade as communications were uncertain. So why did the TCs never make the transition to the corporate formula?

The literature on TCs tends to explain this puzzle on the basis of the transaction costs arising from the ubiquitous possibility of post-contractual opportunism that flourished because of the uncertainty and volatility of long-distance trade in the nineteenth century. In such difficult business conditions, family-based networks built on trust among partners are thought to have supplied the most effective governance structure for curbing transaction and agency costs (Casson, 1997, ch. 4). As Jones (2000, 6, 43) observes, TCs reduced for both sellers and buyers 'search, negotiation, transaction and information costs through their specialist knowledge of markets and business environments'.[10] According to this line of thought, given the unpredictable and volatile environment characterizing nineteenth-century trade, TCs in most cases opted not for formal bureaucratic hierarchical methods as a solution to principal-agent problems, but for an amorphous loose organization wherein much of the decision-making was located at the local level and not in a single corporate centre. Indeed British TCs recruited 'staff with right character and background with life long employment, who could be trusted to function honestly and in accordance with the enterprise's general policy even without constant bureaucratic supervision. Head offices retained a monitoring role by deciding on such matters as individual salary levels... vetting prospective wives and congratulating or admonishing individual performance' (Jones 1996, 161–2, 2000, 30–5, and Casson, 1994).

In sum, on the basis of the evidence on nineteenth-century British TCs it can be argued that Western TCs were organized more as networks or investment groups and less as hierarchical firms with 'firm' boundaries.

Greek diaspora trading companies of the Russian Black Sea region

The large Greek diaspora TCs[11] of the Black Sea were in the majority founded *c.* 1819–30.[12] They held a prominent position in the Russian grain trade, at a time when this staple was the most important export item of Russia, accounting for a quarter to a third of the world wheat trade. As was the case with Greek diaspora TCs in general, those of the Black Sea displayed the characteristics of Western–British TCs discussed above (Pepelasis Minoglou, 2005). They were organized as family-based partnerships; had an extensive network of international and local branches; were highly diversified; and formed network-based strategic alliances. Nevertheless, a close examination of the four largest Greek diaspora TCs of the Black Sea reveals that the Greek diaspora TC tended to be even less hierarchical, even more volatile organizationally and even less dependent on direct family relationships than the general case of Western TCs.[13]

The foremost characteristic of the nineteenth-century large Greek diaspora TC of the Black Sea, differentiating it from its Western counterpart, was that it was embedded in a larger whole. It was an integral part of the international Greek mercantile diaspora which spread from the Black Sea and the Danube, ran throughout the Mediterranean and reached up to Northern Europe and Britain.[14] Within this international maritime diaspora, there was a high degree of homogeneity. Greek diaspora merchants and their TCs, regardless of whether the headquarters of their operations were in the West, the Ottoman Empire, Russia or other Eastern areas, had adopted by the 1820s a uniform style of business organization and strategy which has been described as the 'Chiot Method'.[15] The core group of the international Greek diaspora were merchants who originated from the island of Chios, an important exporter of mastic and silk. An indication of their preeminence is that in the Black Sea three out of four of the leading Greek TCs were Chiot (Harlaftis, 1990, 1993, 1996, 2005; Pepelasis Minoglou, 1998, 2005). The study of the Greek TCs of the Black Sea reveals the following features of the 'Chiot Method' that, at the same time, marked the distinctiveness of the Greek diaspora TC *vis-à-vis* Western TCs.

First, although Greek diaspora merchants had family members at the heart of their TCs, they also included other members of the international maritime Greek diaspora as partners and agents, thereby taking advantage of the high-intensity trust relations among the wider Greek diaspora (as is explained in more detail below).

Second, Greek diaspora merchants, while belonging to a specific TC, maintained in parallel a privateer entrepreneurial status. They would usually be in partnership with the TC for only part of their activities; each merchant partner also pursuing 'outside' renewable, short-term activities and collaborations. As a consequence, Greek diaspora merchants usually tended to set up a specific *ad hoc* organization – with the formal or informal partnership form being the preferable mode – for every specific entrepreneurial venture they were to pursue (Kardasis, 1998, 235–6; Syngros, 1998). What made this possible was the operation within the international Greek diaspora of a 'Traders' Coalition' – a peer group of traders – organized on the principles of trust, reciprocity and mutual assistance. The term 'Traders' Coalition' was first coined by Avner Greif (1989) in his work on eleventh-century Magribi traders. In his own words the Traders' Coalition is described as 'an economic institution in which expectations, implicit contractual relations, and a specific information-transmission mechanism supported the operation of a reputation mechanism' Greif, (1993, 525). In the Greek diaspora case, indirect references have been made to the Coalition over the years (Chapman, 1977, 1995; Harlaftis, 1996, 2005). However, the formal application of the term is quite recent (Pepelasis Minoglou, 1998).

The Traders' Coalition provided to its members the exchange of exclusive market information, for example regarding the activities of its members or other Greek or foreign merchants, and the prices of goods and foreign exchange. Moreover, it acted as a pool from which prospective 'trustworthy' business collaborators could be drawn. In a closed circuit where everyone knew everyone else, the most valuable asset of a merchant was their reputation. Within the Coalition, the operation of a reputation mechanism, by establishing *ex ante* a linkage between past conduct and a future utility stream, ensured the proper conduct of the agents of the Greek diaspora TC, as well as honesty and promptness in commercial dealings among member traders.[16]

It was assumed that all members of the Coalition would keep their capital working all the time, the aim being horizontal expansion and diversification of their activities. Both of these forms of growth were based on the premise that the trader would internalize transaction costs by taking advantage of the cost-reducing services supplied by the group. Of course, it was also taken for granted that when a merchant faced a crisis, his peers would provide assistance (Fairlie, 1959; Kardasis, 1998, 136).

By organizing agency relations through the Traders' Coalition, the Greek merchant was able to overcome the problems of limited contract enforceability and asymmetric information associated with long-distance trade. In comparison to Western TCs, engaged in the long-distance reciprocal trade between East and West, the Greek diaspora TC displayed a competitive edge. It did not rely on outsider agents as was the case with Western TCs.Instead, it established its own agents along the trade route: the local producing hinterland; depot centres; and large western ports – consumption centres. The Greek diaspora TC, by penetrating the market at both ends, was able to reduce the cost of trade and attain efficiency gains. Through the existence of agents in the production areas, it was able to take advantage of the peasantry's need for cash by pre-purchasing crops and providing usurious loans (Stoianovich, 1992, 324, 334; Kardasis, 1998, 130; Selekou, 2004, 46).

Let us now turn to the issue of organization. Not only did the Greek diaspora TC operate within the coalition, it copied it. Namely, it was a coalition in itself, thus displaying a rather limited degree of hierarchy. Far removed from the rigid structure of a proper firm, the Greek diaspora TC took the guise of a hybrid. It appeared more like a loose amorphous entity, with constantly shifting *ad hoc* collaborations and partnerships. A closer look at the major organizational features of the diaspora TCs reveals the following.

First, the interrelationship among branches took various shapes. Either – as was the usual case with Western TCs – one of the international branches of the TC acted as the head office, as, for example, was the case with Ralli Bros. Or, there was no head office and the international branches were equal associates, legally autonomous yet simultaneously interdependent, because each 'branch' would act as an agent for the other branches. Such an example was the Rodocanachi TC. Each of its international 'branches' had expanding autonomous entrepreneurial interests and a different name, indicating the variety of alliances involved.[17]

Over time, there were shifts in the balance of power and realignments among the international branches. This was particularly obvious during times of crisis. For example, when during the Crimean War the top Greek merchants of Odessa lost their leading position in the city's grain trade, in some instances the London 'branches' of Greek diaspora TCs lost their interest in their Russian counterparts, while the Odessa-based Greek TCs shifted the focus of their operations towards the Sea of Azov area.[18]

However, even in the cases where an exogenous shock was not involved, there was fluidity. An ex-international branch might cut itself off from the parent TC (as was, for example, the case with the Rodocanachi branch in Marseille) or it might evolve into a headquarters. Indeed, in the case of Ralli Bros, the central headquarters were originally in Marseille, but then the London branch became the headquarters in 1827, and the Marseille 'mother company' was transformed into a branch (Kardasis, 1998, 207–26; Harlaftis, 2005).

Moving to the local level, branches were not always 'formal' entities, these often being a partial or exclusive preference for renewable *ad hoc* short-term and shifting alliances with outsider consignees, who were either relatives or other members of the Traders' Coalition. Notably, in one specific port it was not unusual that a TC would have simultaneously a formal branch and jointly with another Greek TC have an informal branch or representative. For example, in 1886 in Taganrog the Scaramanga TC had a formal branch by the name A. Scaramanga, coexisting with two partnerships formed with other diaspora merchant interests: Manoussis and Scaramanga and J. Scanavi and Scaramanga (Pepelasis Minoglou, 1998, 89; Harlaftis, 2005).

Second, as the Greek diaspora TC expanded, its borders would become more permeable. The number of local and international branches increased. In parallel, a web of opportunistic 'external' collaborations was formed with other TCs and individual merchants – based in the Black Sea or even elsewhere – all of whom belonged to the Traders' Coalition.These external collaborations took various forms. They ranged from short-term informal commenda[19] like deals to the participation in formal limited liability partnerships; or even more rarely the creation of *sociétés anonymes* – joint-stock companies. A pattern was for 'antagonist' merchants, wishing to keep an eye on one another, to seek collaboration either by setting up a joint venture or by participating as secret partners in the other's limited liability firm(s). Often also, established merchants wishing 'without risk' to finance promising newcomers, would participate as secret partners in the limited liability firms of the latter. Finally, it was common practice for two established and independent Greek diapsora TCs to be over a long period in a state of 'permanently' shifting informal and formal collaborations with one another, as the collaboration between the Ralli and Petrokokkino TCs on the one hand, and the Ralli and Scaramanga TCs on the other, aptly portray. Overall, a unifying thread running through all the above forms of external collaborations was their short-term *ad hoc* and clannish character (Pepelasis Minoglou, 1998, 79, 2002; Syngros, 1998, Vols 1 and 2; Vourkatioti, 1999, 120).

With expansion came diversification. Often, investments in areas outside the core interests of the TC were undertaken as joint ventures with relatives or other Coalition members. Thus, the Greek TC would start off usually from the long-distance trade in grain, or some other bulk staple commodity, but would eventually aggressively diversify into banking, insurance, shipping, railways, farming, light and heavy industry, and urban real estate. By aggressively, we mean before a fall in profits in the core sector. Again, we would like to note the examples of the Bernadaki, Kouppa, Marazli, Ralli, Rodocanachi, Petrokokkino, Scaramanga and Vagliano TCs, most of which through diversification and external collaborations extended their business interests even outside the Black Sea area and outside Russia (Pavlides, 1953; Herlihy, 1979–80; Hadziiossif, 1980; Yiannitsi, 1995; Pepelasis Minoglou and Louri, 1997, 78–82, 91–2; Pepelasis Minoglou 1998, 92–103; Voukatioti, 1999, 127; Katsiardi-Hering, 2003, 477–81; Harlaftis, 2004).

Third, the Greek diaspora TC allowed – as has been already noted – the partners and the directors of the branches to have activities in parallel outside the company. In addition, if a clerk proved capable, he would be allowed to do small commercial dealings – for his own benefit – with other clerks or agents of the TC or even with independent entrepreneurs. These business activities, which were often based on oral contracts, usually had a short-term scope such as the joint financing of a grain cargo with a shipowner, or the chartering of ships, or the provision of sea loans. The TC would even lend to its clerks funds on a free-interest basis so as to facilitate them in these 'outside activities'. A further indication of the low degree of hierarchy of the Greek diaspora TC- is that a salaried agent could be a partner with the so-called 'Father', the head of the TC, in a short-term venture outside the main core of the business, or could become partners with their old bosses, setting up together a new TC (Kremmydas, 1996, 81, 4; Kardasis, 1998, 121, 213–15).

Fourth, there was also one more difference between diaspora and Western TCs of the Black Sea. At this point it is not clear how it should be interpreted. It is that the average life of the Greek TC was around 80 years.[20] This feature is remarkable considering that the norm among other TCs in nineteenth-century Russia was a high mortality rate and short lifespan (Thompstone, 1992). Was the longevity of Greek diaspora TCs perhaps connected to their greater fluidity and constantly changing shape? Perhaps yes.

In conclusion, the 'trading empires' of the most successful Greek diaspora merchants took the shape of agglomerations of a variety of organizations, at the centre of which stood the original TC which remained throughout organized as a partnership. Ample examples of the strategy of Greek merchants to set up an *ad hoc* organization for each entrepreneurial venture they pursued are found among the 'big four' Greek diaspora TCs of the Black Sea (the Ralli, Rodocanachi, Scaramanga and Vagliano TCs) and others. Let it be underlined once again, that Greek TCs, instead of being embedded in networks based primarily on intra- or inter-family ties, as was the case with Western TCs, were integrated in a wider peer group: the Traders' Coalition. A more amorphous organization, the Greek diaspora TC was more dependent on new *ad hoc* partnerships which were often informal and perhaps there was a less obvious hierarchy regarding the position of the core TC in the investment groups that evolved.

Table 8.1 Stylized historical facts of Western–British and Greek diaspora TCs

1. These entities never made the transition from family-based partnerships to the corporate form of business organization.
2. It was usually the case that each entrepreneurial venture would be pursued through the establishment of a new *ad hoc* partnership, which was dedicated to the implementation of the specific project. We have seen that this was even truer in the case of Greek diaspora than in Western–British TCs.
3. The degree of hierarchy in these ventures was low, which was, again, especially true in the case of Greek TCs.
4. Although the family element was very strong, in the case of Greek TCs it appears that it was supplemented by the high-intensity trust relationships which were maintained in the context of the peer group we have described as the Traders' Coalition.
5. In the context of nineteenth-century long-distance trade, where it was common for the partners to be geographically dispersed and given the difficulty of communications, the significance of the new knowledge that an entrepreneur would acquire was great. Therefore, the venture's constituents would acquire new (entrepreneurial) knowledge – that is, they would discover new profit opportunities – during the venture's operation.

Table 8.1 briefly sums up some stylized facts that our historical account of nineteenth-century Western–British and Greek diaspora TCs of the Black Sea has revealed. These stylized facts and the differences between the Western–British and the Greek diaspora case are also reflected in Figure 8.2.

We can now turn to the construction of our theoretical framework. This is followed by a discussion of whether it explains why TCs did not adopt the corporate formula and the reasons for the distance in the dispersions of Greek and British TCs in Figure 8.2.

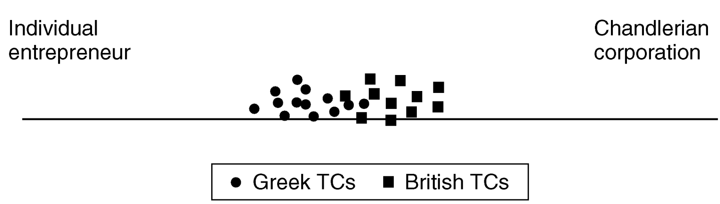

Figure 8.2 The position of Greek versus British TCs on the organizational continuum

Towards a theoretical perspective linking entrepreneurship to concrete forms of business organization

As already mentioned, the theoretical literatures on economic organization and entrepreneurship have evolved mostly in parallel, with surprisingly little cross-reference. In this section we attempt to put forth a conceptual framework constructed from elements of both perspectives, which is based on two important strands of these two 'separate' literatures.[21] As we want to begin our analysis from the actions of individual entrepreneurs, the first strand is the Austrian theory that describes entrepreneurship as an activity that aims at the acquisition of new knowledge, as this has been developed by Israel Kirzner. The second strand is the resource-based view of the firm and especially the parts of it that lay emphasis on knowledge resources.

In our synthesis of these two strands of the literature we attempt to outline the process of transformation of entrepreneurial ideas into multi-person organizations. Our proposed conceptual framework delineates the conditions under which the formation of a corporate firm is more likely to be realized than that of a partnership-type economic organization. Our main conclusion is that it may be possible to establish a connection between the type of entrepreneurial discovery and 'new learning' (involved in the implementation of entrepreneurial ideas) on the one hand and the ensuing governance structure.

Kirzner on uncertainty and pure entrepreneurship

Israel Kirzner describes the market as an incessant process, continuously driven by the actions of agents. This introduces *ignorance* as the perennial condition that all agents face. Agents cannot know the entire current constellation of relative prices, so they inevitably commit *errors*,[22] that is, they miss trading opportunities. In turn, these errors reflect profit opportunities that other agents may perceive and attempt to exploit. Kirzner maintains that to act entrepreneurially is to be *alert* to the discovery of profit opportunities. Let us stress here the centrality of the concept of *knowledge* in Kirzner's account of entrepreneurship. Indeed, entrepreneurial action is described as, first and foremost, an instance in which the agent obtains knowledge of something that they were not aware of before. Thus, the notion of discovery describes the active seeking of new knowledge.

Of course, the discovery of a profit opportunity is inexorably linked with action aiming to exploit it. But that does not mean that the relation between entrepreneurial discovery and implementation is entirely symmetrical. In Kirzner's schema, it is the discovery instance that has temporal, causal and conceptual priority. This idea, together with the centrality of the concept of knowledge for Kirzner's theory, has crucial implications for a theory of economic organization. For, to the extent that an entrepreneurial discovery has to be implemented by a multi-person organization, the knowledge of the initial discovery and of the necessary actions for its implementation has to be somehow transferred from the entrepreneur to other persons. The problem that this raises is what Conner and Prahalad (1996, 478) have defined as the 'knowledge-substitution' effect of the organizational mode, namely 'how the parties' existing knowledge is blended and used'.[23]

The primacy of the notions of discovery and alertness implies that entrepreneurship is entirely unrelated to factor ownership. First of all, the perception of market errors is logically an entirely cognitive phenomenon that does not require the expenditure of any resources.[24] However, according to Kirzner, although an entrepreneur need not be a capitalist, a capitalist cannot but be an entrepreneur (Kirzner, 1979, 97; Ricketts, 1992). Imagine, Kirzner says, that an individual discovers a profit opportunity, which requires resources they do not initially possess. What they must do is convince a capitalist to lend them the capital required. However, this entails a transaction cost; as Kirzner observes, that is 'the cost of securing recognition for one's entrepreneurial judgment and personal integrity' (Kirzner, 1979, 101). In his view, the existence of this cost will lead the potential entrepreneur and the capitalist to jointly assume the entrepreneurship involved in the former's discovery, and to jointly reap the profit. In fact, he argues that this is precisely what happens in the framework of the modern corporation, where the shareholders hire would-be entrepreneurs as corporate executives.

From the individual entrepreneur to multi-person organization

Kirzner's distinction between the functions of pure entrepreneurs and capitalist entrepreneurs offers an interesting platform on which we may attempt to extend the notion of entrepreneurship towards the analysis of the multi-person organization. We begin by describing entrepreneurial action as involving two distinct processes: the *discovery* and the *implementation* of an entrepreneurial idea. Assume that the agent who initially discovers the profit opportunity does not possess the resources required for the implementation of their idea. How are these resources to be obtained? Since we have assumed that the entrepreneur is propertyless, the entrepreneurial discovery and the relative profit will have to be shared between the entrepreneur (E) and those resource owners – let us refer to them collectively as the 'capitalist' (C) – who now share the entrepreneurial role. The sharing of the entrepreneurial role now implies that a multi-person organization has been created. For even if no human resources are employed in this venture the organization still consists of at least two persons (agents E and C).

But what is the nature of this organization? Notice that, so far, we have refrained from describing this organization as a firm. This choice of language implies that there are specific reasons why this organization is not a firm. First of all, the fact that discovery has the character of a price discrepancy between inputs and outputs implies that entrepreneurial action is an activity that is, in a sense, self-defeating. The mere exploitation of an entrepreneurial discovery will attract competitors, so that the profit obtainable from it will disappear in the long run. Thus the organization that is set up in order to exploit such an opportunity remains in existence for as long as entrepreneurial profits are realized, but it is bound to be dissolved as soon as they disappear, as will inevitably be the case.

The second reason is that, as far as the relation between agents E and C is concerned, the arrangement lacks the major characteristic of a firm-like organization: the fact that the latter constitutes a hierarchical employment relation. As Williamson (1994, 324) maintains, 'the main instrument to which firms have access that markets do not is fiat . . . The exercise of fiat through hierarchy is . . . a very conscious, deliberate, and purposeful way of accomplishing coordination.' Clearly, the relation between agents E and C is not hierarchical. Therefore, in the terms of Conner and Prahalad that we have already referred to, the 'knowledge-substitution' effect is operating through a market contract – that is, the negotiation between the entrepreneur and the capitalist in Kirzner's schema – rather than through an employment relation (Conner and Prahalad, 1996).

Therefore, this organization looks more like a temporary partnership than a hierarchical firm.[25] What is crucial here is the restricted time horizon of the arrangement that follows from the fact that it is set up to take advantage of a specific profit opportunity.[26] Obviously, what we are describing here as a temporary partnership is in legal historical terms the per se partnership form of business, which was so typical of most businesses in the early nineteenth century (Lamoreaux, 1998, 66–71).

Time and the 'knowledge-flexibility' effect

Assume now that the productive organization we have described so far has indeed the form of a partnership. Consider how the situation changes with time. As we have stressed that knowledge constitutes the core element of entrepreneurial action, it is obvious that the major change is that agents E and C acquire new knowledge. The acquisition of new knowledge brings to the fore the problem that Conner and Prahalad describe as the 'knowledge-flexibility' effect of the organizational mode, that is, the issue of the way that organizational mode impacts on which party's knowledge will be guiding future joint action. According to Conner and Prahalad (1996, 486):

> the flexibility effect accounts for the relative costs . . . of altering the parties' duties and responsibilities on an ongoing basis, in order to incorporate learning or unexpected opportunities arising during the course of the work. The flexibility effect thus concerns the dynamics of future knowledge acquisition and application, and response to new, internal or external developments.

It is useful to categorize the new knowledge that agents E and C acquire during the venture's operation into two broad classes. The first comprises new entrepreneurial knowledge that agents acquire individually 'outside', as it were, of the organization. The second class comprises organization-specific knowledge, as joint operation in the context of the organization gives rise to positive externalities.[27]

The latter type of knowledge exercises a cohesive force, as it gives an incentive to the partners to keep operating jointly. Therefore, in the framework we have developed so far, this force tends to keep agents E and C working together. However, imagine what will happen should the new knowledge now acquired by any of the

E or C agents have the character of a new entrepreneurial discovery. In principle, this would mean that the resources required for implementation may now be different, thus the implementation of the new discovery may involve an entirely new venture. The party that discovers the new profit opportunity must now negotiate anew with the owners of the resources that are necessary for implementation – who may be different from that party's current partners – in order to persuade them to join. The important thing to note is that the pursuit of a new entrepreneurial discovery will lead to the formation of a new organization which may be entirely unrelated to the previous one. Put very simply, this is inevitably the case because knowledge flexibility has to be negotiated each time anew, through a market transaction between independent entities rather than entities being related through an employment contract.

Compare this with the way that knowledge flexibility would be implemented in the case that our organization did not represent a partnership but had rather the character of a hierarchical firm. In this case the non-human resources of the organization would be merged into a single unit of ownership while the human resources would be subject to the direction of a single employer. In that context, knowledge flexibility would be effected through the operation of a line of commands through which the employer would induce the employees to act in a way that is consistent with the new knowledge that the employer has acquired.

Our analysis can be, therefore, summed up in two propositions:

Proposition 1: The formation of a hierarchical firm – defined as corporate ownership of non-human assets and long-term employment contracts of human assets – is less likely the more specific and unchanging over time is the entrepreneurial project that is being pursued. In such circumstances, the knowledge-substitution problem is solved once and for all by the original contract setting up the organization as a loose partnership among autonomous entities. By contrast, when the entrepreneurial discovery is less clear or is initially perceived as changeable over time, corporate organization may be essential, in order to avoid the constant renegotiation among the partners, through which knowledge-substitution can be effected.

Proposition 2: The formation of a corporate firm is less likely when the human constituents of the entrepreneurial venture do not obtain new knowledge during the venture's operation. In this case the knowledge-flexibility problem is obviously non-existent. Conversely, a corporate firm-like organization is more likely when the venture's constituents obtain new knowledge during the production process. Again, in this case the effective solution to the knowledge-flexibility problem would require the constant renegotiation of the contract setting up the organization.

Aligning theoretical insights with historical evidence

Our discussion is grounded on the two propositions that we deduced from our conceptual framework above, and to the stylized facts our historical account of nineteenth-century TCs, and especially of the TCs of the Greek diaspora of the Russian Black Sea, has revealed (see again Table 8.1 above).

Let us here have a closer look at items 2 and 5 listed in Table 8.1. Regarding item 2, let it be underlined here that in the language we have used in our Proposition 1, each entrepreneurial project was perceived as specific and unchanging over time. Regarding item 5, in the language we have used in our Proposition 2, the venture's constituents would acquire new (entrepreneurial) knowledge – that is, they would discover new profit opportunities – during the venture's operation.

In terms of our Proposition 1, items 1 and 3 in Table 8.1 seem to be easily explained by item 2: the fact that agents perceive every specific entrepreneurial opportunity as a unique event prompts them to set up organizations aiming to exploit the specific opportunity every time, rather than corporate firms that have to be based on the assumption of an indefinite duration of the partnership and the pursuit of ever new entrepreneurial opportunities by the same group of agents. In effect, this arrangement tends to collapse the problem of 'knowledge-flexibility' to that of 'knowledge-substitution', since the question of which party's knowledge will be guiding joint action in the future is not even posed. For it is taken for granted that any future contingency will not be dealt with through altering the parties' duties but through the negotiation and setting up of a new partnership with potentially different partners from those comprising the original group. Obviously, in such a context, knowledge-substitution – in the form of a new entrepreneurial discovery – guides the negotiation among the parties that will cooperate in the pursuit of the specific opportunity.

However, this does not yet explain why, in the first place, agents perceive every entrepreneurial opportunity as a unique event. The literature on nineteenth-century Western and British TCs tends to explain this on the basis of the high transaction costs and agency costs that the establishment of a corporate firm would entail. Both sets of costs are assumed to arise from the potential for opportunistic behaviour, which is greatly aggravated by the uncertainty of the business environment and by the difficulty of communication that characterized nineteenth-century long-distance trade. As valuable as these considerations may be, the framework we have developed earlier in the chapter regarding Greek diaspora TCs suggests that they may not be sufficient to explain the phenomenon. For the savings in transaction and agency costs must be weighed against the costs of negotiating a new contract for every specific entrepreneurial venture that the agents want to pursue. It is precisely these negotiation costs that Kirzner (1979, 97) refers to in his description of the relation between pure entrepreneurs and capitalist-entrepreneurs.

In fact, these negotiation costs can indeed be assumed to have been rather low in the case of Greek diaspora TCs, as indicated by item 4 in Table 8.1. There are two reasons for this. First, the choice of partners was facilitated by the reputation mechanism that operated in the context of the peer group from which partners were chosen. One's current reputation, and the need to preserve it in the future, meant that the risk of post-contractual opportunism was significantly reduced. Second, the fact that the peer group consisted mostly of merchants who already had extensive business experience meant that the cost of knowledge-substitution – which in this context meant the transfer of an entrepreneurial discovery – was considerably lower than if knowledge-substitution were to be effected through a market transaction between anonymous traders.

Of course, the cost-reducing effects of networks, which arise from the high-intensity trust relations among the members, have often been discussed in the literature (Casson, 1997, ch. 4). However, our framework allows us to take the analysis a step further, as it prompts us to recognize the relation between the characteristics of the network and the organizational forms that agents will opt for. Networks based primarily on intra- or inter-family ties will necessarily be less extensive than peer groups characterized by high-intensity trust relations. Provided that membership in the latter is based on an intensive screening process – as was the case in the Greek Traders' Coalition with the Chiots at its core – the pool of prospective partners that an agent may choose from is much wider than in the former case. In terms of organizational mode, we would expect the former type of network to give rise to relatively more hierarchical forms of governance and less specific organizational forms (in the language of our Proposition 1) compared to the latter. This is indeed what items 2, 3 and 4, in Table 8.1, seem to point to.

While the above considerations point towards a preliminary explanation of why nineteenth-century TCs never made the transition to the corporate formula, note that we have not yet referred to item 5 in Table 8.1, and to our Proposition 2, which are of course interrelated as they both refer to the new (entrepreneurial) knowledge that the agents acquire during the venture's operation. Given item 5, which stresses that the significance of the new knowledge that an entrepreneur would acquire was great, and on the grounds of our Proposition 2, we would expect a strong tendency towards the corporate form.

Recall that the core concept in Proposition 2 was the problem of 'knowledge-flexibility'. In a partnership of peers, each partner lacks the means to induce the other partners to change their behaviour to make it consistent with the new knowledge that the former has acquired. Therefore, a firm-like (corporate) organization is better suited to deal with the problem of knowledge-flexibility, as the employment relation provides to the employer the means to induce a change in the behaviour of employees. However, the problem is further aggravated when the new knowledge has the character of a new entrepreneurial discovery.[28] In a partnership of peers, a partner's entrepreneurial discovery provides an incentive to 'go it alone' – or, more precisely, in partnership with a group of agents that may be different from the original one. Again, corporate organization would be a better means for securing to the group of partners proprietary access to new entrepreneurial knowledge. So why did the transition to the corporate form not happen in the historical context of nineteenth-century TCs?

We argue that, once more, the answer must be sought in the network relations in which business activity was embedded. This is much more obvious in family-based networks, where it is taken for granted that every new entrepreneurial discovery will be exploited for the benefit of the family. Of course, things are not so straightforward in the case of more extensive peer group networks. However, the evidence from the Greek diaspora TCs of the Russian Black Sea suggests that the difference may not be that great. Items 2, 3 and 4 are again relevant here. What these items suggest is a picture of constantly shifting collaborations, for which partners were always chosen from the members of the peer group. The latter part of the previous sentence is the important element here. It suggests that new entrepreneurial knowledge would, as it were, *stay within* the network. There were two reasons for this. First, the closed nature of the peer group meant that new entrepreneurial discoveries would be revealed to all participants much easier and faster than if the revelation were to take place through the market system at large. Second, membership of the peer group ensured that every specific merchant would be constantly participating in various ventures, thus reducing the risk of 'losing out' to peers in the long run.

Let us sum up our discussion in this section. We believe that our historical evidence supports the idea that entrepreneurial ventures tended to be perceived, in the context of nineteenth-century TCs, as specific projects which were to be pursued through *ad hoc* partnerships. This is indeed consistent with our theoretical schema, which predicts that in such circumstances the tendency towards the corporate form would be very weak. Furthermore, our framework also offers some interesting insights, for it prompts students of networks, and especially of those that have the character of wider peer groups, to delve deeper into the ways in which such networks deal with the problem of new entrepreneurial learning and affect the choice of governance structure. To recapitulate, our analysis suggests that within wider clannish networks – as opposed to family-based networks – agents will opt for even less hierarchical forms of business organizations (and not corporate governance) as a means for securing proprietary access to new knowledge.

Notes

1. We wish to dedicate this piece to the memory of Elly-Eleni Pepelasis.
2. In the last few years within the context of historical studies on trading diasporas, ethnic entrepreneurship and diaspora economics there has

been a boom in the study of various facets of diaspora entrepreneurship. See, for example, Brenner and Kiefer (1981), Light and Gold (2000), Waldinger *et al.* (2000), Schrover (2001), Baghdiantz McCabe *et al.*, (2005).

3. Mark Casson being a notable exception (see Casson and Godley in this volume).
4. The term 'TC' is more or less a recent term. Nineteenth-century contemporaries used a variety of terms to describe TCs interchangeably, such as merchants, agency house and managing agency. For a definition of the TC in the literature see Jones (2000, 13–14).
5. By British meaning that the headquarters of these TCs were in Britain and that they were usually run by British merchants, although in some instances they were run by Anglo-German, or Jewish or even Greek merchants (Chapman, 1985, 230–51).
6. See Williamson (1981).
7. Demsetz and Lehn (1985) is a good example here.
8. Indeed, in connection with the last point recent research suggests that the more successful British TCs from the 1830s onwards were those that were more hierarchical in structure (Webster, 2003).
9. There is the example of Hills & Whishaw in St Petersburg. This firm was one of the leading grain exporters in St Petersburg in the 1870s. However, in 1879 the will of a deceased senior partner reduced the capital of the firm and in 1882 the firm failed (Thompstone, 1992, 114–16).
10. See also Casson (1997, 1999, 77–121).
11. Although we use here the term Greek diaspora trading company, we are basically describing a trading/merchant house, in that as a form of multi-person organization, the Greek diaspora TC was more amorphous and less hierarchical compared to the Western TC.
12. By Black Sea Region we also include the Sea of Azov. Some important Greek diaspora TCs of the Black Sea region were founded earlier, such as, for example, Avierino (1803), Papoudov (1810) and Synadino (1811) (Kardasis 1998, 208).
13. For the more hierarchical nature of the British TCs – which we argue here differed from the loose organization of Greek diaspora TCs – see again Webster (2003).
14. An indication of the integration of the Greek diaspora TC of the Black Sea in the wider international Greek diaspora community is the fact that some of the Black Sea Greek diaspora TCs started off as a branch of a Greek diaspora TC based outside Russia. In addition, members of a Black Sea TC would also be partners in other Greek diaspora TCs and their off spring based outside Russia (Kandylis, 1994, 23–32, 66–77; Pepelasis Minoglou and Louri, 1997, 70, 79–82, 92; Kardasis, 1998, 125, 199; Vlami, 2000, 50–1, 181).
15. We have adapted the term 'Chiot Method' from the term 'Chiot Phase' which Gelina Harlaftis (1996) employs in order to describe the network and business methods of Greek diaspora merchants between the 1830s and 1860s.

16. For details on the operation of the other 'cost-reducing' information services the Coalition provided to its members and for the rules of conduct it required from the latter, see Pepelasis Minoglou (2005).
17. Other Greek scholars discussing the organization of branches of Greek diaspora TCs notice similar patterns. See Mandilara (1998, 174) and Vlami (2000, 182–5).
18. External crises were sometimes combined with internal factors in bringing realignments. For the Ralli TC case see Vourkatioti (1999, 120).
19. Private commenda agreement between the merchant Dionysis Kouppa who was settled in Constantinople with Spyros Kouppa who was over a (trial?) seven-month period to purchase from Berdiansk, Mariupole and Taganrog grain to be traded in Constantinople. Dated 29 March 1846, Institute of National Neo-Hellenic Research at the National Research Foundation, Kouppa Archive. For the notion of commenda, see Greif (1989, 863).
20. The repeating appearance of the same names from the 1820s onwards, in the listings in the *Odessa Vestnik*, regarding the top TCs in the Black Sea ports is testimony to the tenacity of the large Greek TCs.
21. Of the two literatures the one on business organization is by far the larger, but in both there exists a variety of approaches. For a summary of the state of the art in these two areas of research see Hodgson (1998 and 1999) for economic organization, and Shane and Venkataraman (2000) for entrepreneurship.
22. See Kirzner (1979, 129–30) for his notion of 'error'.
23. Ioannides has argued that there are important affinities between Kirzner's theory of entrepreneurship and the resource-based view of the firm, and especially the strands of the latter that assign priority to knowledge resources (Ioannides, 2002).
24. It is in this sense that Kirzner introduces the notion of *pure* entrepreneurship: the activity of discovering profit opportunities without having to expend any resources (Kirzner, 1973, 48).
25. Nineteenth-century partnerships 'typically had a short time horizon' and in terms of their governance structure they differed from the corporate firm as 'members of a partnership all had the power to act as if they were the sole owners of the enterprise' (Lamoreaux, 1998, 66–7).
26. Oliver Williamson makes a similar point in his discussion of joint ventures: 'joint ventures are sometimes described as hybrids. If, however, joint ventures are temporary forms of organization that support quick responsiveness, and if that is their primary purpose, then both successful and unsuccessful joint ventures will commonly be terminated when contracts expire. Successful joint ventures will be terminated because success will often mean that each of the parties, who chose not to merge but, instead, decided to combine their respective strengths in a selective and timely way, will have learned enough to go it alone. Unsuccessful joint ventures will be terminated because the opportunity to participate will have passed them by' (Williamson, 1996, 118).

27. Obviously, it is on this point that the ideas of the capabilities perspective on economic organization become most relevant, especially through the concept of routines introduced by Nelson and Winter (1982).
28. The focus on entrepreneurial knowledge – 'discovery' – is important for the argument here. Recall that loose partnerships were efficient, for the standards of the nineteenth century, in the communication and exchange of business information. However, this efficiency does not solve the incentive problem that the acquisition of new entrepreneurial knowledge creates, namely, why an individual partner would reveal this knowledge to other partners rather than 'going it alone'.

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