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Pioneers in Entrepreneurship Research

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Introduction

Over the last few decades, entrepreneurship has been a "hot topic" in society as well as in education and academic research. Today, extensive educational activities focusing on entrepreneurship are taking place at the universities. The research within this field has grown exponentially, the number of positions and chairs in entrepreneurship has increased dramatically, and Ph.D. programmes specialising in entrepreneurship have been introduced at various universities. On the other hand, entrepreneurship research has been criticized and the progress of the research called into question. For example, concerns have been raised in respect of:

- an uncertainty in the domain of entrepreneurship research (Shane & Venkataraman, 2000),
- too many "stakeholders" in the field with diverse interests in and expectations on entrepreneurship research (Blackburn, 2001),
- the transience of the field with a number of researchers that only temporarily visit the field (Landström, 2001), and
- the highly individualistic nature of the field with a low people-to-problem ratio (Becher, 1989), i.e. the number of questions that can be posed is more or less unlimited, while the number of researchers concerned with each question is rather small.

As a result, entrepreneurship research has become highly eclectic, and the level of "convergence" within the field is low – old topics are discarded in favour of new ones – or as Grégoire, Dery and Béchard (2001) expressed it, "entrepreneurship research appears less characterized by a dominant paradigm as by successive pockets of convergence."

Experience from the history of science shows that, in this emerging phase of development, individual researchers play an important role in the development of the research field. In 1997, Aldrich and Baker stated that "Those researchers who produce research that creates an interest among others to build on their work shape emerging fields of research." In this paper I will emphasise the importance of the pioneer researchers in entrepreneurship research and their role in the development of the research field and in knowledge

accumulation – pioneer researchers who produce important, path-breaking research, generating a potential for new research questions, thereby attracting new researchers to the field.

I will argue that the interest in entrepreneurs and entrepreneurship among researchers has a long history and that this interest seems to surface at different times – "swarms" of entrepreneurship research – and that these swarms are linked to economic development in society. In addition, during each swarm of entrepreneurship research, we can identify individual researchers – pioneers – who have produced path-breaking and interesting ideas about entrepreneurship, and who have had a substantial impact upon the development and in setting the research agenda within the field. The contributions of these pioneers will be discussed. The pioneers within the field have produced interesting theories that have constituted an attack on beliefs previously taken-for-granted and prompted a certain movement in the minds of the audience. In entrepreneurship research, it is not necessary to continually develop new theories but to build upon existing knowledge, and in this respect the seminal work of the pioneers in the field could be an important starting-point for such a refinement and extension of our knowledge.

This paper consists of four sections. In the next section I will describe and explain "swarms" of entrepreneurship research, i.e. time periods in history during which entrepreneurship research has been prominent. Thereafter, the pioneer researchers contributing to each swarm of entrepreneurship research will be discussed. Finally, the contributions of these pioneers will be discussed in terms of their role in the knowledge accumulation within the field.

"Swarms" of entrepreneurship research

Looking back at the history of entrepreneurship research, it is interesting to observe that our knowledge about entrepreneurship seems to have been developed with a certain chronological regularity – "swarms" of entrepreneurship research seem to have appeared at different times in history. For example, we can identify such "swarms" at the following points in time:

1850-1870 Austrian and German economists Johann von Thünen, Hans Emil von Mangolt, Carl Menger, Friedrich von Wieser, and Eugen von Böhm-Bawerk – research based on a research tradition rooted in political science and administration.

1890-1920 Many of Joseph Schumpeter's thoughts on entrepreneurship were developed during this period. US economists such as Fredrick Hawley and John Bates Clark, and at a slightly later stage Frank Knight, had a major influence.

1950-1970 Based on a strong behavioural science tradition, this period includes pioneers like David McClelland, Everett Hagen, Seymour Martin Lipset, and Fredrik Barth.

1985- An increased interest from researchers within management studies, for example, David Birch (the role of small firms in employment), Zoltan Acs and David Audretsch (small firms in innovation), Giacomo Becattini and Sebastiano Brusco (small firms and regional development), Arnold Cooper (technology-based firms), Howard Aldrich (ethnicity and networks), Jeffrey Timmons and William Wetzel (the role of venture capital), and Ian MacMillan, Peter Drucker, and Rosabeth Moss Kanter (entrepreneurship as a strategy).

Why, then, do these "swarms" of entrepreneurship researchers appear at certain periods in time? A likely explanation is that there is a strong link between societal development and the interest in entrepreneurship research – periods of economic difficulties and crises give rise to demands for change and the creation of new ways of thinking. Entrepreneurship research thrives and peaks during periods that are characterized by powerful dynamics and development.

The Swedish economic historian Lennart Schön (2001) argues that the development of western economies follows long-term structural cycles of about 40 to 50 years. Each structural cycle is initiated and shaped by some form of international economic crisis. Each cycle can be divided into two periods, characterized by different behaviours:

- Transformation period – a period dominated by the transformation of industrial structures, where resources are reallocated between industries, and by the diffusion of basic innovations within industry, thus providing new bases for such reallocation. During these periods, investment is generally long term and directed towards increasing capacity in new areas of production.

- Rationalization period – a period dominated by the concentration of resources in the most productive units within the industry and by measures to increase efficiency in the different lines of production, i.e. aimed at increased efficiency of existing structures and operations and decreased resource utilization. Investments, which are short-term in character, are directed towards reducing costs in existing structures and operations.

Although transformation and rationalization are processes that to a large extent take place simultaneously in an economy, historically there have been shifts in emphasis between periods of transformation and rationalization. These shifts occur with considerable regularity within a long structural cycle, for example 25 years of emphasis on transformation, followed by some 15 years of emphasis on rationalization. Thus, we can find a pattern of long cycles characterized by crisis – transformation – rationalization. Starting from the mid 19th century, the following long cycles can be identified in the world economy:

Crises	Transformation	Rationalization	Basis for the structural cycle
1845/50		1875	Breakthrough of mechanized factories and development of railways.
1890/95		1920	Breakthrough of the modern industrial society.
1930/35		1960	Breakthrough of electrification and the spread of automobiles.
1975/80		2000/05	Breakthrough of electronics, especially the microprocessor and information technology.

It appears obvious that the "swarms" of entrepreneurship research are related to periods of transformation characterized by far-reaching societal renewal, the emergence of new structures giving rise to a new direction for economic growth, and the rapid spread of new

technical solutions. On the other hand, interest in entrepreneurship appears to be less marked during periods of rationalization and more associated with stable societal relationships, increased production efficiency and short-term perspectives. Thus, one conclusion is that, throughout history, there has been a link between societal development and entrepreneurship research.

	Transformation	Research	Focus
1850-1870	Mechanized factories and railways	Economists Austrian/German researchers	Entrepreneurship as a function of the market – the ability of the entrepreneur to perceive opportunities for profit
1890-1920	Modern industrial society	Economists US/Austrian researchers	Entrepreneurship as a function of the market – the entrepreneur a creator of instability and creative destruction
1950-1970	Electrification and automobiles	Behavioural scientists US researchers	The entrepreneur as an individual (traits)
1985-	Electronics	Management studies mainly US researchers	Entrepreneurship as a process

During each "swarm" of entrepreneurship research, there seems to have been some pioneer researchers who have produced path-breaking research that has opened up new research questions, thus attracting new researchers into the field. Who were these pioneers? and What are their contributions?

Pioneers in Entrepreneurship Research

In entrepreneurship research, Richard Cantillon and Jean Baptiste Say are often given credit for introducing the concept of entrepreneurship into the literature of economic science. The Irish-born banker Richard Cantillon (circa 1680-1734), resident in Paris, whose work *Essai sur la Nature du Commerce en Général*, published posthumously in 1755, not only gave meaning to the concept of economics but also defined the role of the entrepreneur in economic development. Cantillon recognized that discrepancies between demand and supply in a market create opportunities for buying cheaply and selling at a higher price, and that this sort of arbitrage would bring the competitive market into equilibrium. The presumption was that the entrepreneur would buy products at a fixed price, have them packaged and transported to market, and sell them at an unpredictable, uncertain price. A basic characteristic of Cantillon's analysis was the emphasis on risk and the fact that entrepreneurship demands foresight and willingness to assume risk.

By the mid-18th century, changes in production conditions, social relations and ways of thinking began to emerge. These changes also had a bearing on the intellectual and academic

environment. In the realm of economic science, "classical" economic theory was developed. It is generally regarded as having its origins in Adam Smith's (1723-1790) *Inquiry into the Nature and Causes of the Wealth of Nations* (1776) – a work which in many ways set the trend for economic theory and in which Smith laid the foundation for the analysis of the way in which the market economy functions. Smith's work influenced the view of the entrepreneur held by economic science: he did not distinguish between the capitalist as the provider of the "stock" of the enterprise and the entrepreneur as the ultimate decision-maker, neither did he deal with the entrepreneurial function in the economy – instead, it was the capitalist who became the central actor in Smith's analysis. This failure to differentiate between the entrepreneurship function and pure ownership of capital became standard practice among classical economists.

There were, however, a small number of economists, who maintained a certain amount of interest in entrepreneurship, such as Jeremy Bentham (1748-1832), John Stuart Mill (1806-1873), and Alfred Marshall (1842-1924). However, it was the French economist Jean Baptiste Say (1767-1832) who broke the contemporary trend. In his works, *Traité d'économie politique* (1803) and *Cours complet d'économie politique practique* (1828), Say defined entrepreneurship as the combining of the means of production into an organism. He gave an empirical description of the role of entrepreneur as well as an analysis of the entrepreneurial function in the economy. He saw the entrepreneur as a "broker", who organises and combines means of production with the aim of producing goods. The efforts of these entrepreneurs are not random – they are directed to the creation of goods or services that have a value or utility. In addition, Say did not take the view that the entrepreneur was merely a coordinator of the means of production – on the contrary, he was the one who carried out these activities on his own behalf (i.e. assumed the risk).

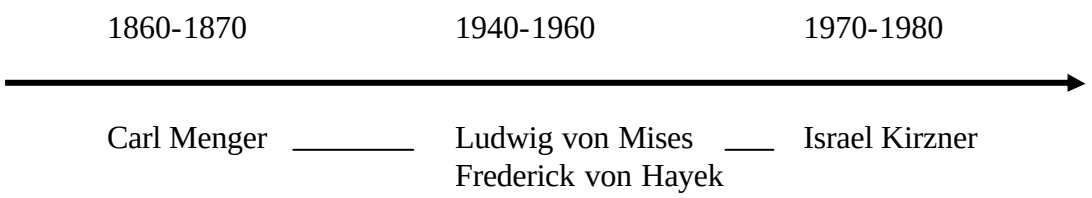
The first swarm of entrepreneurship research

The first "swarm" of entrepreneurship research in the mid 19th century was based on the thoughts of Austrian and German economists, such as von Thünen (1783-1850), Menger (1840-1921), Böhm-Bawerk (1852-1914), and Weiser (1851-1926).

In particular, Carl Menger is often regarded as the ideological founder of the so-called Austrian tradition of economic thought. His contribution to classical economics is mainly found at the methodological level. In his seminal work *Grundsätze der Volkswirtschaftlehre*, (1871), he introduced a subjectivistic view on the economy. He was the proponent of methodological *subjectivism*, where economic phenomena are not perceived as relations between objects but between people. In order to understand such relations, economic theory must proceed from the social, cultural and economic conceptions that govern human actions. Unlike the natural sciences, economics cannot disregard the perceptions, wishes and views of the people studied. This view is also reflected in Menger's methodological *individualism*. Within society and economics, the actors are individuals – not a group or social class – which means that explanations of economic phenomena have to proceed from or at least be possible to refer back to individuals' actions (Pålsson-Syll, 1998). Thus, economic changes do not take place in a vacuum but are created by individuals' awareness and understanding of a given situation. This means that the entrepreneur can be considered as an "agent of change", who transforms resources into useful products and services.

These ideas were later developed further by followers such as Ludwig von Mises (1881-1973) and Frederick von Hayek (1899-1992). According to Mises (1951), entrepreneurship is a question of correctly anticipating the market. If the entrepreneur is successful in anticipating the market, he or she will be able to produce more cheaply than their competitors and earn profit by being useful to the customer – the more useful, the more profit will be made – and therefore it would be destructive to tax or confiscate the profit of the entrepreneur in any way. Furthermore, Mises (1963) observed that people are not only calculating creatures but alert when it comes to making the most of opportunities. He introduced the concept of "human action" to describe this behaviour. Hayek (1945) pointed out that, in a market economy, knowledge is often divided among different individuals, so that no one individual possesses the same knowledge or information as another. This means that there are only a few people who know about certain shortages or resources that are not used to maximum effect. This knowledge is unique since it is obtained through every individual's particular situation, occupation, social network, etc.

In recent years, one of Mises' students at New York University, Israel Kirzner, has stood out as the leading exponent of the Austrian tradition. In his book *Competition and Entrepreneurship* (1973), Kirzner develops arguments raised by Mises and Hayek. According to Kirzner, it is fundamental for an entrepreneur to be alert in identifying and dealing with profit-making opportunities ("entrepreneurial alertness"), i.e. the entrepreneur tries to discover profit opportunities and helps to restore equilibrium in the market by acting on these opportunities. The entrepreneurial function, in this respect, involves the coordination of information, which is based on identifying the gap between supply and demand, as well as acting as the broker between supply and demand, making it possible to earn money from the difference. Thus, the entrepreneur looks for imbalances in the system. In such situations, there is an asymmetry of information in the market, which means that resources are not coordinated in an effective way. By seeking out these imbalances and by constantly trying to coordinate the resources in a more effective way, the entrepreneur steers the process towards equilibrium. Thus, Kirzner regards the entrepreneur as a person who alert in identifying imperfections in the market by means of information about the needs and resources of the different actors and who, with the help of this information, coordinates resources in a more effective way, thereby creating equilibrium.



The second swarm of entrepreneurship research

In the late 19th century, the European discussion on entrepreneurship found an audience in the United States, which at that time was well on the way to becoming a major industrial power. Some of the American economists, who continued to develop the discussion on entrepreneurship were for example Francis Walker, Fredrick Hawley, and John Bates Clark. Perhaps the best known economist in this context was Frank Knight (1885-1872). In his thesis *Risk, Uncertainty and Profit* (1916, revised 1921), Knight makes a distinction between risk and uncertainty. Knight argues that entrepreneurship is mainly characterized by uncertainty,

i.e. a situation that is uncontrollable and that cannot be appraised in terms of probability. The profit that accrues to the entrepreneur is the reward for his/her risk-taking under conditions of uncertainty.

However, it was Joseph A. Schumpeter (1883-1950) who tried to make the entrepreneur a central figure in economic theory. Schumpeter is regarded as a social scientist, and his extensive scientific production encompasses a wide field within economic theory. In his scientific works, he attempts to construct a new economic theory in response to the ideals of equilibrium developed and advocated by, among others, Leon Walras (1834-1910). Schumpeter himself was a great admirer of Walras, although he nevertheless considered that the prevailing equilibrium theory was incomplete – there was an "energy" within the economic system that gave rise to imbalances in the market. His work *Theorie der Wirtschaftlichen Entwicklung* (1911, second edition 1926) or *Theory of Economic Development* (1934), which is the English translation of the second edition, was Schumpeter's first attempt to communicate these lines of thought. However, the first and second editions are rather different. Of the two, the first edition is more original and bears all the hallmarks of youthful enthusiasm. Nevertheless, it is the second edition, especially the English version, which is most often referred to. This edition is more streamlined and in it Schumpeter tries to relate his work to the mainstream economic thinking of the period.

In his book *The Theory of Economic Development* (1934)**,** Schumpeter attempts to construct a new economic theory, and it therefore comprises a discussion about the significance of capital, the origin of profit, and economic cycles. The entrepreneur is only treated in one chapter (Chapter 2) of the book, and it is primarily this chapter that has had a great impact, while his other lines of reasoning have failed to gain a foothold within economic theory.

Schumpeter's basic view was that economic growth resulted not from capital accumulation but from innovations or "new combinations". His point of departure is that equilibrium is predominant in the economic system. He regards the economic system as a closed circular flow (*der Kreislauf*) due to the fact that a seller of a certain commodity will subsequently be the buyer of other commodities. The system is in a state of equilibrium, resulting in a continuous reiteration of the flows. However, this does not mean that changes do not occur but rather that all actors involved adapt to the new situation as soon as the changes are detected. Sometimes, however, radical changes occur in the system, due to a tendency of the entrepreneur to break the equilibrium by introducing innovations in the form of new products, methods of production, markets, investment goods, or organization of industrial units and branches. Once Schumpeter had recognized the crucial role of innovation for economic growth, he understood that innovation had to be implemented by someone, and this ability to break with established practice was primarily related to individual entrepreneurs – entrepreneurs characterized by their desire to found private kingdoms, the will to conquer, and the joy of creating. Using a more modern language (Swedberg, 2000, p 16), this can be expressed as: (i) the desire for power and independence, (ii) the will to succeed, and (iii) the satisfaction of getting things done. According to Schumpeter, money *per se* is not a driving force for the entrepreneur. However, these innovations, which change the established pattern, tend not to occur evenly in the course of time but in "swarms". The fact that entrepreneurs break down barriers stimulates other individuals to follow in their footsteps. The upturn in the economy brought about by these innovations has, however, qualitative effects on the economic system in the form of what Schumpeter calls "creative destruction", where the positive economic development leads to its own crisis.

However, it should be noted that Schumpeter's work and view on entrepreneurship underwent a change over time. Up to 1940, he was mainly interested in developing his mode of reasoning about entrepreneurship and in integrating these trains of thought in his new economic theory. During this period, he took the stance that entrepreneurship was the work of the individual. However, during the interwar period in the USA, he had encountered a different corporate world to that found in the Austria of his youth. In the USA, the corporate scene was dominated not by small firms with distinguishable entrepreneurs but by large companies with advanced research departments engaged in planned research. This spurred Schumpeter's interest in innovative activities in already existing organizations, while at the same time he developed a growing interest in economic history. This change in focus finds expression in, among other things, his book *Capitalism, Socialism and Democracy* (1942), where he focuses on the institutional structure of society. In his book, he raised the question of whether capitalism as an economic system would be able to survive, and he predicted that socialism would eventually displace capitalism in Western democracies. Schumpeter predicted a decline in the economic importance of the entrepreneur, which he considered would be one of the major forces in the transformation from capitalism to socialism. In his book he argues that increased rationality and routine in society weakens entrepreneurship, thus leading to the stagnation of capitalism. Innovations would no longer be related to the expertise of a single person, but become the fruits of the organized efforts of large teams, most efficiently performed within the framework of large corporations – making the large corporations increasingly predominant in the economy.

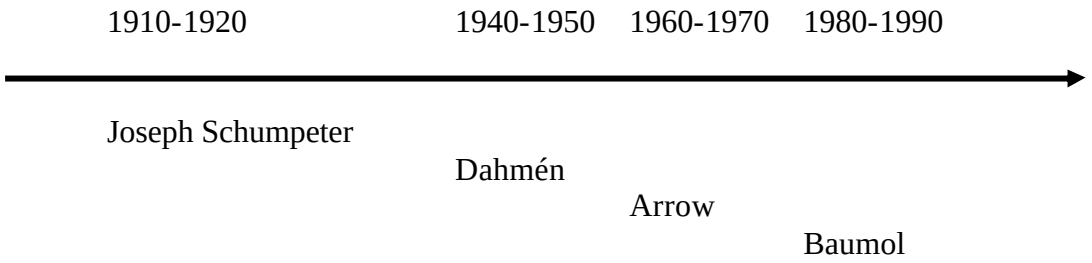
Schumpeter's reasoning has remained a basic point of reference for many researchers. I will now mention a couple of economists who have been instrumental in further developing Schumpeter's trains of thought:

Erik Dahmén (1950; 1970) formulated the concept of "development blocks" to describe an integrated industrial system within a nation. In a development block, different kinds of complementarities are developed, i.e. different institutions and companies support each other because they work with the same basic material or have other production-related points of contact. New innovations like, railway construction, electrification and motorization give rise to new complementarities in society. These development blocks have had a fundamental impact on society, contributing to the establishment of old companies in new locations as well as a radically new companies that have been able to utilise these changes. Thus, these development blocks lead to the creation of the swarms of innovations as described by Schumpeter.

Kenneth Arrow (1983) focused his interest on trying to define what kind of innovations large firms are good at, in contrast to small firms. He argues that the internal decision-making structure tends to differ between large and small firms and, as a consequence, small and large firms excel in different kinds of innovations. Small firms, with a short path between information about promising research and decisions about economic feasibility, tend to specialize in original research of an innovative character, whereas large firms, with significant amounts of relatively cheap money but less inclined to invest in original research due to its risk, will focus on large development projects. However, there may be possibilities to develop a market in cases where large firms buy original research from small firms and develop it further.

William Baumol's (1968; 1990; 1993) basic thesis is that the supply of entrepreneurs in a society is constant but that the societal value of their self-interested ingenuity varies according

to the rewards that they can receive. This indicates that, in order to encourage entrepreneurship, it will be necessary to create conditions that allow the entrepreneurial pursuit of self-interest to accord with social wealth creation. In this respect, Baumol argues that entrepreneurship can be found in many societies throughout history, but while it is productive in some, it is unproductive and even destructive in others. In other words, entrepreneurial activities may have negative consequences in terms of decreased social income and welfare – the entrepreneur earns money at the expense of other citizens in society. For example, different types of company acquisitions can sometimes turn into unproductive entrepreneurship and, quite often, legislation and the legal system prevent or delay the exploitation of new ideas.



The third swarm of entrepreneurship research

In the course of the last half century, it seems that entrepreneurship has been more or less overlooked in the economic models, with a few exceptions (e.g. Dahmén, Arrow and Baumol). An intra-scientific explanation is that economic science has focused more and more strongly on equilibrium models – which constitute the dominant paradigm in the field, and in which there does not seem to be any room for the entrepreneur (Barreto, 1989; Kirchhoff, 1994). Another more extra-scientific explanation may be that, after Schumpeter, the attention of society has moved from trying to explain entrepreneurship towards developing entrepreneurship. However, economists were unable to play a useful role in identifying and developing this ability. Instead, behavioural science researchers, and especially psychologists, saw an open field and increasingly took over the responsibility for continuing the theoretical development.

When it comes to what motivates entrepreneurs to strive for success in the economic sphere, behaviourists tend to emphasize the psychological factors involved. One of the pioneers that should be mentioned in this respect is Everett Hagen who, in a massive work *On the Theory of Social Change: How Economic Growth Begins* (1962), studied how a more traditional society is transformed into an economic growth society. Hagen explores how social exclusion and degraduation produces individuals determined to accumulate wealth. He argues that people who have grown up in certain minorities develop a much stronger psychological propensity for entrepreneurship than those who have not.

However, the most well-known pioneer among behavioural scientists with an interest in entrepreneurship is David McClelland (1917-1998). He was one of the first to present empirical studies in the field of entrepreneurship that were based on behavioural science theory. In his pioneering work *The Achieving Society* (1961), McClelland discussed the question: Why do certain societies develop more dynamically than others? For example, Why

did medieval Florence become the hub of the Renaissance? and Why did the same development not appear in other places with seemingly similar preconditions? Here McClelland builds further on Max Weber's reasoning in *The Protestant Ethic and the Spirit of Capitalism* (1904/1978), in which Weber made an analysis covering the interplay between culture and the economic development of a society. Weber's argument is that certain puritanical traits in the Protestant moral code resulted in a combination of thrift, a sense of duty, industriousness and self-denial, and that these characteristic traits made the development of capitalism possible. For McClelland, the premise was that the norms and values that prevail in a given society, particularly with regard to the need for achievement (nACH), are of vital importance for the development of that society.

By means of a large number of experimentally constructed studies, McClelland demonstrated the link between a nation's need for achievement and its economic development. For example, as an indicator of the degree of need for achievement in a society, he studied popular legends and fairy tales, both modern and traditional, from different parts of the world in order to relate them to the nation's economic development. The results show that there appears to be a relation between a nation's degree of need for achievement and its economic development. He points out, however, that economic development is a complex phenomenon, which cannot be explained merely in terms of need for achievement. Consequently, other variables need to be considered, such as the individual's relationship motive and need for control. He concluded that economically better developed nations are characterized by a lower focus on institutional norms and a greater focus on openness towards other people and their values, as well as communication between people. It is in this context that entrepreneurs become the major driving force in the development of a nation. In other words, a country's level of achievement is transformed into economic growth through the medium of the entrepreneur. If the need for achievement in a country is high, there will probably be individuals who will act as entrepreneurs. Entrepreneurs are, in this regard, individuals who have a high need for achievement, strong self-confidence, and independent problem-solving skills, and who prefer situations that are characterized by moderate risk, follow-ups of results and feedback, and the acceptance of individual responsibility.

McClelland's contribution meant that the personal qualities of the entrepreneur occupied a prominent position in entrepreneurship research within the field of behavioural science during the 1960s and 1970s. There are a large number of studies that attempt to identify the particular qualities of the entrepreneur, some of which are (Delmar, 2000):

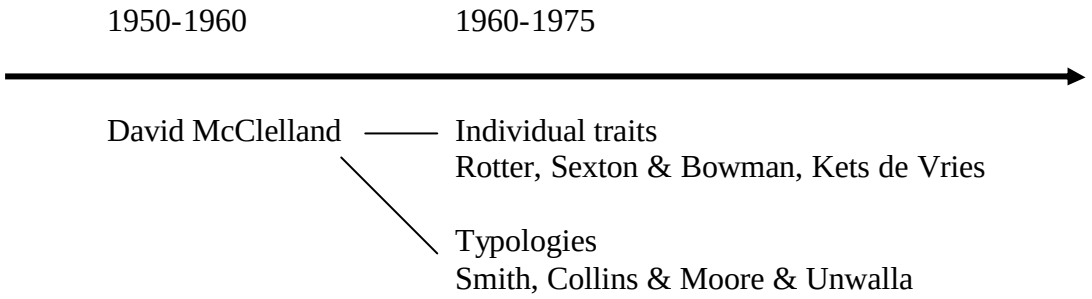
- Need for achievement; one of the most common characteristics associated with entrepreneurs and based on McClelland's 1961 study.
- A propensity for risk-taking; the role of the entrepreneur as the risk-taker or risk-bearer in the economic system can be traced back to early economic science writers, especially Knight (1921).
- Locus of control; this concept, developed by Rotter (1966), concerns whether a potential goal can be attained through one's own action or if it is merely a result of uncontrollable external factors.
- Over-optimism; entrepreneurs often display a high degree of over-optimism, which was reported by Cooper, Woo and Dunkelberg (1988).
- Desire for autonomy; entrepreneurs seem to have a great need for autonomy (Sexton & Bowman, 1985) and a fear of external control (Smith, 1967).

A review of psychological approaches to entrepreneurs would be incomplete without mentioning the contributions within the psychoanalytical-oriented tradition, which assume that the behaviour of the individual is best understood in terms of a number of intrinsic qualities. The basis for these qualities is formed early in life. The main exponent of this research tradition is perhaps Ketz de Vries, who in his work *The Entrepreneurial Personality* (1977) takes the view that entrepreneurial behaviour is the result of experiences in early youth, characterized by an unhappy family background with various kinds of psycho-social problems. Because of this, the individual acquires a deviant personality, is unable to function in a structured social environment, and has difficulty accepting authority and working together with others.

The number of traits identified in research has gradually been increased, and it has therefore, with a few exceptions (e.g. "need for achievement"), been difficult to link any specific traits to entrepreneurial behaviour (Delmar, 2000). For this reason, research into individual traits has been extensively criticized, both on conceptual and methodological grounds, but also due to the fact that an increasing number of companies are founded by teams and not by a single individual. Despite this, the notion of trying to identify entrepreneurial traits in various individuals still persists, but current research is more rigorous in terms of concept development as well as more sophisticated in the use of methods. The models have also become more complex, taking into account the situation and the individual's perception of the situation.

For behavioural science researchers, it was not only of interest to define who the entrepreneur was but also to show how the entrepreneurs differed from other groups of leaders. Entrepreneurs constituted a fairly heterogeneous group of people, which meant that it was essential to classify them in relation to other groups of leaders as well as within their own group. Several researchers have discussed these differences. Among the pioneers in this field are Orvis Collins, David Moore and Darab Unwalla, who examined the differences between managers in large businesses and entrepreneurs, and Norman Smith, who identified different types of entrepreneurs.

Collins, Moore and Unwalla (1964) build on an earlier study by Warner and Martin *The Industrial Man* (1959), in which the authors attempted to characterise the successful business leader. Collins et al. found differences between managers and entrepreneurs in terms of their views on authority and their insight into the need for social skills. The manager fits into the system and considers it natural to make a career in the hierarchy, whereas the entrepreneur feels that he or she is a prisoner of the system and wants to break free. They also found that entrepreneurs constitute a heterogeneous group of individuals and that there is a need to classify different types of entrepreneurs. The best know classification is perhaps that of Smith, who in his work *The Entrepreneur and his Firm* (1967) distinguished between the "craftsman entrepreneur" and the "opportunistic entrepreneur". Both of these types are a reflection of each other. The craftsman is described as a person who is qualified in a limited field, not very flexible, and who focuses on the past and present. Smith was also interested in the connection between the type of entrepreneur and the type of company he created. He found that the company run by a craftsman is rigid in that the changes in customer groups and products are small, the production equipment is located in the same place and the market is local or regional, in contrast to the opportunistic entrepreneurs, who often tend to start more 'adaptive' companies. The heterogeneity of entrepreneurs and the need to focus on the differences between the two types of entrepreneurs have resulted in Smith's typology being used and developed in a large number of studies over the years.



The fourth swarm of entrepreneurship research

For many years industrialization and economic development were assumed to be based on mass production, and large companies were seen as superior in efficiency as well as the most important driving force behind technological development. The notion that large-scale production and a social order with strong collectivistic elements were conducive to economic development was firmly established among social scientists at the time. One of the most influential thinkers was John Kenneth Galbraith who in his books *American Capitalism* (1956) and especially in *The New Industrial State* (1967) provided an important rationale for an economic policy oriented towards the large corporations. Galbraith argued that innovative activities as well as improvements in products and processes were most efficiently carried out in the context of large corporations. Similarly, in *The Rise of the Western World* (1973) Nobel Laureate Douglass North gave the entrepreneur a very minor role in economic development – and hardly mentioned the topic at all.

As a result of the turbulence in the world economy during the 1970s, the first signs began to emerge that large systems are not always preferable. Many large companies were hit by severe economic problems. Increasingly, large companies were seen as inflexible and slow to adjust to new market conditions. As a consequence, economic activity moved away from large companies to smaller firms. Carlsson (1992) found two explanations for this shift: (i) a fundamental change in the world economy, related to the intensification of global competition, the increase in the degree of uncertainty, and the growth of market fragmentation, and (ii) changes in the characteristics of technological progress. The depression of the 1970s and 1980s initiated a series of technological waves – first the development of information technology and later the biotechnological wave. As a consequence, new areas of interest emerged, and topics such as entrepreneurship, innovation, industrial dynamics, and job creation (Acs, 1992) increasingly came to dominate the political debate. This development received additional support from politicians such as Ronald Reagan in the US and Margaret Thatcher in the UK, who pursued a policy strongly in favour of promoting small business and entrepreneurship. For example, President Reagan referred to the decade as the "Age of the Entrepreneur" in his 1985 address to the nation.

It was in this context that David Birch presented his seminal work *The Job Generation Process* (1979). Birch was interested in understanding how jobs were created. The main problem was to obtain adequate data – existing data bases were not equipped to cope with large longitudinal data. Birch used Dun & Bradstreet data, originally developed for credit ratings. The research group acquired the complete files for the US as per 31 December 1969, 1972, 1974 and 1976 – containing about 12 million records and over 100 reels of magnetic

tape. Considerable efforts were made to reduce the files into a compact set, with all four years merged together, thus making it possible to analyze changes in each firm between the different years. Each establishment was assigned to a unique identification number, and the files for the four years were matched on a case-by-case basis.

What did Birch and his research colleagues find? As mentioned, the study was focused on job creation, and some interesting findings emerged:

- Migration of establishments from one state to another played a virtually negligible role. Often much media attention was given to the migrations of firms from one region to another, but the symbolic effect seems to have been more important than their actual effect on the job base.
- Job losses seemed to be about the same everywhere – the death and contraction rate varied little from one region to another, despite the rather large range of net change rates involved. The variation in net change was mainly due to variation in the rate of replacement, not the rate of loss.

Thus, differential rates of job replacement are the crucial determinant of the growth or decline of a region. But who are the major generators of these jobs? What kinds of firms play a critical role in job creation?

- Independent firms had the highest rate of growth of independent firms and they played an important role in industries like farming, trade and service sectors, these were the growing sectors in the economy during the 1970s.
- On average, about 60 percent of all jobs in the US were created by firms with 20 or less employees, about 50 percent of all jobs were created by independent small entrepreneurs, whereas large firms (with over 500 employees) generated less than 15 percent of all net new jobs.
- Not all small firms are job providers. It is the smaller, younger firms that generated jobs – once the firms were in operation for over four years, their job generation powers declined substantially.

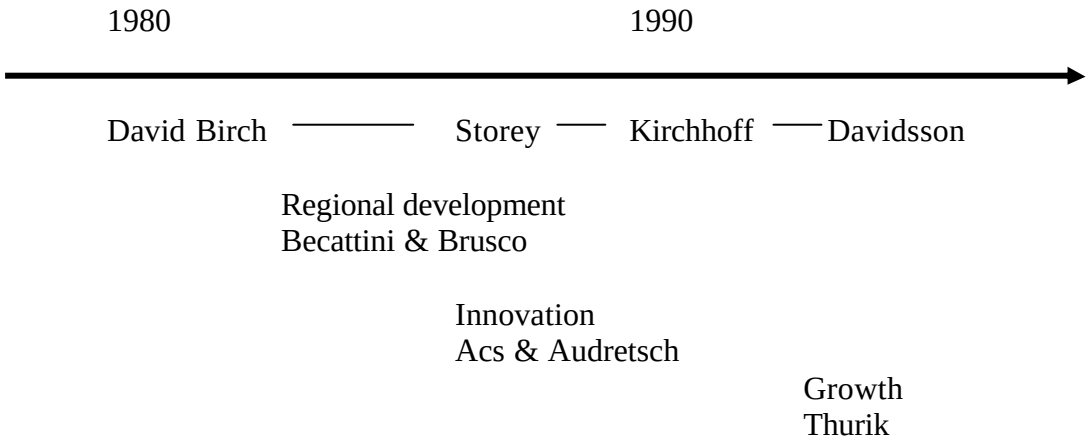
The report was only sold in twelve copies, but its influence was enormous, not least on policy-makers. The report also had an enormous impact on the research community – even if it has been a source of considerable controversy and criticism (see e.g. Storey and Johnson, 1987; Storey, 1994; Kirchhoff, 1994). It provided the intellectual foundation for researchers throughout the world to incorporate smaller firms into their analyses of economic development, and many of the findings have proved very robust and have been verified in many later studies (see for example studies by Storey, Kirchhoff, Reynolds, Davidsson).

At the same time, two Italian economists, Giacomo Becattini and Sebastiano Brusco, resurrected the concept of industrial district, originally formulated by Alfred Marshall. They developed the concept by changing the focus from the cluster of small firms, to a broader perspective of the merger of community and inter-related firms – strengthening the non-economic, socio-territorial dimension of the concept. The empirical work of Becattini was mainly based on the development of the Tuscon economy, whereas Brusco studied the industrial district of Emilia Romagna. They observed the importance of small firms for regional development. In this respect, research on industrial districts has had an enormous impact on policies for regional development, but also contributed to our understanding of innovations as social process, about learning regions and the importance of networks in the

development of small firms, and the research influenced further research in a narrow as well as broader sense (see e.g. research by Michael Porter, AnnaLee Saxenian, etc.).

Following Birch's line of thought that small firms are important for the development of the economy Zoltan Acs, in his work *The Changing Structure of the US Economy: Lessons from the US Steel Industry*, 1984, argued that small firms should not be viewed as less efficient copies of the larger enterprises. Small firms have an innovative role in the economy – as agents of change. Acs' empirical data were collected from the US steel industry, where he found that mini-mills seemed to produce different products, using different inputs and different production processes. Small firms seemed to have large innovative advantages – at least in the US steel industry. To elaborate on the findings from the US steel industry, Zoltan Acs together with David Audretsch, began to investigate the determinants of innovative activity in different industries, focusing on the question: What role do the small firms play in innovative and technological changes in the economy? They investigated this question in a very systematic way and made a number of methodological contributions as well as increasing our understanding of the role of small firms in innovative and technological changes in different industries.

In recent years, Roy Thurik has focused on the relation between entrepreneurship/small businesses and economic growth (see e.g. Wennekers & Thurik, 1999; 2001). Based on a historical analysis and extensive statistical data at national level, the results support the view that differences in the business ownership rate across countries have an effect on economic growth and that countries which lag behind in the restructuring process will pay the penalty in terms of lost macro-economic growth.



The contribution of the pioneers in entrepreneurship research

What are the contributions of these pioneers? Most entrepreneurship research could be regarded as rather mediocre and dull – it tells us something we already know (we hear expressions like "of course", "that's obvious", or "everybody knows that"), or what nobody is interested in ("so what", "who cares", or "why bother"). What the pioneers have done sets them apart from this relatively mediocre research – they have produced path-breaking knowledge, which has opened up new research questions, which in turn have inspired other researchers to study the research questions in greater depth.

Against this background, we need to reflect upon "What distinguishes a mediocre researcher from an ingenious one?" We tend to think of researchers as great because their theories are true. But this is open to question: A researcher is considered great, not because his/her theories are true, but because his/her theories are interesting (Davis, 1971).

What makes a theory interesting? In my opinion, interesting theories are those that contradict certain taken-for-granted assumptions and beliefs of their audience. For example: What seems to be a disorganized phenomenon is in reality an organized phenomenon. What seems to a single phenomenon is, in reality, composed of heterogeneous elements. What seems to be a phenomenon that functions ineffectively is, in reality, a phenomenon that functions effectively.

What the pioneers in entrepreneurship research have done is to propose interesting theories about the phenomenon that we call entrepreneurship – theories that prompt a certain movements of the minds of the audience. On the other hand, these interesting theories seems to fade out rather quickly. Based on a citation analysis, Landström (2001) identified a small group of "core" researchers within entrepreneurship research as well as a number of "core articles" written by these core researchers. The citation patterns show that the core articles seem to be forgotten rather quickly, which indicates that new topics are continually emerging in entrepreneurship research.

Despite the fact that the field of entrepreneurship research is relatively young (and it takes time to build systematic knowledge) and entrepreneurship is an extremely complex phenomenon to study, I will argue that we do not need to continually develop new theories – especially as very few of these theories are "interesting" – instead it is important to build upon existing knowledge and findings. What we need is a balance between the creation of new knowledge ("interesting theories"), and the development of old certainties ("robust research" refining and extending these theories). To elaborate on this statement, March (1991) makes a distinction between "exploration" and "exploitation". The essence of exploration is experimentation with new alternatives, and its outcomes are often less certain, more remote in time and more distant from the locus of the field. On the other hand, the essence of exploitation is the refinement and extension of existing competencies and paradigms, and its outcomes are proximate, predictable and often more positive in the short term. Based on the reasoning of March, we could say that entrepreneurship research is characterized by too much exploration and too little exploitation, and it could be argued that the interesting and path-breaking theories developed by the pioneers should not only be regarded as history, but should be the basis for refinement and extension.

Acknowledgement

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