
ECONOMIC THEORIES OF THE ENTREPRENEUR:

A Systematic Review of the Literature

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ABSTRACT

*E*conomic theories of the entrepreneur have received more attention recently in the entrepreneurship literature. Different concepts and ideas are typically borrowed from various economists to create new, or expand upon existing, theories. This has created a somewhat fragmented literature, and I found no evidence of a previous systematic (or comprehensive literature) review of *any* economic theories of the entrepreneur.

The many different economic theories of the entrepreneur over time and a renewed interest in researching entrepreneurship within an economics framework led to my research questions: What are the different economic theories of the entrepreneur? What are the main themes and sub themes of these economic theories?

The aims of my systematic review were: (1) to provide a literature scoping section that gives an overview of the economics and entrepreneurship fields which lead to my research question; (2) to develop a systematic review protocol which outlines the various stages of the review process which will answer the review question; and (3) to carry out the review by locating and synthesizing the relevant literature.

The process proved beneficial as evidenced by the comprehensiveness of the findings. The most influential school of economics on the field of entrepreneurship is arguably the Austrian school, with Israel Kirzner as the main developer of an economic theory of the entrepreneur. Most of the current themes in the entrepreneurship literature come from his theory and future research in entrepreneurship appears to be moving forward with ideas from the Austrian school.

I have synthesized the results from the systematic search and identified 7 major recurring themes in the literature: entrepreneurial opportunity identification and exploitation; discovery; knowledge; uncertainty and risk; the market as a process; disequilibrium; and alertness. Taken together, these themes provide a clearer picture of the economic function of the entrepreneur.

PERSONAL STATEMENT

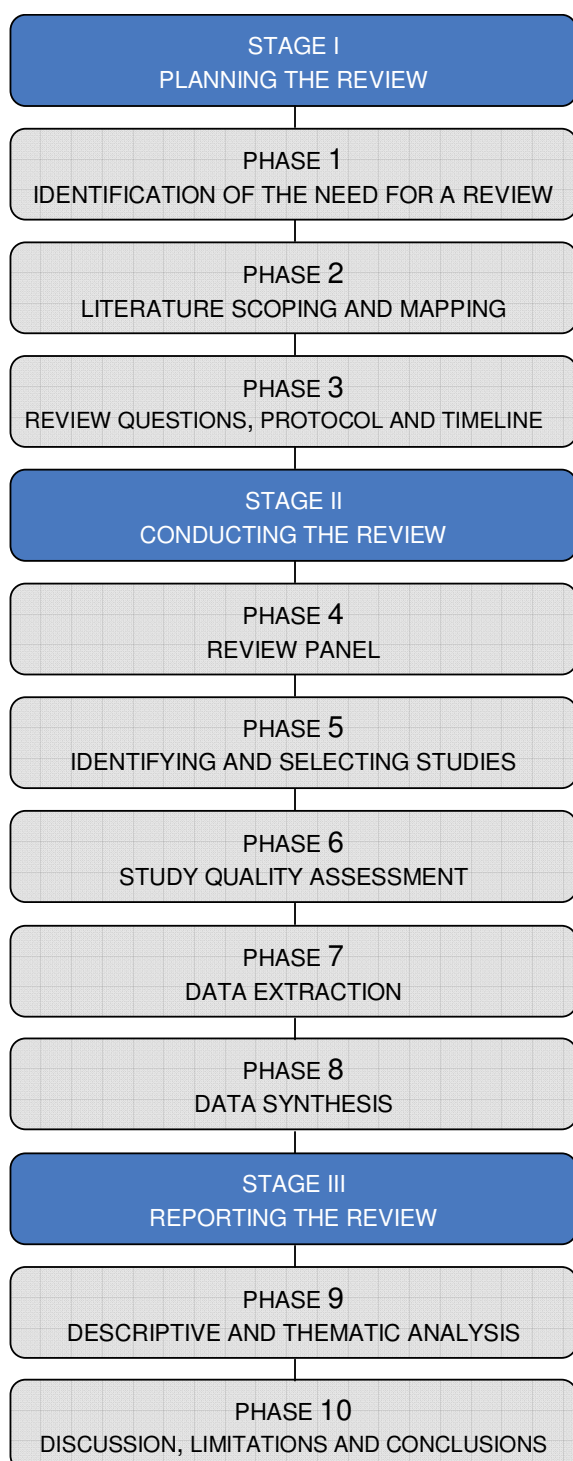
I became interested in entrepreneurship as a field of study primarily from my various attempts at starting my own businesses. Both attempts were “successful” in terms of being profitable but I quickly realized how much my business school education was not *directly* applicable to my attempts at entrepreneurship.

My other attraction to the field of entrepreneurship stems from my interest in the related field of economics. I have always enjoyed economics even though I felt it was not emphasized in my Undergraduate and Master’s programs. It was not until I came to Cranfield University that my interest in economics, and specifically Austrian economics, grew at a fast pace. In Austrian economics, the entrepreneur finds his home. In mainstream neoclassical economics, the entrepreneur does not conveniently “fit,” given that the neoclassical model is built on equilibrium where all information is known, and thus no arbitrage opportunities exist.

As I began to read the entrepreneurship literature, I noticed there were different broad aspects of the literature where I could focus: psychological traits of entrepreneurs, sociological theories about entrepreneurs, or the economic role of entrepreneurs. It was an easy choice: Austrian economics and entrepreneurship were the most appealing fields.

Since I am both passionate and serious about the topic, I usually enjoy the somewhat tedious process of conducting research. The entrepreneurship field is extremely dynamic and expanding in many areas. I aim to make a contribution to its growth and to a better comprehension of the wonderful phenomenon of entrepreneurship and the vital function entrepreneurs hold in the market.

OVERVIEW



This systematic review adapts the framework from the NHS Centre for Reviews and Disseminations' guide for undertaking systematic reviews. This framework will serve as an outline throughout the systematic review, including the scoping study, review protocol, and the full systematic review. The review consists of three stages: planning, conducting, and reporting the review.

Stage I consists of three phases and identifies the need for a review (Phase 1), scopes and maps extant literature (Phase 2), and leads to the review questions, protocol outline, and timeline (Phase 3).

Stage II consists of the next five stages which describe the systematic review protocol in more detail. Phase 4 includes forming a review panel to assist in the review. Phase 5 describes the method I used to identify and select relevant studies for the review. Phase 6 then assesses the relevant studies for quality. Phase 7 provides a sample data extraction form I used to extract data from relevant studies. Phase 8 describes how I synthesized the data.

Stage III includes Phase 9 which shows tables of descriptive and thematic analyses reports that were generated from data synthesis. Phase 10 concludes with discussion, limitations of the review, conclusions, opportunities for future research and key learning points.

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INTRODUCTION

The future belongs to the entrepreneurs.

~Anonymous

Entrepreneurship is crucial to increasing productivity, competition, and innovation; is valuable to an economy and its participants (US, Office of the Press Secretary, 2003); creates thousands of jobs each year (Morris & Kuratko, 2002, p. vii); and increases prosperity and revitalizes communities (UK, SBS, 2002). Since the first (US) entrepreneurship course was taught in 1947 at Harvard Business School, the entrepreneurship field has grown extensively. There has been growth in entrepreneurship course offerings and the number of entrepreneurship faculty, endowed positions, academic journals, conferences, books, and research centers (Katz, 2003). The Academy of Management's Entrepreneurship division grew more quickly from 1999-2004 than every other division by 77 percent (Shaver, 2004).

While the entrepreneurship field grew steadily for over 30 years, there has been an "explosion" of entrepreneurship research and education over the last 20 years (Davidsson *et al.*, 2001). This includes research from other business-related disciplines such as management, marketing, and strategy, as well as other fields such as education, history, political science, and psychology. Entrepreneurship has become more accepted as a valuable discipline. It has become more established worldwide and is "succeeding beyond anyone's past predictions" (Katz, 2003).

Despite its success, the field of entrepreneurship is not monolithic. It is characterized as having an ill-defined paradigm (Shane & Venkataraman, 2000), being highly fragmented (Gartner, 2001), and lacking theory development (Morris *et al.*, 2001, p. 36). It lacks a conceptual framework and has become "a broad label under which a hodgepodge of research is housed" (Shane & Venkataraman, 2000). It generates many theories and frameworks (Murphy *et al.*, 2006), but they do not rest on a defensible theory base (Bull and Willard, 1993). There even seems to be a never-ending debate among entrepreneurship scholars over the definition of an entrepreneur (Bygrave & Hofer, 1991; Gartner, 1990). There is also concern whether the discipline is too fragmented, with specialists who make little use of each other's work (Ucbasaran, 2001). This fragmentation would hinder the advance of knowledge, creating a discipline without a core (Johnston, 1991).

Entrepreneurship was originally conceptualized as an economic function and the entrepreneur as someone willing to bear risk to make a profit. Although economics gave the entrepreneur a function in the market, it was eventually almost entirely eliminated in mainstream economics. It was then that behavioral science researchers attempted to develop

theories of the entrepreneur (Cornelius *et al.*, 2006). But by defining the field in terms of entrepreneurial attributes, entrepreneurship scholars “have generated incomplete definitions that do not withstand the scrutiny of other scholars” (Gartner, 1988; Shane & Venkataraman, 2000).

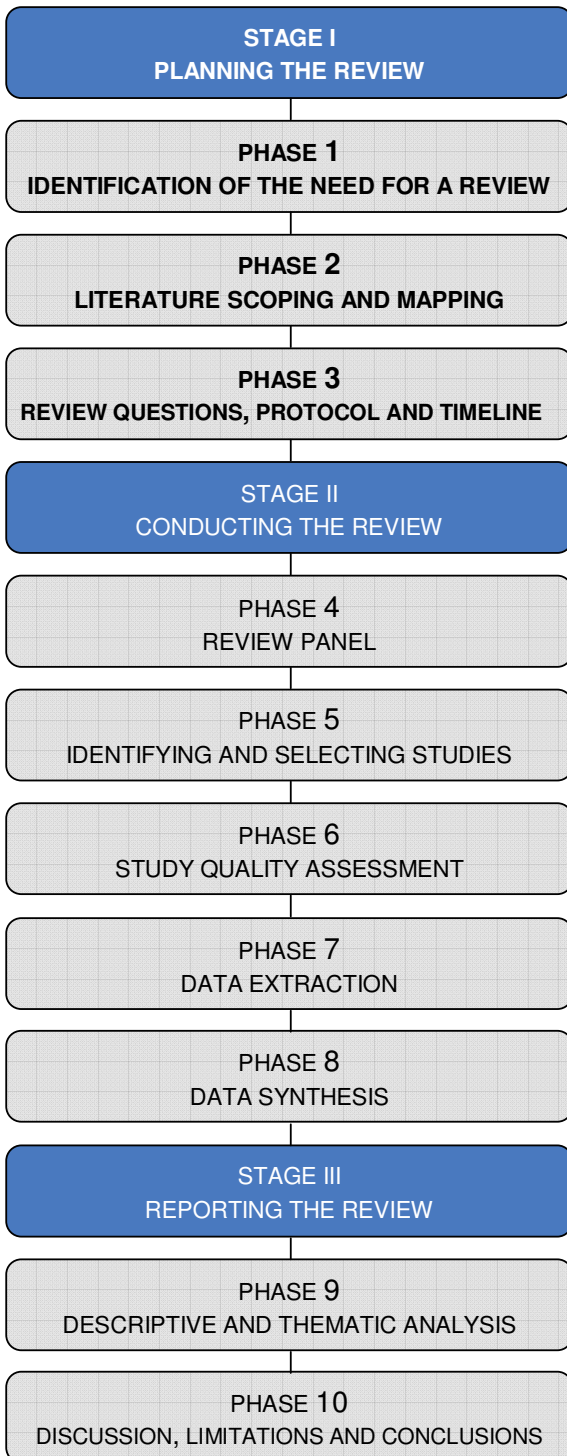
In the year 2000, several scholars again began to take an economics approach to the study of entrepreneurship, possibly sparked by an oft-cited note on entrepreneurship published in the *Academy of Management Review* (Shane & Venkataraman, 2000; also see Grégoire *et al.*, 2006). Economic theories of the entrepreneur continue to receive more attention in the academic literature (*cf.* Endres & Woods, 2006; McMullen & Shepherd, 2006; Murphy *et al.*, 2006). However, no one has yet done a systematic review of the various economic theories of the entrepreneur. Now is an excellent time to analyze the theories more in detail and to synthesize the findings.

My research takes an “outward-in” instead of an “inward-out” approach to the entrepreneur. I approach the topic of entrepreneurship primarily from a macro-perspective and within an economics framework. This means the definition of an entrepreneur will be essentially the functional role an entrepreneur fulfills within the market—as opposed to attributes entrepreneurs possess, or what factors contribute to entrepreneurial success/failure. This also contrasts the entrepreneur with other, somewhat similar, functional roles, e.g., a manager, small business owner, etc.

As mentioned above, the debate over the definition of an entrepreneur continues today (Bygrave & Hofer, 1991; Gartner, 1990). Researchers attempt to define the entrepreneur in myriad ways but I will look at the function(s) of entrepreneurs in the market. I hope the functional role of the entrepreneur will become more defined through this research. I intend to determine how, and if, the entrepreneur “fits” into the various economic frameworks that exist. This will also ideally lead to a fuller comprehension of the entrepreneur within the entrepreneurship literature.

STAGE I

PLANNING THE REVIEW



Planning the review consists of three phases: (1) the identification of a need for a systematic review of the literature; (2) the scoping and mapping of the literature fields; and (3) the specific review questions to be researched, followed by the development of a review protocol.

Phase 1. The identification of a need for a systematic review determines whether a similar review has been done previously. It is necessary to avoid duplication of research. I found no previous systematic reviews that address my review questions and thus I have established a need for a review.

Phase 2. The scoping of the literature aims at determining what we know and don't know of the fields of study. This is based on an initial search of the relevant literature which also helps to determine its magnitude. This will aid in defining the review questions. I have constructed a map of the literature to provide a clear visual of the relevant areas of the fields, their overlap, and the area to be further researched.

Phase 3. The literature scoping and mapping should lead naturally to focussed review questions. These questions lead to my review protocol, including the methodology to answer the review questions.

1 PHASE 1: IDENTIFICATION OF THE NEED FOR A REVIEW

In an attempt to carry out a systematic review, it becomes necessary to determine if an *exact* review has been done before. While this may be less likely, it is possible a very *similar* review has been done. Thus a preliminary search of previous systematic reviews can be carried out to assess whether a review should proceed, an existing review can be updated or added to, or whether no further review is required.

1.1 IDENTIFYING EXISTING REVIEWS

Different ways of identifying previous systematic reviews include database searches, selected internet sites and experts in the field (e.g., librarians, academics, practitioners). In order to determine whether a new review should be commissioned I carried out a search for peer-reviewed journal articles in six academic databases using the search string *economi* AND entrepre* AND systematic review OR systematic analysis* (see Table I). This resulted in two entries, of which none were relevant. Thus, I will proceed to carry out my systematic review.

Table I. Searching for systematic reviews

Database	Search for:	Search in:	Number of entries	Number relevant
ABI (ProQuest)	economi* AND entrepre* AND "systematic review" OR "systematic analysis"	abstract	2	0
EBSCOhost	economi* AND entrepre* AND "systematic review" OR "systematic analysis"	abstract or author-supplied abstract	2	0
ISI Web of Science	economi* AND entrepre* AND "systematic review" OR "systematic analysis"	abstract	1	0
Science Direct	economi* AND entrepre* AND "systematic review" OR "systematic analysis"	title, abstract and keywords	0	0
Emerald	economi* AND entrepre* AND "systematic review" OR "systematic analysis"	abstract	0	0
PsycINFO (CSA)	economi* AND entrepre* AND "systematic review" OR "systematic analysis"	abstract	1	0

2 PHASE 2: LITERATURE SCOPING AND MAPPING

In addition to identifying the need for a review, it is necessary to “scope and map” the existing literature to arrive at a research question. Literature scoping aims to survey existing literature to determine the questions and objectives of a systematic review. It is a tool for managing the heterogeneity, and often fragmented, knowledge of research fields. It needs to consider the cross-disciplinary perspectives and ways previous research has been conducted (Tranfield *et al.*, 2003). Literature mapping can provide a visual map of the dominant themes in a field, their evolution and areas of overlap with other fields. The intent of this literature scoping and mapping section is to give a brief overview of the fields and where they “overlap,” leading to a more detailed section on the focus of my research.

Entrepreneurship and economics are broad fields that require much more attention than can be given here. The purpose here is to give an historical background of the fields. I will use Figure I loosely as a guide to describe both fields. The mapping of the field section in systematic reviews often begins with describing two or more separate fields and then their areas of overlap. However, I view entrepreneurship and economics as originally being conceptualized at the same time—and by the same author (Cantillon, 1755). Thus, instead of viewing Figure I as two fields with overlapping areas, I see the fields as originating simultaneously and then developing into somewhat different disciplines with their own themes and sub-themes (see Figure II). In other words, the overlapping area in Figure I can actually serve as a starting point for analyzing both fields.

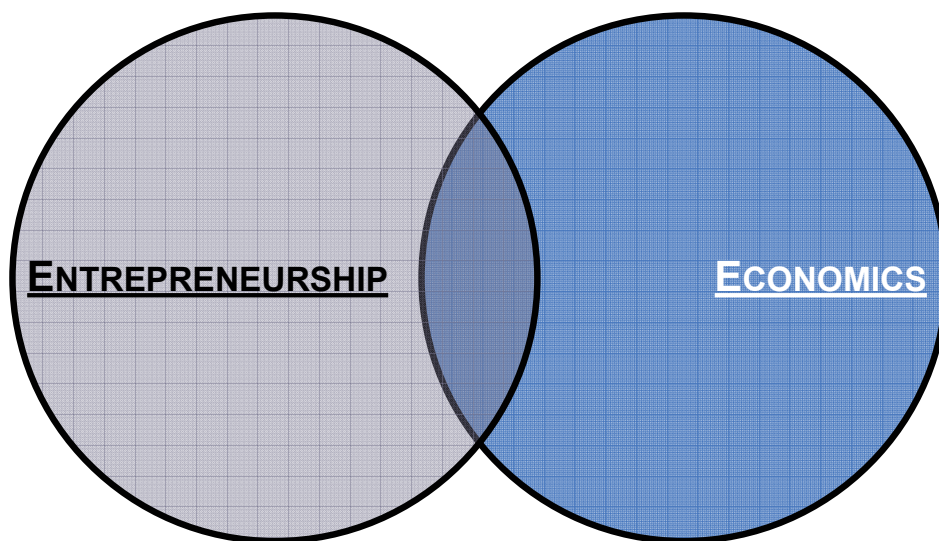


Figure I. Mapping the fields

Entrepreneurship and economics continue to grow as fields with research being conducted in many areas. Figure II is meant to give a sample of some of the main themes in the academic literature. Some academic journals are dedicated to these themes (e.g., The Journal of Economic History, Entrepreneurship & Regional Development, and International Journal of Entrepreneurship & Innovation).

The diversity of themes in entrepreneurship is reflected by the following description from the Academy of Management’s Entrepreneurship Division:

The Entrepreneurship Division's domain is the creation and management of new businesses, small businesses and family firms, as well as the characteristics and special problems of entrepreneurs. The Division's major topic areas include: (1) New venture ideas and strategies; (2) Ecological influences on venture creation and demise; (3) The acquisition and management of venture capital and venture teams; (4) Self-employment; (5) The owner-manager; (6) Management succession; (7) Corporate venturing; and (8) The Relationship between entrepreneurship and economic development. (Academy of Management, Entrepreneurship Division)

2.1 MAPPING ENTREPRENEURSHIP AND ECONOMICS

The terms “entrepreneur” and “entrepreneurship” do not even appear in the indexes of leading American textbooks on the economics of organization and management (Be-sanko *et al.*, 2004; Brickley, Smith, & Zimmerman, 2004). Two British surveys of economics

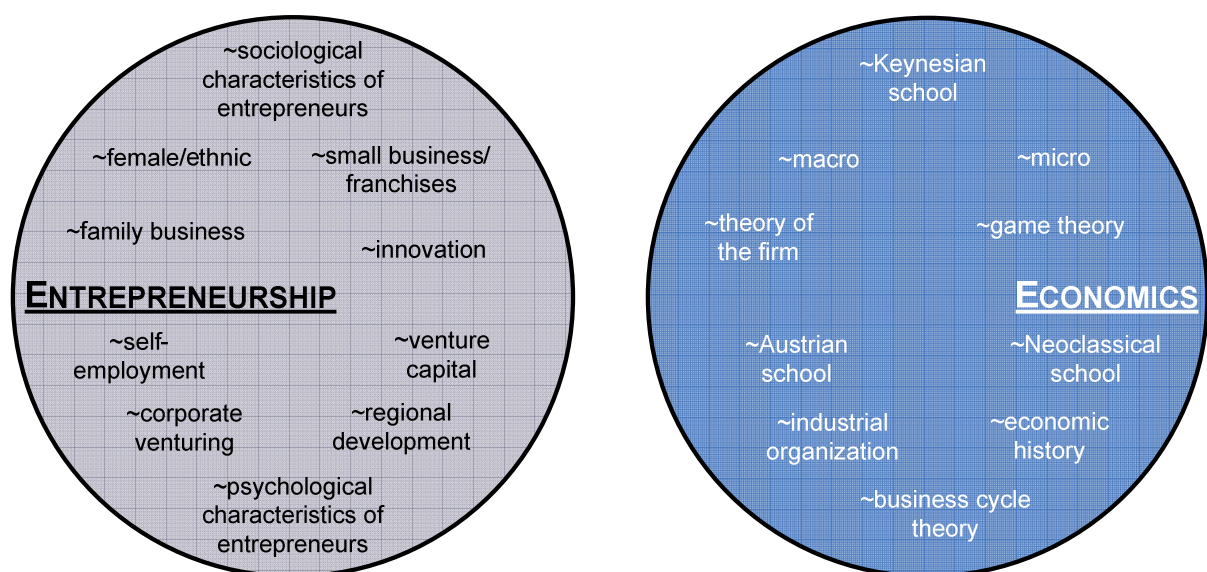


Figure II. Themes in entrepreneurship and economics

principles textbooks (Kent, 1989; Kent & Rushing, 1999) confirm a similar absence of the concept. The ability of economics to understand entrepreneurial behavior has been questioned by prominent entrepreneurship researchers (Gartner, 1990; Venkataraman, 1997; Alvarez & Barney, 2000). Baumol (1995), a neoclassical economist, has made attempts, but still admits: “Entrepreneurship is ‘the specter which haunts economic models.’”

Since I have already mentioned the two fields originated at the same time, how is it possible that economic theories cannot explain entrepreneurship?—especially since the concept of entrepreneurship developed within an economics framework. To search for the answer, I will provide a brief historical background of the evolution of both fields which leads to my research question (see Phase 3).

2.1.1 THE ENTREPRENEUR AND ECONOMICS: THE GENESIS

Richard Cantillon (circa 1680-1734), an Irish-born French economist, in his *Essai Sur la Nature du Commerce en General* (1755) was the first to develop an economic theory of entrepreneurship. His theory suggests that the entrepreneur is someone with foresight who willingly takes risks to make a profit. In fact, in the English translation of the *Essai*, entrepreneur is translated as undertaker, as in someone who undertakes risk. An important Cantillonian insight is the notion that the entrepreneur holds an *equilibrating* function in the market (Hébert & Link, 1988). This is in contrast to later economists’ notion of the entrepreneur as a *disequilibrating* function (Schumpeter, 1934), or as neither *equilibrating* nor *disequilibrating* but as existing within an equilibrium framework (Kihlstrom & Laffont, 1979). Also, unlike later economists, Cantillon (1755) did not see capital as a requirement for entrepreneurship.

Anne-Robert Jacques Turgot (1727-1781) was the next significant economist to contribute to an economic theory of the entrepreneur. Whereas Cantillon (1755) did not view entrepreneurs as capitalists, Turgot (1766) did not distinguish between either one. The capitalist was the driver of the market in Turgot’s (1766) theory, the supplier of capital and the one who employed the laborers.

Jean-Baptiste Say (1767-1832) is often regarded as a disciple of Adam Smith. But, Adam Smith, in *Inquiry into the Nature and Causes of the Wealth of Nations* (1776), provided the origins for “classical” economic theory which essentially eliminated the entrepreneur from the stage. Say reintroduces the theory of the entrepreneur in his *A Treatise on Political Economy* (1845), which was different from Cantillon’s (1755) or Turgot’s (1766). Say (1845, p. 82, 85) sees entrepreneurs as forecasters and project appraisers—and not merely managers. In Say’s *Treatise* (1845), the word entrepreneur is translated into English as

adventurer. These adventurers, according to Say (1845), use their industry to organize and direct the factors of production to achieve the “satisfaction of human wants.” In fact, Say (1845) saw entrepreneurial success as not only beneficial to the entrepreneur but as *essential* to the economy as a whole.

2.1.2 CLASSICAL ECONOMICS: THE NEGLECT

Although Adam Smith (1723-1790) is widely regarded as the “father of economics,” he essentially neglected the entrepreneurial function (Hébert & Link, 1988). Smith (1776) did not include the entrepreneurial decision maker with other kinds of “industrious people” in the economy.

David Ricardo (1772-1823) also never used the term entrepreneur in any of his writings. This is noteworthy considering Say’s (1845) treatment of the entrepreneur over a decade before Ricardo (1817) began to write. These “classical” economists laid the foundation for what would later become the near extinction of the entrepreneur in neoclassical economics.

2.1.3 NEOCLASSICAL ECONOMICS: THE ELIMINATION

Despite Cantillon’s (1755) concept of the entrepreneur’s role in the economy, later economists began to dominate the scene—and did not emphasize the entrepreneurial function (Cornelius *et al.*, 2006). As stated above, Adam Smith, in *Inquiry into the Nature and Causes of the Wealth of Nations* (1776), provided the origins for “classical” economic theory which essentially eliminated the entrepreneur from the stage. In 1870, with the publication of Walras’s *Elements of Pure Economics*, which developed the competitive general equilibrium model, the entrepreneur was at once eliminated, being “taken for granted” (Cassis & Minoglou, 2005, p. 5).

Equilibrium models create outcomes inconsistent with the entrepreneurial process. Eckhardt and Shane (2003) give four (problematic) characteristics of equilibrium theories:

- 1) Current prices convey all of the relevant information necessary to direct resources.
- 2) All information and expectations of market participants about the future can be reduced to current price bids for resources.
- 3) All decisions are optimal decisions because of perfect information among market participants.
- 4) No temporary disruptions exist in the price system which allow for the buying and selling of resources with the expectation of profit.

Despite the difficulty of reconciling the entrepreneur with an equilibrium model, some neoclassical economists have made attempts. For example, Kihlstrom and Laffont (1979) propose a model that uses equilibrium theories to identify individuals who prefer to become entrepreneurs. This model is based on uncertainty which says people will either become entrepreneurs or employees based on their “taste” for uncertainty (Shane, 2000).

2.1.4 SCHUMPETER: THE REBIRTH

Joseph Schumpeter (1883-1950) published his *Theory of Economic Development* in 1911 and constructed a theory in which the entrepreneur is the source of all dynamic change in the market. In contrast to the equilibrium theory of neoclassical economists, Schumpeter (1911) saw the entrepreneur as a disruptive, disequilibrating force, using the term “creative destruction” to refer to this innovating role the entrepreneur played in the market. Schumpeter (1934) suggested ways to identify an entrepreneurial venture by whether an entrepreneur introduces new goods or new methods of production, opens new markets or new sources of supply, or re-organizes an industry.

He rejected the neoclassical economists’ emphasis on the perfectly competitive market and emphasized the entrepreneur and the dynamics of the competitive process (Schumpeter, 1942, p. 84). He considered the entrepreneur to be a leader in innovation, not just an imitator. Schumpeter did take an explicit—and sharp—break from other economists when he excluded risk from being an attribute of entrepreneurship (Schumpeter, 1961, p. 75).

2.1.5 AUSTRIAN ECONOMICS: THE CONTINUATION

Another school of economics, the Austrian school, has been mentioned often in the entrepreneurship literature (Shane & Venkataraman, 2000; Katz *et al.*, 2003; Shane, 2004). In fact, a Task Force formed by the Entrepreneurship Division of the Academy of Management assessed the current state of doctoral education in entrepreneurship and made seven recommendations, one of which included:

A course providing an economics perspective [which] would address opportunity exploration, recognition and exploitation processes largely from the lens of Austrian economics. For instance, concepts such as “alertness” (Kirzner, 1973), “discovery” (Hayek, 1945) or “gap filling” (Liebenstein, 1968) might be examined relative to discovery and exploitation of opportunities (Shane & Venkataraman, 2000) . . . [and] the role of information and knowledge as a source of opportunity (Hayek, 1945). (Gartner *et al.*, 2003)

Austrian economics has played an important role in developing an economic theory of the entrepreneur. Austrians share the conviction that neoclassical approaches fail to offer a “satisfying theoretical framework for understanding what happens in market economics” (Kirzner, 1997). Austrian economists often referred to as “Austrians,” see the entrepreneur as the *driver* of the market economy.

Carl Menger (1840-1921) is the founder of the Austrian school, although many Austrians consider Cantillon (1755), Turgot (1766), Say (1845) *et al.* to be forerunners of the Austrian school. Carl Menger (1871) saw the entrepreneur as a capitalist owner who profits by actively seeking out the most valuable uses for his property. Menger’s (1871) entrepreneur is not merely a passive risk-bearer but a dynamic actor whose profits represent a reward for investing in risky ventures (Salerno, 1999). The entrepreneur’s most important function is anticipating future wants, estimating their relative importance, acquiring technical knowledge, and knowledge of currently available means.

Ludwig von Mises (1881-1973) is another prominent Austrian responsible for the re-birth of the school in the 20th century. In Mises’ *Human Action* (1949), he sees entrepreneurship as fundamental and inherent in every action; indeed, it “burdens every actor” (Mises, 1949: p. 253). Mises (1949) sees the entrepreneur as a capitalist-holder and distinguishes entrepreneurs from non-entrepreneurs based on who is responsible if losses occur. Similarly, he distinguishes the successful entrepreneurs from the unsuccessful due to the successful entrepreneur’s ability to not be guided by what was and is, but on his own opinion—he sees the future in a different way (Mises, 1949, p. 582).

Two often-cited Austrian economists in the entrepreneurship literature are Friedrich Hayek (1945) and Israel Kirzner (1979). Hayek (1945) is responsible for pointing out that information asymmetries exist because people possess imperfect information. Since information asymmetries exist, individual market participants can act on what they perceive to be potential profitable opportunities.

Israel Kirzner (1973) is the most prominent Austrian who has written extensively on entrepreneurship. He was a student of both Mises and Hayek. He sees entrepreneurs as alert to perceived profit opportunities and, if correct, they will make a profit; otherwise, they will suffer a loss (Kirzner, 1973). He points out that Austrians see the market as a *process* that may be tending toward, but never fully reaching, equilibrium.

While the Austrian school views the role of the entrepreneur as vital to its framework, there still exists debate as to exactly how entrepreneurial opportunities arise and whether the entrepreneur is also a capital owner (*cf.* Kirzner 1979; Rothbard, 1985). The ongoing

debates within the school suggest that even the Austrian school's theory of the entrepreneur is not complete, nor static.

2.1.6 MODERN ECONOMIC THEORIES OF THE ENTREPRENEUR

Entrepreneurship has been influenced by diverse fields such as psychology, sociology, history, and biology. It has grown considerably in the last 20 years (Davidsson *et al.*, 2001).

While economic theories of the entrepreneur did not receive much attention during this time, there has been a recent return to researching entrepreneurship within an economics framework, primarily by entrepreneurship scholars (Shane & Venkataraman, 2000; Grégoire *et al.*, 2006).

Perhaps the most comprehensive summary of economic theories of the entrepreneur comes from Hébert and Link's *The Entrepreneur* (1988). They produce a historical review of the role of the entrepreneur as conceptualized by economists. After a thorough analysis of economic theories of the entrepreneur, they conclude:

How far it has advanced understanding of the subject must remain problematic. . . . We hope that it has illuminated, however faintly, some of the dark corners of the subject. . . . Despite our best intentions, the entrepreneur remains an elusive figure. (1988, p. 114)

Over three decades ago, Peter Kilby used an analogy comparing the Heffalump from *Winnie-the-Pooh* to the elusive entrepreneur:

The search for the source of dynamic entrepreneurial performance has much in common with hunting the Heffalump. The Heffalump is a large and rather important animal. He has been hunted by many individuals using various ingenious trapping devices, but no one so far has succeeded in capturing him. All who claim to have caught sight of him report that he is enormous, but they disagree on his particularities. Not having explored his current habitat with sufficient care, some hunters have used as bait their own favorite dishes and have then tried to persuade people that what they caught was a Heffalump. However, very few are convinced, and the search goes on. (1971, p. 1).

The search continues today and I intend to systematically identify the work that has been done. By finding what has been done in the field, it will be easier to see the way forward, building upon previous research and contributing to the fields of economics and entrepreneurship. Figure III shows the area of overlap between economics and

entrepreneurship which leads to the focus of my systematic review: the economic theories of the entrepreneur.

3 PHASE 3: REVIEW QUESTIONS AND PROTOCOL

The development of focussed review questions from the scoping and mapping section are critical to the development of a protocol because other aspects of the protocol flow directly from the questions (NHS CRD Report No. 4, 2nd Edition). The aim is now to define *a priori* my review questions and establish a protocol to answer those questions.

My review question and sub questions are:

- 1) What are the economic theories of the entrepreneur?
 - a. What are the themes and sub-themes of the theories?
 - b. What are the economic theories of the entrepreneur in the entrepreneurship literature? In the economics literature?

3.1 PROTOCOL DEVELOPMENT

According to Tranfield *et al.* (2003), the protocol “is a plan that helps to protect objectivity by providing explicit descriptions of the steps to be taken.” This includes keeping track of any modifications of the questions or methodology during the systematic review process. While the methods are developed *a priori* and stated explicitly, the documentation of

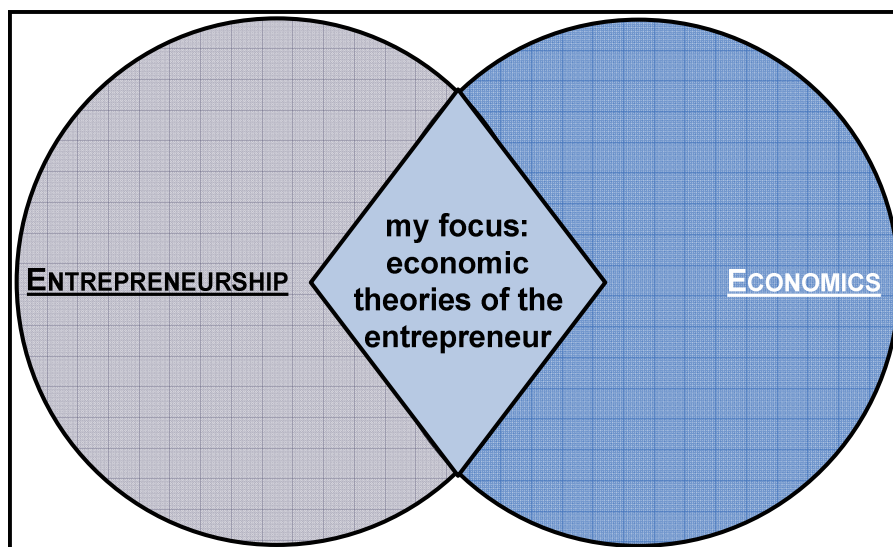


Figure III. Focus of my review question

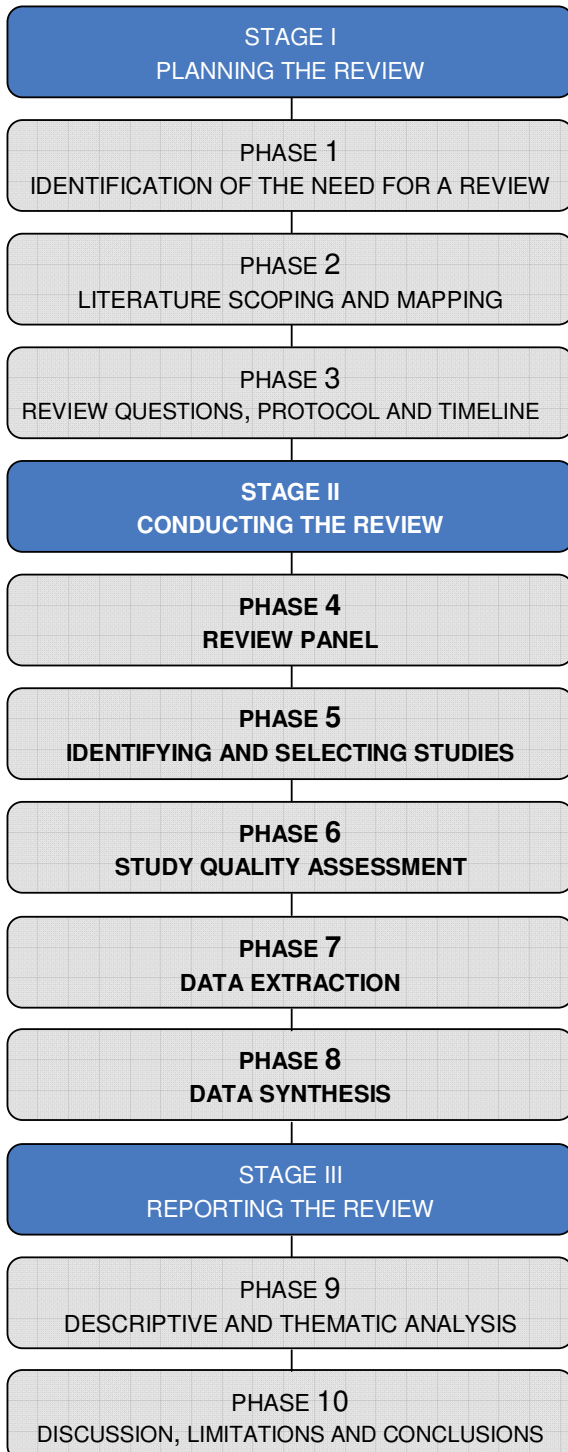
changes along the way allows for a more flexible approach during the process. This enables creativity while ensuring the review is less open to researcher bias, as compared to a traditional narrative review (Tranfield *et al.*, 2003).

The components of the protocol are more fully explicated in Stages II and III. In brief, these include: (Phase 3) forming a review panel; (Phase 4) identifying and selecting studies; (Phase 5) study quality assessment; (Phase 6) data extraction; (Phase 7) data synthesis; (Phase 8) descriptive and thematic analysis; and (Phase 9) discussion, limitations and conclusions. The aim of Stages II and III is to develop a methodology that is appropriate *and* feasible

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STAGE II

CONDUCTING THE REVIEW



Conducting the review consists of the next five phases: (4) forming a review panel; (5) identifying and selecting studies; (6) study quality assessment; (7) data extraction; and (8) data synthesis.

Phase 4. The existence of a review panel is important at all stages of the review process. My panel consists of a librarian, a systematic review specialist, my supervisor, and academic experts in the entrepreneurship and economics fields.

Phase 5. This phase identifies keywords and keyword search strings, develops selection criteria, and how/where to find relevant studies. My keywords and search strings were developed through reading and analyzing journal articles in the entrepreneurship and economics fields until I felt I had arrived at a point of saturation. I decided on two academic databases to search for scholarly, peer-reviewed articles.

Phase 6. My search strategy is followed by a quality checklist to ensure a minimum theoretical quality threshold for articles and a quality assessment scale to evaluate articles that pass through the threshold.

Phase 7. I used a data extraction form constructed from RefWorks software and Microsoft Excel to extract and retain relevant data from studies.

Phase 8. In this phase I coded articles according to themes and used Microsoft Excel to compare themes for further thematic analysis and discussion.

4 PHASE 4: REVIEW PANEL

Approaching a systematic review without the guidance and support of a review panel would be difficult. A review panel can include members with a range of expertise on the research topic, willing to help with the research content *and* the research process. This typically includes information and/or systematic review specialists, academics, and practitioners in the field(s). They should be accessible throughout the review process to give advice and feedback on the conducting and reporting of the review. The panel can be consulted individually or as a group.

My panel consists of experts whom will aid in the review process and in the fields of entrepreneurship and economics. Each member of my review panel has committed to corresponding with me at various stages of the process. A brief background of each member and their expertise and function is described below (also see Table II).

Table II. Review panel

Person	Title	Organization	Role
Prof. Andrew Kakabadse	Prof of International Management Development	Cranfield University	Supervisor; feedback on conducting, reporting and quality of the review, etc.
Dr. David Denyer	Systematic Review Expert	Cranfield University	Advise on the review process
Ms. Heather Woodfield	Librarian & Information Specialist	Cranfield University	Aid in identifying and selecting studies
Prof. Robert Hisrich	Professor of Entrepreneurship	Thunderbird University	Feedback on selection of studies, quality and data synthesis
Prof. Steven Stralser	Professor of Entrepreneurship	Thunderbird University	Feedback on selection of studies, quality and data synthesis
Prof. Peter Klein	Professor of Economics	University of Missouri	Feedback on selection of studies, quality and data synthesis
Prof. Joseph Salerno	Professor of Economics	Pace University	Feedback on selection of studies, quality and data synthesis

Supervisor: Professor Andrew Kakabadse

Professor Kakabadse is my supervisor and has been an excellent source for a macro view of my PhD process and a micro view of the individual steps to successfully complete that process. He has provided an overall research approach and strategy and given constructive feedback—all while giving me motivation to press forward. We have been communicating at least weekly to review my progress and determine how to proceed. He will be able to give feedback on the overall quality of the review.

Systematic review specialist: Dr. David Denyer

Dr. Denyer is responsible for the MRes dissertations in the Cranfield School of Management. He teaches courses on how to conduct a systematic review, including, *inter alia*, how to plan the review, map the field(s) of study, identify and evaluate studies, and conduct the systematic review. Dr. Denyer will be able to advise me on questions/concerns I may have and confirm that my review is as objective as possible.

Librarian specialist: Ms. Heather Woodfield

Ms. Woodfield has been helpful in training me on the use of academic databases and where to find specific information. She will be employed as a source of support in locating and obtaining information not available via databases and/or how to find more information than what I might think possible. In short, I intend to seek support and advice from Ms. Woodfield *qua* search analyst to confirm that my literature review is thorough.

Entrepreneurship expert: Professor Robert Hisrich

Professor Hisrich is the Garvin Professor of Global Entrepreneurship and Director of The Center for Global Entrepreneurship at Thunderbird University. He was previously the Malachi Mixon III Chair in Entrepreneurial Studies at Weatherhead School of Management. He has taught at universities in Eastern Europe, Ireland, South America, and in the US. He has authored or co-authored over twenty books and numerous journal articles. Professor Hisrich will provide feedback on the selection of studies, quality assessment, and data synthesis.

Entrepreneurship expert: Professor Steven Stralser

Professor Stralser is a clinical professor of entrepreneurship and teaches MBA-level and executive education courses at Thunderbird University. He has worked as a research economist, a strategy consultant and started multiple new ventures in the home-furnishings industry. He currently consults in business plan creation and in developing an entrepreneurial culture in large, complex organizations. He was previously faculty of the year in the Berger Entrepreneurship Program at the University of Arizona. He has multiple

contacts with entrepreneurs, angel investors, and venture capitalists. I was fortunate enough to take an entrepreneurship course from Professor Stralser at Thunderbird and have worked with him in Thunderbird's business incubator program there. He will provide feedback on the selection of studies, quality assessment, and data synthesis.

Economics and Entrepreneurship expert: Professor Peter G. Klein

Professor Klein teaches undergraduate, Master's and PhD level courses at the University of Missouri. He is Associate Director of the Contracting and Organizations Research Institute and is a Senior Faculty member of the Ludwig von Mises Institute. His research focuses on the boundaries and internal organization of the firm, with applications to diversification, innovation, entrepreneurship, and financial institutions. He taught previously at the University of California, Berkeley; the University of Georgia; the Copenhagen Business School; and served as a Senior Economist with the Council of Economic Advisers. He is a former Associate Editor of *The Collected Works of F. A. Hayek* and the author of many scholarly articles on economics and entrepreneurship. Professor Klein has accepted the invitation to act as a consultant during my systematic review. He will provide feedback and advice during my research via e-mail correspondence.

Economics expert: Professor Joseph T. Salerno

Professor Salerno teaches economics and is chair of the economics graduate program at Pace University. He is a Senior Faculty member of the Ludwig von Mises Institute, for which he frequently lectures and writes, and he serves as editor of the Institute's *Quarterly Journal of Austrian Economics*. He has written articles on many economic themes, including entrepreneurship and the history of economic thought. Professor Salerno has accepted the invitation to act as a consultant during my systematic review. He will also provide feedback and advice during my research via e-mail correspondence.

5 PHASE 5: IDENTIFYING AND SELECTING STUDIES

The aim of identifying relevant studies is to get a comprehensive list of studies that are able to answer the systematic review questions. This should be thorough and unbiased, which can be achieved by outlining the protocol procedures and documenting the review as it evolves. The validity of the findings directly relates to the comprehensiveness of the search used to find relevant studies (NHS CRD Report No. 4, 2nd Edition). The steps in Phase 5 include: (1) generating a keyword list; (2) constructing keyword search strings; (3) choosing information sources; and (4) developing selection criteria to determine the relevance of the studies. This phase should produce a comprehensive listing of core articles on which my review will be based (Tranfield *et al.*, 2003).

5.1 KEYWORD LIST

My systematic search for relevant articles began with the identification of keywords and keyword search strings (Tranfield *et al.*, 2003). I used a structured approach based on the review question (NHS CRD Report No. 4, 2nd Edition).

My keywords were generated from the scoping study (see Phase 2), cross-referencing and reading journal articles, and searching titles and abstracts in ABI/Inform using the basic search string *entrepre* AND economi** (see Pittaway *et al.*, 2004 for a similar approach). This basic keyword search string was taken from the main “facets” of the research question: the entrepreneur and economics. I then broke the research question down into other facets and identified keywords associated with each facet. The facets include: economic schools of thought; economics terms; economics *and* entrepreneurship; and prominent authors in the fields.

I felt I reached a high level of keyword saturation when I could not identify any new keywords by reading the keywords, titles, abstracts, and full texts of articles. The goal was to be thorough in identifying relevant keywords and to make my process explicit and open to

Table III. Keywords

Research question: What are the different economic theories of the entrepreneur? Root search string: <i>entrepre* AND economi*</i>				
Facets	Economic schools of thought	Economics terms	Economics <i>and</i> entrepreneurship	Prominent authors
Keywords	Austrian Classical Keynes Neo-classical Neoclassical	disequilibrium equilibrium homo macroeconomics mainstream microeconomics	alertness asymmetric creative destruction imperfect information opportunity	Baptiste Baumol Cantillon Casson Cochran Cole Fiet Gaglio Hayek Hebert Khilstrom Kilby Kirzner Knight Laffont Mises Schumpeter Shane Venkataraman

replication—and critique (David & Han, 2004). Table IV gives a list of keywords that are grouped into search strings in the next section.

5.2 KEYWORD SEARCH STRINGS

Keyword search strings combine keywords using Boolean Logic (e.g., OR, *, AND, NOT) to identify the most effective combination of keywords that return relevant studies. It is typically an iterative process with several permutations (NHS CRD Report No. 4, 2nd Edition). While this step is documented here, Ms. Woodfield (see Phase 4) the panel was consulted pre-search (and perhaps during the search) to ensure the effectiveness of search strings.

Adapting a step used by Pittaway *et al.* (2004), search strings were “progressively analyzed from the most basic to the most complex.” The aim is to achieve a more focussed search by associating generic search strings with more specific keywords (Leseure *et al.*, 2004). I used the generic search string *entrepre* AND economi** as a primary filter. I then construct searches using Boolean Logic search operators AND and/or NOT with keyword search strings. Selection criteria also help to identify relevant studies and are specified in Section 5.4. As mentioned before, I documented the search and any amendments made during the review process. As my knowledge of the field(s) grows, I realize I may identify (or clarify) new (or existing) concepts. These concepts were added to my keyword search strings when deemed necessary. This also includes details on *all* search results (see Phase 7 for a sample data extraction form) which was retained for future potential analysis. Table IV gives the main facets of the review question and keyword search strings using Boolean Logic search operators.

Table IV. Keyword search strings

Research question: What are the different economic theories of the entrepreneur?	
Root search string to be combined with each search string: <i>entrepre* AND economi*</i>	
Economic schools of thought	<i>austria* OR classical* OR keynes* OR neoclassi* OR neo-classi*</i>
Prominent authors (1)	<i>baptiste OR baumol OR cantillon OR casson OR cochran OR cole OR fiet OR gaglio OR hayek OR hebert OR khilstrom</i>
Prominent authors (2)	<i>kilby OR kirzner OR knight OR laffont OR mises OR schumpet* OR shane OR venkataraman</i>
Economics <i>and</i> entrepreneurship	<i>alert* OR "asymmetrical information" OR "creative destruction" OR "imperfect information" OR "entrepre* opportunit*" OR "opportunit* identif**"</i>
Economics	<i>disequibr* OR equilibr* OR homo oeconomicus OR macroeonomi* OR mainstream OR microeonomi*</i>

5.3 INFORMATION SOURCES

While there are multiple sources of relevant information (e.g., journal articles, books, the internet, conference papers, public reports), one purpose of a systematic review is to provide an explicit rationale and method to *systematically* find the most relevant articles that help answer the research questions. Using the rationale of David & Han (2003) and Newbert (2007), I have chosen to *systematically* include only scholarly, peer-reviewed journal articles found in academic databases. Following the logic of David & Han (2003), I justify my decision based on the quality of journal articles, the systematic “searchability” of journal articles, and their symmetrical format and terminology. I will then explicate the method I chose to identify the optimal databases for my search. I also discuss the inclusion of books and panel recommendations as a post-search addition to my review.

Quality

David & Han (2003) explain that “journal articles have been through a review process that acts as a screen for quality, allowing . . . to distil studies meeting a certain level of conceptual and methodological rigor.” Newbert (2007) further restricted his search by only including scholarly journal articles because of the rigorous peer review process articles go through prior to publication, reasoning that this usually leads to a better “technical product” (Light & Pillemer, 1984, p. 35). Cooper (1989, p. 53) argued that relying on published results is appropriate “when the published research contains several dozen, or in some cases several hundred, relevant works” (as quoted in David & Han, 2003).

Searchability

Academic databases include thousands of journal articles that are searchable by keyword, title, abstract, and/or full text. Other sources of information (e.g., books) are typically more difficult to locate systematically (David & Han, 2003). Many works must be hand-searched and it would be more difficult to locate keywords and use search strings to find relevant information. Hence, these sources were excluded.

Symmetrical format and terminology

Systematization is also more easily achieved given the similar format of journal articles. A typical article layout includes sections for an abstract, literature review, methodology, findings, implications, and conclusions. A bibliography usually follows to allow for further references. This is rarely the case when searching for information in popular or trade journals, as well as in books, magazines, and newspapers. Also, academic research tends to build on previous studies and uses similar terminology.

Having decided upon using academic databases, the next decision involved following a method to identify which databases have the greatest coverage, particularly of entrepreneurship and economics journals, functionality, and full article access (Thorpe *et al.*, 2005). Adapting a method from Pittaway *et al.* (2004; see also Leseure, 2004; Thorpe *et al.*, 2005), I chose six databases to enter the root search string *economi* AND entrepre** (see Table V). I chose the two citation indexes with the most results: ABI ProQuest (3850) and EBSCO Business Source Premier (2275).

Each of these databases is described in Table VI.

The inclusion of additional sources

Many economists have written books that have been highly influential and which contribute to the development of economics (e.g., Cantillon, 1755) and entrepreneurship (e.g., Kirzner 1973). The choice has been made and elaborated upon above to include scholarly journal articles in my *systematic* search.

However, post-search I included books and take into account panel recommendations (books, journal articles, *et al.*) as sources which are beneficial to a greater comprehension of the research. This was based on two criteria: (1) references in journal articles in which the same books are mentioned by multiple authors; and/or (2) when the review panel recommends specific titles for further research.

Table V. Database searches

Database	Search for:	Search in:	Number of entries
ABI (ProQuest)	<i>economi* AND entrepre*</i>	abstract	3850
EBSCOhost	<i>economi* AND entrepre*</i>	abstract or author-supplied abstract	2275
ISI Web of Science	<i>economi* AND entrepre*</i>	abstract	571
Science Direct	<i>economi* AND entrepre*</i>	title, abstract and keywords	516
PsycINFO (CSA)	<i>economi* AND entrepre*</i>	abstract	258
Emerald	<i>economi* AND entrepre*</i>	abstract	199

Table VI. Database descriptions*

Database	Description
ABI ProQuest	one of the most comprehensive business databases on the market; includes in-depth coverage for over 2,770 publications, with more than 1,840 available in full text.
EBSCOhost	the industry's most used business research database, providing full text for more than 2,300 journals, including full text for more than 1,100 peer-reviewed business publications; full text (PDF) for more than 350 of the top scholarly journals dating as far back as 1922.

* description taken from the databases' websites

Books were evaluated based on their relevance which was gauged by their ability to contribute to the search results by clarifying concepts or ideas. Since there was not time or justification to read entire books (many are more than 1,000 pages), journal references which include page numbers of relevant books were used to locate exact references. In addition, the review panel recommended certain passages which elucidated any concerns or contributed to findings from my systematic results. This was a more efficient use of time and a more effective, targeted approach to my research.

5.4 SELECTION CRITERIA

Having identified what to search for (keyword search strings) and where to search (academic databases), I now look at how studies were selected. Figure IV shows the different steps in the study selection process. Only studies that met all the selection criteria were retained in the core list of articles which were further assessed for quality in the next phase (Tranfield *et al.*, 2003). By predetermining selection criteria, I was able to identify and include relevant studies and exclude non-relevant studies. Typical criteria include the date of the article, context, participants, theory, language (e.g., English, Spanish), and concepts. My selection criteria follow logically from the review questions (NHS CRD Report No. 4, 2nd Edition) and have been outlined beforehand.

5.5 SYSTEMATIC REVIEW METHOD

I have adapted the outline of Newbert (2007) by creating “filters” to identify and select studies (also see David & Han, 2004). Newbert (2007) chose this approach because “it represents a more objective approach . . . to mitigate some of the bias [from using only] subjective criteria.” He chose to search for published journal articles only and then gave eight more steps that acted as filters to arrive at a core set of articles for analysis. I adapted these steps to create seven filters to include only substantively relevant articles, exclude substantively irrelevant articles, and arrive at a selection of core articles for data synthesis and analysis. I will briefly outline the seven filters below (also see Figure IV).

Filter 1

Filter 1 begins with the root search string *entrepre** AND *economi**. Articles *not* including both of these terms in their titles or abstracts were excluded.

Filter 2

Filter 2 uses the keyword search strings to search the remaining titles and abstracts of articles. Articles without one of these keywords were excluded. It should be recognized that

this was an iterative process in which keyword search strings needed adjusting to return relevant articles.

Filter 3

Filter 3 is a methodological filter. It requires that all remaining articles be theoretical or conceptual in nature, or more generally, *not* empirical or quantitative papers. This is essentially the opposite of the approach of Newbert (2007) where he sought to identify only articles with empirical content. In my case, all articles must not contain data OR test OR statistic* OR quanti* OR sample*. This filter was tested to find if it would eliminate too many relevant studies, which did not happen.

Filter 4

Filter 4 eliminated any duplicate articles or book reviews to arrive at a core set of articles for quality assessment.

Filter 5

Filter 5 selects articles that appear in journals in which multiple articles appear. Newbert (2007) explains the justification provided by David & Han (2004) in which single journal articles are more likely to be removed from core tenets of the theory being assessed. This filter required iterations to ensure this does not eliminate single relevant entrepreneurship articles in economics journals, or vice versa. Initial searches returned articles that mention entrepreneurs and economics in their abstracts but are found in medical or other irrelevant journals so this filter was retained.

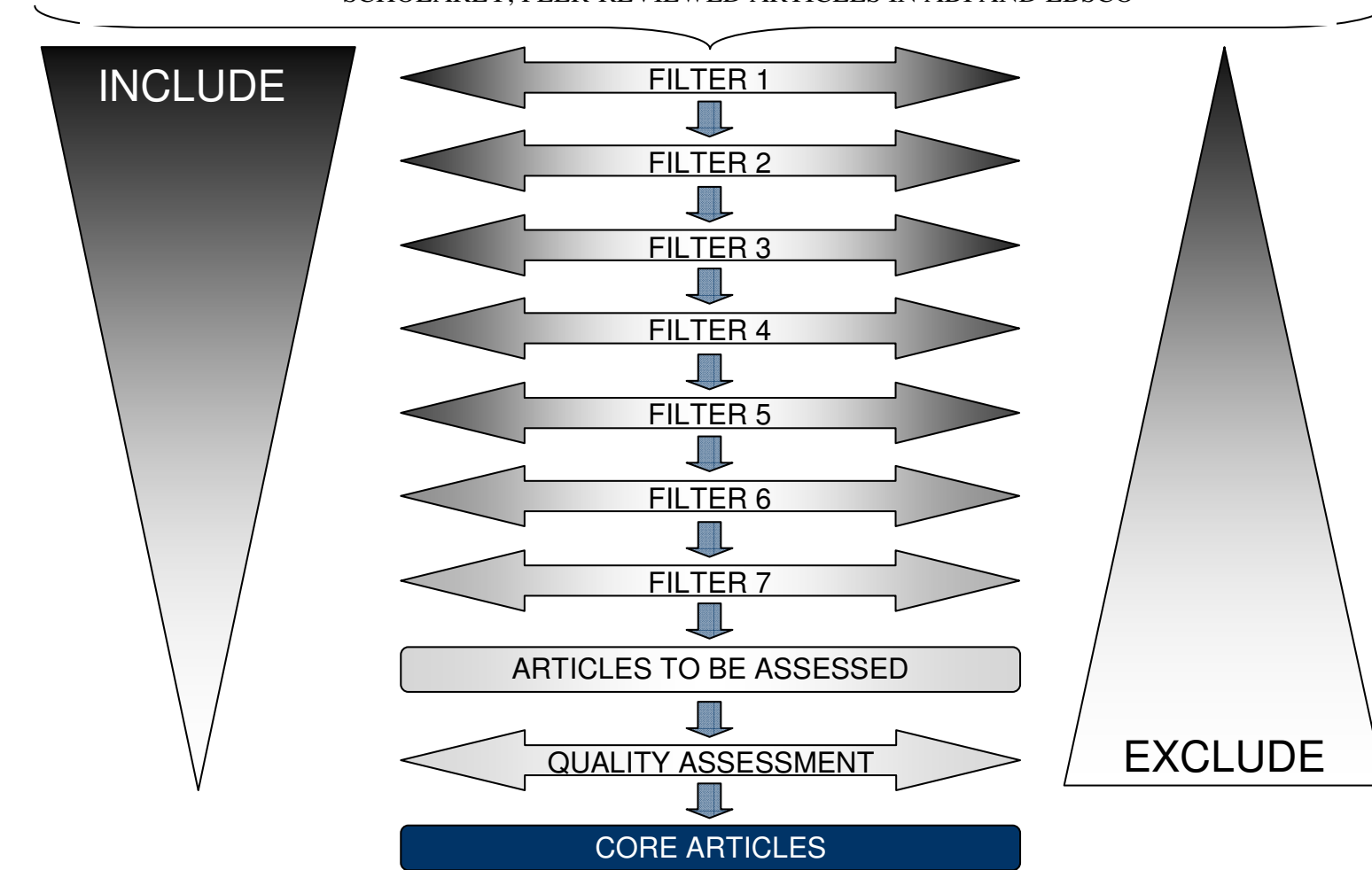
Filter 6

Filter 6 is an additional substantive filter where remaining titles and abstracts were read for quality *and* relevance. This aims to determine whether an article meets a minimum quality level and relates to an economic theory of the entrepreneur. To better assess this quality, I created a quality checklist that I applied to article titles and abstracts.

Filter 7

In filter 7, I read the remaining full articles for substantive, theoretical/conceptual relevance *and* quality. I then applied the quality checklist for full articles.

SCHOLARLY, PEER-REVIEWED ARTICLES IN ABI AND EBSCO



Filter No.	Filter type	Description
1	Substantive	All articles with entrepre* AND economi*
2	Substantive	At least one keyword from 5 keyword search strings must also appear in title or abstract
3	Methodological	At least one of 5 additional keywords must <i>not</i> appear in the title or abstract
4	Duplicates	Deletion of duplicate articles
5	Substantive	Article must appear in a journal that has returned more than one item from the filters above
6	Substantive	Remaining abstracts read for both substantive and theoretical or conceptual relevance
7	Substantive	Remaining full articles read for both substantive and theoretical or conceptual relevance

Figure IV. Systematic review method

5.5.1 RESULTS

The search results from EBSCO and ABI are shown in Table VII, broken down by filters (1-7). The root search string from both databases resulted in 6,125 articles, which, after applying the filters, resulted in 28 core articles from my search strings.

Table VII. Database search results

Filter No.	Filter type	Description	EBSCO result	ABI result	Total
1	Substantive	All articles with entrepre* AND economi*	2275	3850	6125
2	Substantive	At least one keyword from 5 keyword search strings must also appear in title or abstract	541	922	1463
3	Methodological	At least one of 5 additional keywords must <i>not</i> appear in the title or abstract	474	715	1189
4	Duplicates	Deletion of duplicate articles	269	386	655
5	Substantive	Article must appear in a journal that has returned more than one item from the filters above	269	386	655
6	Substantive	Remaining abstracts read for both substantive and theoretical or conceptual relevance	77	66	143
7	Substantive	Remaining full articles read for both substantive and theoretical or conceptual relevance	13	15	28

Filter No.	Filter type	Description	Included	Excluded	Total
1	Substantive	All articles with entrepre* AND economi*	6125		6125
2	Substantive	At least one keyword from 5 keyword search strings must also appear in title or abstract	1463	4662	6125
3	Methodological	At least one of 5 additional keywords must <i>not</i> appear in the title or abstract	1189	274	1463
4	Duplicates	Deletion of duplicate articles	655	534	1189
5	Substantive	Article must appear in a journal that has returned more than one item from the filters above	655	0	655
6	Substantive	Remaining abstracts read for both substantive and theoretical or conceptual relevance	143	512	655
7	Substantive	Remaining full articles read for both substantive and theoretical or conceptual relevance	28	115	143

5.5.2 QUALITY CHECKLIST

Quality assessment was continuous throughout the filter process, but especially in filter 6 and filter 7. I adapted a quality checklist from Kirszner *et al.* (1992, p. 100-117; also see <http://unilearning.uow.edu.au/reading/2b.html>) to function as a guide while reading and evaluating academic texts critically and analytically. It was used to determine substantive relevance in answering my research question and to construct a minimum “quality threshold” for article titles, abstracts, and full texts (NHS CRD Report No. 4, 2nd Edition). The checklist is based on a number of questions which are not scored numerically as in the quality assessment.

I developed two checklists (see Table VIII and Table IX) to evaluate theoretical article titles, abstracts, and full texts for relevance and to determine whether they should be retained to pass on to the quality assessment scale. Table VIII is the quality and relevance checklist that I used for article titles and abstracts in filter 6. Article titles and abstracts must have answered positively a majority of the questions from Table IX to move on to filter 7. Table IX uses similar elements and contains more questions to apply to the full texts of articles that have passed through filter 6. Full texts of articles must have been able to answer positively a majority of the questions to move on to further quality assessment.

Table VIII. Quality/Relevance checklist: titles and abstracts

Elements	No. Quality questions
Objective	1 Does the author make explicit the objective of the paper?
	2 Does the author have a clear approach/perspective?
Theories & concepts Contribution	3 Does the author discuss theories, models or conceptual frameworks?
	4 Does the author have a well-articulated theory?
	5 Does the author identify new areas for research?
	6 Does the author make a new contribution?
	7 Does the author improve our understanding of the theory?
	8 Does the author give new insights or provide alternative ways of thinking?
	9 Does the author make a clear connection to the existing body of literature?

Table IX. Quality/Relevance checklist: full text

Elements	No. Quality questions
Objective	<ol style="list-style-type: none"> 1. Does the author make explicit the objective of the paper? 2. Does the author have a clear approach/perspective?
Relevant literature	<ol style="list-style-type: none"> 3. Does the author present an overview of earlier work in the field? 4. Does the author cite appropriate authors? 5. Does the author cite relevant literature? 6. Does the author give sufficient definitions of existing theories? 7. Does the author represent the ideas of other accurately? 8. Does the author represent the ideas of other fairly? 9. Does the author leave out other significant contributions that have been made to the field?
Overall strength of the paper	<ol style="list-style-type: none"> 10. Does the author oversimplify complex ideas? 11. Does the author make unsupported generalizations? 12. Does the author present a balanced picture of the issue? 13. Does the author distort the ideas of others or present them out of context? 14. Does the author mention limitations of current theories? 15. Does the author critique existing theories? 16. Does the author use valid reasoning? 17. Does the author make reasonable inferences?
Theories & concepts	<ol style="list-style-type: none"> 18. Does the author discuss theories, models or conceptual frameworks? 19. Does the author have a well-articulated theory? 20. Does the author clearly define concepts? 21. Does the author link different concepts? 22. Are frameworks/diagrams/models presented clearly?
Contribution	<ol style="list-style-type: none"> 23. Does the author identify new areas for research? 24. Does the author make a new contribution? 25. Does the author improve our understanding of the theory? 26. Does the author give new insights or provide alternative ways of thinking? 27. Does the author make a clear connection to the existing body of literature?

5.5.3 A, B OR C CATEGORIES

Other authors (Pittaway *et al.*, 2004; Leseure, 2004) of systematic reviews have used the A, B or C approach to segregate articles for further examination. I used this approach to arrive at a core set of A articles. The A, B or C approach was applied to full text articles that passed the quality and relevance checklist found in Table IX.

The A category is for articles that passed the checklist, which were then retained for the quality assessment phase (see Phase 6). The B category is for articles that needed further evaluation to decide whether they should be retained for quality assessment or discarded. B articles were evaluated *after* reading through all A articles for a better understanding of relevance and quality. Essentially, B articles ultimately became either A or C articles, thus eliminating the B category. The C category is for articles that were discarded because of

irrelevance and/or low quality. Table X shows the initial number of A, B and C articles in round 1. In round 2, eight articles were taken from the B category and moved into A category to arrive at twenty-eight core articles.

Table X. A, B or C search results

	A	B	C	Total
Round 1	20	42	81	143
Round 2	28	--	115	143

6 PHASE 6: STUDY QUALITY ASSESSMENT

The relevant studies (A studies) went through a detailed quality assessment to strengthen the data synthesis (Phase 8) and interpretation of results. Reviews should have robust quality assessment procedures to guarantee that all studies have a minimum level of quality (NHS CRD Report No. 4, 2nd Edition).

I developed quality checklists in Phase 5 and later developed a quality assessment scale. Quality scales are scored numerically to provide quantitative data and to give an overall assessment of study quality. Both checklists and scales were part of the data extraction form (see Phase 7).

Since no previous quality scale could be found to assess theoretical and conceptual articles, I developed a scale from multiple sources, including: the Academy of Management Guidelines for Reviewers; the Critical Appraisal Skills Programme (CASP); the Quality Criteria tool found in Pittaway *et al.* (2004); and the NHS CRD Report No. 4, 2nd Edition. These were utilized to develop the components of the scale while considering the scope and purpose of the assessment. I also attempted to relate the scale to the research question. Whereas this is a subjective scale, I have at least made it explicit.

The quality scale can be found in Table XI. There are five elements in the quality assessment: (1) the literature review; (2) theoretical clarity; (3) theory robustness; (4) contribution; and (5) overall assessment. The scores are from 0 to 3 (0-absence, 1-low, 2-medium, 3-high) including a not applicable option if an element does not apply to the assessment of the article.

This scale was applied to the A articles that passed the article full text quality checklist in filter 7. The scores are reported in descriptive tables (see Phase 9).

Table XI. Quality assessment

Elements	Level				
	0 - Absence	1 - Low	2 - Medium	3 - High	Not applicable
1. Literature review	the article does not provide enough information to assess this element	literature review is inadequate; no reference to prior theory or prominent authors	basic understanding of the issues around the topic being discussed	deep and broad knowledge of relevant literature	this element is not applicable to this study
2. Theoretical clarity	the article does not provide enough information to assess this element	others' theories misrepresented or taken out of context; basic concepts not clear	the author attempts to explain others' theories and build upon them but lacks significant theoretical development	concepts clearly defined, clarifies previous gaps or shortcomings of theories	this element is not applicable to this study
3. Theory robustness	the article does not provide enough information to assess this element	no underlying theory base; weak portrayal of others' theories; makes unsupported generalizations	attempts to link others' concepts in new ways but still insignificant; theory not well-articulated	deep and broad knowledge of relevant theory; builds upon existing theories or creates new theories	this element is not applicable to this study
4. Contribution	the article does not provide enough information to assess this element	does not make an important contribution; it is not clear in the advances it makes	contribution to knowledge is trivial; does build upon existing theory using others' ideas	makes a new contribution to existing knowledge, expanding the way the issue was explained so far; fills an important theory gap	this element is not applicable to this study
5. Strength of the paper	the article does not provide enough information to assess this element	the author oversimplifies complex issues; makes unsupported generalizations	the author makes reasonable inferences; mentions limitations of others' theories, but adds nothing new	the author presents a balanced picture of current theory, mentions their limitations using valid reasoning and is able to simplify complex ideas	this element is not applicable to this study

7 PHASE 7: DATA EXTRACTION

The data extraction phase was designed to “accurately extract data on relevant features and results of selected studies” (NHS CRD Report No. 4, 2nd Edition). This was achieved through the creation of a data extraction form (Tranfield *et al.*, 2003). Table XII shows a sample data extraction form (created using RefWorks and MS Excel) which contains both general information (title, author, date, and journal) and specific information (themes, key findings, and reason for inclusion). The balance should be between forms that are too detailed, which may create a waste of time, and too general, which may omit important data

Table XII. Data extraction form

Ref ID	11
Author(s)	Shane,Scott; Venkataraman,S.
Title	The promise of entrepreneurship as a field of research
Journal title	The Academy of Management Review
Date	2000
Volume ID	25
Month or season	Jan
Series ID	1
Journal ranking (ABS Quality)	4
Field	entrepreneurship
Theme	definition of entrepreneurship
Subthemes	entrepreneurial opportunities, opportunity exploitation
Quality checklist items	1-27
Quality assessment 1	3
Quality assessment 2	3
Quality assessment 3	3
Key findings	the development of a conceptual framework for explaining entrepreneurship
Abstract	To date, the phenomenon of entrepreneurship has lacked a conceptual framework. This paper draws upon previous research conducted in the different social science disciplines and applied fields of business to create a conceptual framework for the field. With this framework, the paper explains a set of empirical phenomena and predicts a set of outcomes not explained or predicted by conceptual frameworks already in existence in other fields.
Keywords	na
Reason for inclusion	develops a conceptual framework using a disequilibrium approach
Notes	include as a core article

(NHS CRD Report No. 4, 2nd Edition).

According to Tranfield *et al.* (2003), the data extraction form has at least three important functions: (1) the form is tied to the review questions and the assessment of the included studies, which provides a visual representation; (2) it acts as a historical record which can be used to document the process; and (3) it acts as a repository from which the later data synthesis (see Phase 8) emerged. This information was used to tabulate the data into a descriptive and thematic analysis (see Phase 9).

8 PHASE 8: DATA SYNTHESIS

This phase includes the synthesis of the data extracted from relevant studies using the data extraction form. Its aim is simply “to collate and summarize the results” of the included studies (NHS CRD Report No. 4, 2nd Edition). This was achieved through a descriptive and thematic analysis, usually done through tabulation (see Phase 9), and linked to the review question.

This phase is divided into two parts: (1) data analysis, or “dissecting” individual studies into their component parts, extracting key concepts, ideas, and theories; and (2) data synthesis, or making connections between the individual studies, overall themes and generalizations, and re-casting the data into a new arrangement. To accomplish both parts of data synthesis, I read and coded the articles looking for main themes and prominent sub-themes (see Section 8.1). The themes were entered into a Microsoft Excel worksheet to compare articles with similar themes. These contributed to a more effective synthesis of the data.

8.1 META-SYNTHESIS: AN INDUCTIVE APPROACH

I used an inductive approach to analyze and synthesize studies. According to Tranfield *et al.* (2003), this approach is “more likely to provide a means of drawing insight from studies and for addressing issues pertinent to management research.” This process was outlined by Thomas (2003) and used by Leseure *et al.* (2004). Thomas (2003) recommends this approach as a “systematic procedure for analyzing . . . data where the analysis is guided by specific objectives.” It can be used as a guide to condense extensive data into themes and to develop a model or theory about the underlying themes (adapted from Thomas, 2003).

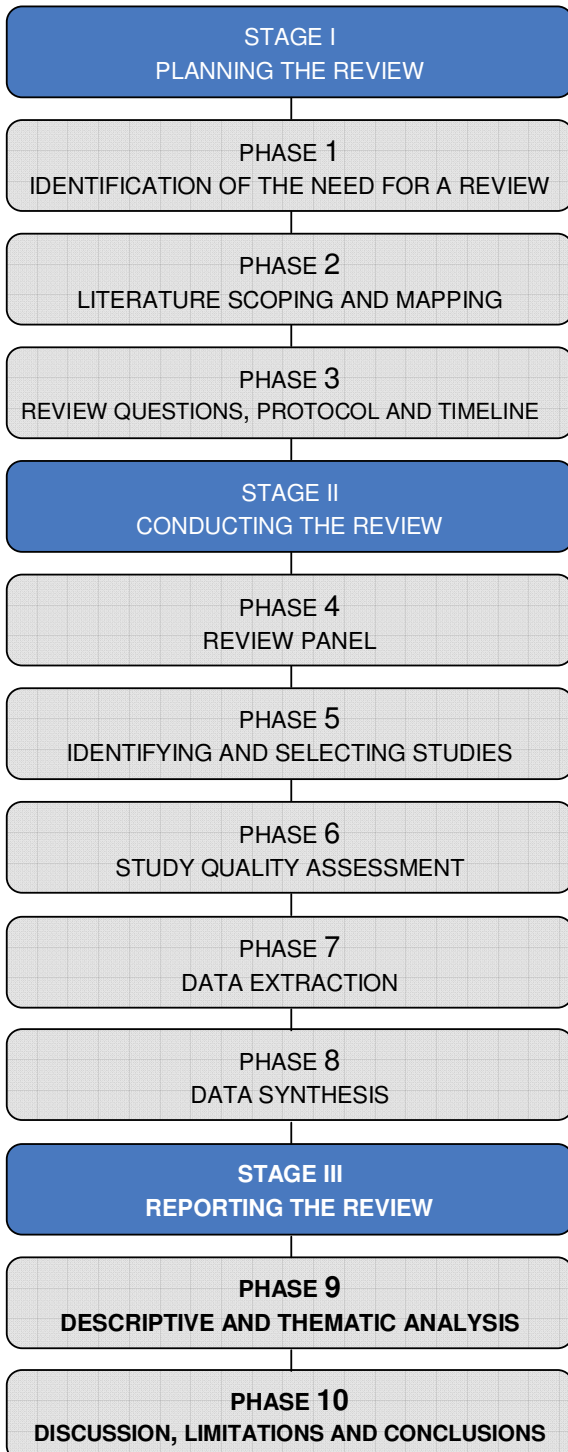
The process of inductive coding begins with formatting the articles in a similar way (font size, margins, etc.) which was easier because of the similar format of journal articles. The texts are then read in detail while looking for and coding common themes both within studies and intra-studies. Each theme and sub-theme is refined through continuing revision.

The emerging themes and categories from the inductive approach helped me to develop a model or framework which summarizes the data and conveys key themes (Thomas, 2003).

One type of inductive method is meta-synthesis which has been developed to fill the gap between narrative reviews and meta-analysis—since meta-analysis is not likely to be appropriate for management research (Tranfield *et al.*, 2003). Meta-synthesis can be used to identify theories, generalizations, and grand narratives from studies. It provides a way of taking into account the similarities and differences in concepts and ideas from different studies (Sandelowski *et al.*, 1997, p. 366).

STAGE III

Reporting the review



Reporting the review consists of the final two phases: (9) descriptive and thematic analysis; and (10) discussion, limitations and conclusions.

Phase 9. Descriptive and thematic analyses were achieved by extracting relevant data from the data extraction form; descriptive analyses are in tabular format. Descriptive analysis tables include authors, year published, journal, etc. Thematic analysis provides a summary and synthesis of themes from data analysis that were identified through coding (see Phase 8).

Phase 10. The final phase of the review discusses the findings, limitations and conclusions that can be drawn from the systematic review. I also identify opportunities for future research and my learning points. As part of the purpose of the review is to disseminate knowledge into the hands of academics and practitioners, I hope this will be achieved through conference presentations and journal articles.

9 PHASE 9: DESCRIPTIVE AND THEMATIC ANALYSIS

Two types of reports were produced from conducting the review: a descriptive and a thematic analysis.

9.1 DESCRIPTIVE ANALYSIS

The descriptive analysis was achieved using the categories from the data extraction form (Tranfield *et al.*, 2003). This included authors, dates, citations, journals, year published, journal quality, etc. These have been organized into descriptive tables presented in this section.

9.1.1 CORE ARTICLES

The descriptive analysis is based on 36 core articles¹: 28 articles from the search results (78%); 4 articles from the scoping study (11%); and 4 books identified through cross-referencing and based on panel recommendations (11%) (see Figure V).

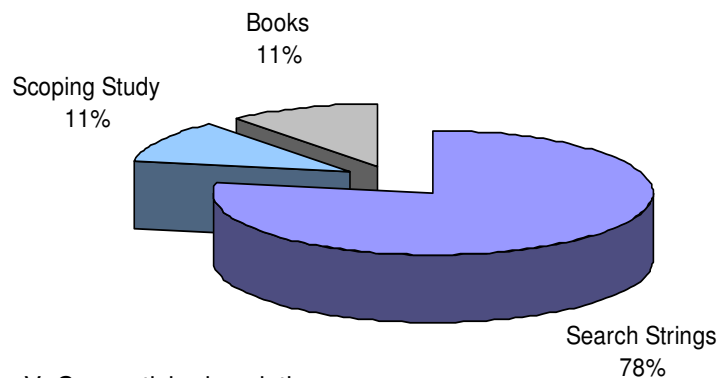


Figure V. Core article description

¹ Core articles include books, which are mainly used for thematic analysis.

9.1.2 CORE AUTHORS

Table XIII lists the thirty-two core authors included in the review, along with the number of articles per author and the corresponding percentage of total articles. Kirzner, an Austrian economist, is mentioned most frequently (8%), followed by Baumol (6%), a neoclassical economist, and economists Hébert and Link (6%).

Table XIII. Core authors and number of articles

#	Author(s)	# Articles	% Total articles
1	Kirzner, I.	3	8%
2	Baumol, W.	2	6%
3	Hebert, R. & Link, A.	2	6%
4	Adaman, F. & Devine, P.	1	3%
5	Bianchi, M. & Henrekson, M.	1	3%
6	Buenstorf, G.	1	3%
7	Casson, M.	1	3%
8	Casson, M. & Wadeson, N.	1	3%
9	Cheah, H.	1	3%
10	Douhan <i>et al.</i>	1	3%
11	Ebner, A.	1	3%
12	Endres, A. & Woods, C.	1	3%
13	Francois, A.	1	3%
14	Frank, M.	1	3%
15	Hamilton, R. & Harper, D.	1	3%
16	Hayek, F.	1	3%
17	Holcombe, R.	1	3%
18	Kent, C.	1	3%
19	Knight, F.	1	3%
20	Koolman, G.	1	3%
21	Leibenstein, H.	1	3%
22	Long, W.	1	3%
23	McDaniel, B.	1	3%
24	McMullen, J. & Shepherd, D.	1	3%
25	McMullen, J. <i>et al.</i>	1	3%
26	Metcalfe, J.	1	3%
27	Montanye, J.	1	3%
28	Murphy, P. <i>et al.</i>	1	3%
29	Plummer, L. <i>et al.</i>	1	3%
30	Shane, S. & Venkataraman, S.	1	3%
31	Yu, T.	1	3%
32	Zaratiegui, J. & Rabade, L.	1	3%
	<i>Total</i>	36	100%

9.1.3 CORE JOURNALS

The core articles (excluding the 4 books) were taken from 20 academic journals. The journal with the most number of core articles (19% of the total) was *Small Business Economics*, a journal in the field of entrepreneurship and small business. Table XIV lists the 20 journals, the number of articles per journal, and the percentage of total articles.

Table XIV. Core journals and number of articles

#	Publication	# Articles	% Total articles
1	Small Business Economics	6	19%
2	Journal of Business Venturing	3	9%
3	Review of Austrian Economics	3	9%
4	Academy of Management Review	2	6%
5	Journal of Economic Behavior & Organization	2	6%
6	Journal of Economic Studies	2	6%
7	American Economic Review	1	3%
8	American Journal of Small Business	1	3%
9	Economica	1	3%
10	Journal of Economic Education	1	3%
11	Journal of Economic Issues	1	3%
12	Journal of Economic Literature	1	3%
13	Journal of Evolutionary Economics	1	3%
14	Journal of the History of Economic Thought	1	3%
15	Journal of Management History	1	3%
16	Journal of Technology Transfer	1	3%
17	Kyklos	1	3%
18	Management Decision	1	3%
19	Review of Political Economy	1	3%
20	The Independent Review	1	3%
	<i>Total</i>	32	100%

9.1.4 CORE YEARS

The core articles range from the years 1945-2007, with almost half from 2005 or later (48%). Two-thirds of the articles are from 2000 or later (see Figure VI). This may be due to a recent renewed interest in economics' contributions to entrepreneurship, and a possible move away from the focus on psychological traits of entrepreneurs.

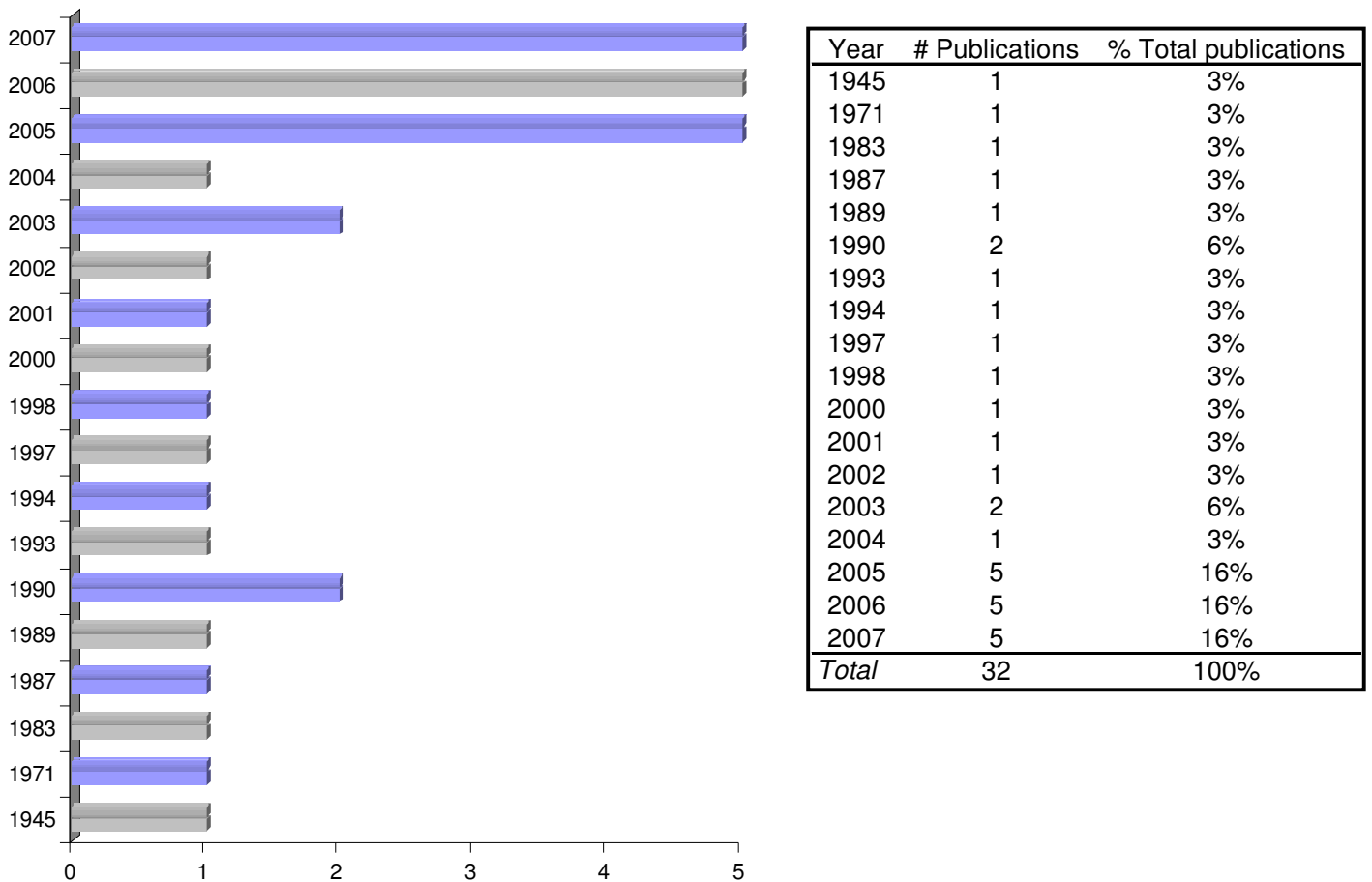
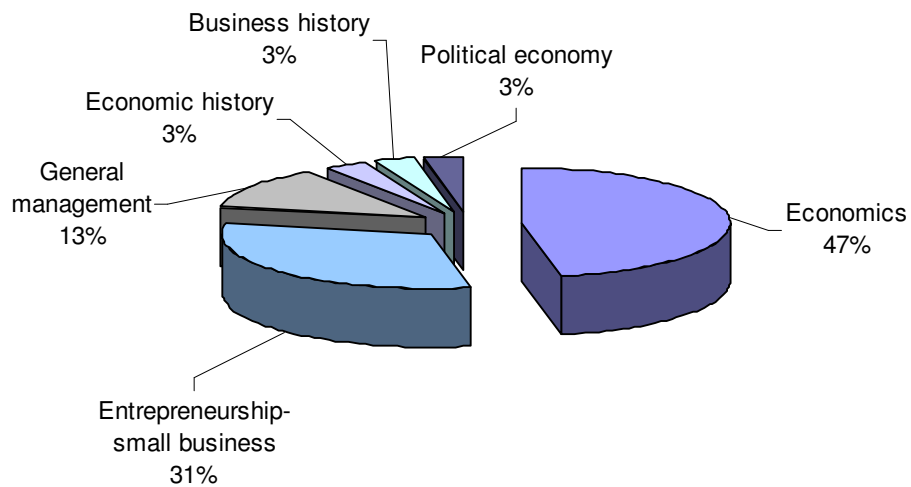


Figure VI. Core article years

9.1.5 CORE FIELDS

Nearly half (47%) of the core articles came from economics journals, with entrepreneurship/small business journals making up the next largest field. Figure VII shows the field, with the number of articles and publications, including percentages.



#	Field	# Articles	% Total articles	# Publications	% Total publications
1	Economics	15	47%	11	55%
2	Entrepreneurship-small business	10	31%	3	15%
3	General management	4	13%	3	15%
4	Economic history	1	3%	1	5%
5	Business history	1	3%	1	5%
6	Political economy	1	3%	1	5%
	<i>Total</i>	32	100%	20	100%

Figure VII. Core fields

9.1.6 CITATIONS OF CORE AUTHORS

I used Google Scholar to find the number of times each core article had been cited by other authors. Table XV lists the authors grouped by most citations. It is interesting to note that eight of the top ten authors with the most citations are economists, including prominent Austrian economists, Hayek and Kirzner. Of course, *ceteris paribus*, older articles would have the most citations. While generally this is the case, Shane and Venkataraman's 2000 note in the *Academy of Management Review* has proven to be very influential. This article does take an economics framework for analyzing entrepreneurship, including aspects of Austrian economics (e.g., disequilibrium). The influence of Shane and Venkataraman's (2000) article could be the reason my search results contained the majority of articles from 2000 or later.

Table XV. Core authors and times cited

#	Year	Author(s)	Title	# Times cited (Google Scholar)
1	1921	Knight, F.	<i>Risk, Uncertainty, and Profit</i>	2305
2	1945	Hayek, F.	The Use of Knowledge in Society	2200
3	1973	Kirzner, I.	<i>Competition and Entrepreneurship</i>	1240
4	2000	Shane, S. & Venkataraman, S.	The Promise of Entrepreneurship as a Field of Research	762
5	1990	Baumol, W.	Entrepreneurship: Productive, Unproductive, & Destructive	620
6	1997	Kirzner, I.	Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach	520
7	1979	Kirzner, I.	<i>Perception, Opportunity, and Profit</i>	414
8	1988	Hebert & Link	<i>The Entrepreneur</i>	144
9	1993	Baumol, W.	Formal Entrepreneurship Theory in Economics: Existence & Bounds	88
10	1983	Long, W.	The Meaning of Entrepreneurship	35
11	2005	Casson, M.	Entrepreneurship and the Theory of the Firm	33
12	1990	Cheah, H.	Schumpeterian and Austrian Entrepreneurship: Unity Within Duality	24
13	2006	McMullen, J. & Shepherd, D.	Entrepreneurial Action and the Role of Uncertainty in the Theory of the Entrepreneur	20
14	1971	Koolman, G.	Say's Conception of the Role of the Entrepreneur	19
15	2001	Yu, T.	Entrepreneurial Alertness and Discovery	18
16	2003	Holcombe, R.	The Origins of Entrepreneurial Opportunities	17
17	2004	Metcalfe, J.	The Entrepreneur and the Style of Modern Economics	15
18	2005	Bianchi, M. & Henrekson, M.	Is Neoclassical Economics still Entrepreneurless?	13
19	2002	Adaman, F. & Devine, P.	A Reconsideration of the Theory of Entrepreneurship: A Participatory Approach	12
20	1989	Kent, C.	The Treatment of Entrepreneurship in Principles of Economics Textbooks	10
21	1987	Leibenstein, H.	Entrepreneurship, Entrepreneurial Training, and X-Efficiency Theory	10
22	1994	Hamilton, R. & Harper, D.	The Entrepreneur in Theory and Practice	8
23	1998	Frank, M.	Schumpeter on Entrepreneurs and Innovation: A Reappraisal	7
24	2006	Endres, A. & Woods, C.	Modern Theories of Entrepreneurial Behavior: A Comparison and Appraisal	4
25	2005	McDaniel, B.	A Contemporary View of Joseph Schumpeter's Theory of the Entrepreneur	2
26	2005	Ebner, A.	Entrepreneurship and Economic Development: From Classical Political Economy to Economic Sociology	1
27	2006	Hebert, R. & Link, A.	The Entrepreneur as Innovator	1
28	2007	McMullen, J. <i>et al.</i>	What is an Entrepreneurial Opportunity?	1
29	2006	Murphy, P. <i>et al.</i>	A Conceptual History of Entrepreneurial Thought	1
30	2007	Buenstorf, G.	Creation and Pursuit of Entrepreneurial Opportunities: An Evolutionary Economics Perspective	0
31	2007	Casson, M. & Wadeson, N.	The Discovery of Opportunities: Extending the Economic Theory of the Entrepreneur	0
32	2007	Douhan <i>et al.</i>	Israel M. Kirzner: An Outstanding Austrian Contributor to the Economics of Entrepreneurship	0
33	2003	Francois, A.	The Political Entrepreneur and the Coordination of the Political Process: A Market Process Perspective of the Political Market	0
34	2006	Montanye, J.	Entrepreneurship	0
35	2007	Plummer, L. <i>et al.</i>	An Essay on the Origins of Entrepreneurial Opportunity	0
36	2005	Zaratiegui, J. & Rabade, L.	Capital Owners, Entrepreneurs and Managers: A Marshallian Scheme	0

9.1.7 CORE AUTHORS CITING CORE AUTHORS

I aimed to see whether or not core authors were citing other core authors, and which author/article was receiving the most citations. This approach has numerous limitations which I have attempted to take into account. First, authors from previous years would not be able to cite more current authors. To account for this I place a “na” (not applicable) in the corresponding cell. A “1” indicates whether the author was cited. All authors of core articles are in the first column while only authors who received at least one citation are in the top row.

Table XVI shows there were 104 total citations between authors of core articles. The most cited reference was Kirzner’s (1973) book, *Competition and Entrepreneurship*. It is also worth mentioning that the top three most cited were books. Another interesting result is that four of the top five most cited authors are Austrian economists, showing the influence of the Austrian (as compared to the neoclassical) school on entrepreneurship.

Table XVI. Core authors citing core authors

Cited author(s)	Adaman, F. & Devine, P.	Baumol, W.	Baumol, W.	Bianchi, M. & Henrekson, M.	Hayek, F.	Hebert, R. & Link, A.	Hebert, R. & Link, A. (book)	Holcombe, R.	Kirzner, I.	Kirzner, I. (book)	Kirzner, I. (book)	Knight, F.	Leibenstein, H.	Long, W.	McMullen, J. & Shepherd, D.	Shane, S. & Venkataraman, S.		
Citing author(s)	Year	2002	1990	1993	2005	1945	2006	1982, 1988	2003	1997	1973	1979	1921	1987	1983	2006	2000	
Adaman, F. & Devine, P.	2002	--	--	na	na	1	na	1	na	1	1					na		
Baumol, W.	1990	na	--	na	na		na		na	na						na	na	
Baumol, W.	1993	na	1	--	na		na		na	na						na	na	
Bianchi, M. & Henrekson, M.	2005		1		--	1	na			1			1			na		
Buenstorf, G.	2007					1				1	1							
Casson, M.	2005						na				1	1	1			na		
Casson, M. & Wadeson, N.	2007										1	1	1					
Cheah, H.	1990	na		na	na		na	na	na	na	1					na	na	
Douhan <i>et al.</i>	2007		1		1	1		1	1	1	1	1						
Ebner, A.	2005					1	na	1		1			1			na		
Endres, A. & Woods, C.	2006			1						1	1	1					1	
Francois, A.	2003		1		na		na			1	1	1				na		
Frank, M.	1998	na			na		na		na							na	na	
Hamilton, R. & Harper, D.	1994	na			na		na		na	na	1	1		1	1	na	na	
Hayek, F.	1945	na	na	na	na	--	na	na	na	na	na	na		na	na	na	na	
Hebert, R. & Link, A.	2006							1										
Holcombe, R.	2003				na	1	na		--		1	1				na		
Kent, C.	1989	na	na	na	na		na		na	na	1	1	1			na	na	
Kirzner, I.	1997	na			na	1	na		na	--	1		1			na	na	
Koolman, G.	1971	na	na	na	na		na	na	na	na	na	na		na	na	na	na	
Leibenstein, H.	1987	na	na	na	na		na	1	na	na	1	1	1		--	na	na	
Long, W.	1983	na	na	na	na		na	1	na	na	1	1		na	--	na	na	
McDaniel, B.	2005						na									na		
McMullen, J. & Shepherd, D.	2006		1			1		1		1	1	1	1			--	1	
McMullen, J. <i>et al.</i>	2007							1		1	1						1	
Metcalfe, J.	2004	1	1	1	na		na				1					na		
Montanye, J.	2006							1			1		1					
Murphy, P. <i>et al.</i>	2006		1	1		1	1			1	1		1			1	1	
Plummer, L. <i>et al.</i>	2007							1	1	1	1	1	1			1	1	
Shane, S. & Venkataraman, S.	2000	na		1	na	1	na		na	1	1		1			na	--	
Yu, T.	2001	na			na		na		na	1	1	1				na	na	
Zaratiegui, J. & Rabade, L.	2005						na									na		
# Total cites		1	7	4	1	10	1	7	3	12	23	13	13	1	1	2	5	104
% Total cites		0.96%	6.73%	3.85%	0.96%	9.62%	0.96%	6.73%	2.88%	11.54%	22.12%	12.50%	12.50%	0.96%	0.96%	1.92%	4.81%	100.00%

9.1.8 MOST CITED AUTHORS IN CORE ARTICLES

In addition to the most cited authors within core articles, I searched each core article to find the most cited author (see Table XVII). Israel Kirzner and Joseph Schumpeter received the most citations (13) within an article and occupy the top 7 spots. Israel Kirzner also received the most citations in 11 out of 32 articles (34%), more than any other author.

Table XVII. Most cited authors in core articles

#	Year	Authors	Most cited author in article	# citations	# Citations in article
1	2007	Douhan <i>et al.</i>	Kirzner, I.	13	55
2	1998	Frank, M.	Schumpeter, J.	13	38
3	2006	McMullen, J. & Shepherd, D.	Kirzner, I.	9	110
4	2005	Ebner, A.	Schumpeter, J.	8	56
5	2005	McDaniel, B.	Schumpeter, J.	8	17
6	2001	Yu, T.	Kirzner, I.	7	62
7	2002	Adaman, F. & Devine, P.	Foss, N.; Kirzner, I.	6	102
8	2007	Buenstorf, G.	Witt, U.	6	37
9	2005	Casson, M.	Casson, M.	6	47
10	2006	Endres, A. & Woods, C.	Kirzner, I.	6	67
11	1997	Kirzner, I.	Hayek, F.	6	115
12	2005	Bianchi, M. & Henrekson, M.	Baumol, W.	5	86
13	2003	Holcombe, R.	Kirzner, I.	5	31
14	2007	Casson, M. & Wadeson, N.	Casson, M.	4	28
15	2003	Francois, A.	Harper, D.	4	41
16	1994	Hamilton, R. & Harper, D.	Casson, M.	4	55
17	2006	Hebert, R. & Link, A.	Schumpeter, J.	4	19
18	1989	Kent, C.	Kirzner, I.	4	47
19	1971	Koolman, G.	Hayek, F.; Popper, K.	4	59
20	1990	Cheah, H.	Schumpeter, J.	3	22
21	1987	Leibenstein, H.	Leibenstein, H.	3	17
22	1983	Long, W.	Kirzner, I.	3	12
23	2004	Metcalfe, J.	Baumol, W.; Schumpeter, J.	3	37
24	2006	Murphy, P. <i>et al.</i>	Kirzner, I.	3	96
25	2007	Plummer, L. <i>et al.</i>	Kirzner, I.; McGrath, R. G.; Shane, S.; Williamson, O. E.	3	52
26	2000	Shane, S. & Venkataraman, S.	Aldrich, H.; Baumol, W.	3	59
27	2005	Zaratiegui, J. & Rabade, L.	Marshall, A.	3	9
28	1990	Baumol, W.	Finley, M.	2	49
29	1993	Baumol, W.	Baumol, W.	2	11
30	2007	McMullen, J. <i>et al.</i>	Kirzner, I.; Shane, S.	2	22
31	2006	Montanye, J.	Leibenstein, H.; Mises, L.; Porter, M.; Schumpeter, J.; Tullock, G.; Wilson, E.	2	48
32	1945	Hayek	na	na	na

9.1.9 JOURNAL RANKINGS

The 20 journals included in the core articles are ranked according to highest quality in Table XIX according to the Association of Business Schools 2007 and Cranfield University School of Management 2006 rankings. The interpretation of the rankings is shown in Table XVIII.

Table XVIII. Interpretation of journal rankings

Cranfield University School of Management		Associaton of Business Schools	
Rank	Interpretation	Rank	Interpretation
4	World leading	4	A top journal
3	Top international	3	A highly regarded journal
2	Lower international	2	A well regarded journal
1	National	1	A recognized journal
		0	A non-recognized journal

Also included is the ABS impact factor. The impact factor reflects the frequency with which published articles from a journal have been cited by other journals. The impact factor ranges from 2-4. A “4” indicates a well-cited journal, typically highly circulated and well-respected. A “3” indicates influential journals that many authors will search and cite, though less frequently. A “2” is for journals with little impact and which receive fewer citations.

Given that only 45% of my journal articles are from journals with a 3 or 4 ranking (see Table XIX), the question may arise as to the quality of the articles. Quality was an important factor in deciding which articles to include. However, due to the targeted search, I found that relevance was a more important factor. For example, the journal *Review of Austrian Economics* is not even ranked, yet due to the strong influence of Austrian economics on the field of entrepreneurship, it contains many important articles. Another example would be Murphy’s (2006) article, “A Conceptual History of Entrepreneurial Thought,” which received a high score on my quality assessment tool due to its relevance and excellent analysis of entrepreneurial thought using various schools of economics. Also, journal quality does not necessarily reflect on the particular quality of an article—not every article in a 2 star journal is necessarily a 2 star article.

Table XIX. Core journal rankings

#	Publication	ABS '07 Ranking (0-4)	Cranfield '06 Ranking (1-4)	ABS Citation Impact (2 - 4)
1	Journal of Business Venturing	4	3	4
2	Academy of Management Review	4	4	4
3	American Economic Review	4	4	4
4	Journal of Economic Literature	4	4	4
5	Small Business Economics	3	3	2
6	Journal of Economic Behavior & Organization	3	2	2
7	Economica	3	4	2
8	Journal of Evolutionary Economics	3	3	2
9	Kyklos	3	3	2
10	Journal of Economic Studies	2	na	na
11	Journal of Economic Education	2	na	2
12	Journal of Economic Issues	2	2	2
13	Review of Political Economy	2	na	na
14	Journal of Management History	1	na	na
15	Management Decision	1	1	--
16	Review of Austrian Economics	na	na	na
17	American Journal of Small Business	na	na	na
18	Journal of the History of Economic Thought	na	na	na
19	Journal of Technology Transfer	na	na	na
20	The Independent Review	na	na	na

9.2 THEMATIC ANALYSIS

The second report is in the form of a thematic analysis which identifies key emerging themes to answer the research questions. This includes reporting the common themes across studies from the meta-synthesis section (see Phase 8). In order to identify themes, articles were coded and analyzed to determine the most common and recurring themes.

(In addition to these major themes, Table XX provides a summary from various economists on the economic functions of the entrepreneur. While these economists will not be discussed in detail, it does give a useful overview of the different economic functions that the entrepreneur is said to possess.)

I will first discuss the contributions of neoclassical economics to entrepreneurship as identified in the core articles, attempting to answer the question: Is neoclassical economics still entrepreneurless? (Bianchi & Henrekson, 2005).

Since the thematic analysis is meant to identify the economic theories of the entrepreneur, including their prominent themes and sub themes, I will mainly focus on the two most common themes and influential economic theories of the entrepreneur: the Schumpeterian (1934) and Kirznerian (1973, 1979, 1997) entrepreneurs (also see Figure VIII for an overview of the conceptual history of many economic functions and attributes of the entrepreneur).

The main themes identified in the core articles are from Kirzner's, i.e., the Austrian, theory of the entrepreneur. These include entrepreneurial opportunity identification and exploitation, uncertainty and risk, discovery, alertness, the market as a process, market disequilibrium, and knowledge. The majority of the analysis will focus on these themes, since they continue to be discussed in recent entrepreneurship literature (Shane & Venkataraman, 2000; McMullen *et al.*, 2007; Plummer *et al.*, 2007).

9.2.1 NEOCLASSICAL ECONOMICS: ENTREPRENEURLESS?

It is not new that many scholars have questioned the ability of neoclassical economics to explain or conceptualize entrepreneurship (Baumol, 1993; Kirzner, 1997), mainly for methodological reasons, due to the dynamic nature of the entrepreneur whom eludes

Table XX. Economic functions of the entrepreneur

Function	Economists
Person who assumes risk associated with uncertainty	Cantillon, Thünen, Mangoldt, Mill, Hawley, Knight, Mises, Cole, Shackle
Supplier of financial capital	Smith, Turgot, Ricardo, Böhm-Bawerk, Edgeworth, Pigou, Mises
Innovator	Baudeau, Bentham, Thünen, Schmöller, Weber, Schumpeter
Decision maker	Cantillon, Menger, Marshall, Wieser, Walker, Keynes, Mises, Schackle, Cole, Kirzner, Schultz
Industrial leader	Say, Walker, Marshall, Wieser, Sombart, Weber, Schumpeter
Manager or superintendent	Say, Mill, Marshall, Menger
Organizer/coordinator of economic	Wieser, Schmöller, Sombart, Weber, Clark, Schumpeter
Proprietor of an enterprise	Wieser, Pigou
Employer of factors of production	Walker, Keynes, Wieser
Contractor	Bentham
Arbitrageur	Cantillon, Kirzner
Person who allocates resources to alternative uses	Kirzner, Schultz

tractability (Bianchi & Henrekson, 2005). Kirzner (1973) has argued that, according to neoclassical models, an entrepreneurial miscalculation is essentially an error in arithmetic.

The neoclassical conception views the entrepreneur as simply another factor of production, separate from the typical land, labor, and capital (Endres & Woods, 2006). He/she possesses certain attributes—indeed *all* neoclassical entrepreneurs possess these *same* attributes in the *same* quantity—such as being an “automaton maximizer” (Baumol, 1968, p. 68), using “probabilistic calculating procedures,” and possessing preference completeness (Endres & Woods, 2006). Paradoxically, they have equal access to information and the same profit-making opportunities. Neoclassical entrepreneurs know all opportunities, which are evenly distributed in the market, and which have the same value for all entrepreneurs (Endres & Woods, 2006).

Another reason the entrepreneur does not have a place in neoclassical models is the emphasis on equilibrium. When prices equal costs and supply equals demand, there is no room for arbitrage opportunities. Despite the difficulty of reconciling the entrepreneur with an equilibrium model, some neoclassical economists have made attempts. For example, Kihlstrom and Laffont (1979) propose a model that uses equilibrium theories to identify individuals who prefer to become entrepreneurs. This model is based on uncertainty which says people will either become entrepreneurs or employees based on their “taste” for uncertainty (Shane, 2000).

Bianchi and Henrekson (2005) provide a “systematic survey” of some neoclassical contributions to the idea of entrepreneurship. They identify three essential attributes which entrepreneurs are given in neoclassical models: (1) entrepreneurs are generally “more talented”; (2) are able to bear risk more easily than others; and (3) are innovators. However, these entrepreneurs are still only “allowed” a measurable degree of risk, and it is equally distributed to all entrepreneurs. In neoclassical models, the entrepreneur still must be “reduced” to a mathematical formula, something the Schumpeterian (1934) and Kirznerian (1973) entrepreneur shun from the beginning. This somewhat contradictory view of the entrepreneur leads me to the conclusion that neoclassical economics is still essentially, despite its most valiant attempts, entrepreneurless.

9.2.2 THE SCHUMPETERIAN ENTREPRENEUR

Joseph Schumpeter (1934) developed a theory of economic development, different from the neoclassical theory, in which the entrepreneur plays a central role. The Schumpeterian entrepreneur is responsible for economic change. The entrepreneur promotes new combinations or innovations which, in his theory, disrupt equilibrium. This entrepreneur

promotes disequilibrium, changing an existing situation (Cheah, 1990). This he termed “creative destruction,” performed through “new combinations,” or innovating activities. These terms are explained in more detail below.

9.2.2.1 CREATIVE DESTRUCTION

In Schumpeter’s (1934) theory of economic development, the main actor, the entrepreneur, breaks away from the typical routine, or the state of equilibrium. Equilibrium in Schumpeter’s model is similar to that of the neoclassical economists’. It consists of unchanging conditions in consumers’ preferences and buying behaviour. This also means demand and supply would not change, nor would prices. Schumpeter (1934) refers to this equilibrium as the “circular flow of economic life,” where there is no change in the *status quo* (Hébert & Link, 2006). However, overall, Schumpeter (1934) sees the market as *dynamic*, compared with the *static* approach of the neoclassical model (Hébert & Link, 2006).

The entrepreneur, the main force in economic development, then creates change endogenously (Adaman & Devine, 2002). He/she breaks away from the routine; the circular flow of economic life is broken. This “destructs” the current state of equilibrium. The economy will never return to its *previous* state of equilibrium. However, it will eventually return to a *different* state of equilibrium.

This is due to entrepreneurial profits, i.e., a surplus over costs, generated by entrepreneurs’ innovating activities. These entrepreneurial profits begin to disappear as competitors imitate the new combinations, eventually returning the economy to a state of rest. It is worth noting that Schumpeter (1934) does not view these “imitators” as engaging in entrepreneurial activity (Adaman & Devine, 2002) since the combinations are no longer “new.”

This kind of destruction is creative in the sense that it is “responsible for the recurrent ‘prosperities’ that revolutionize the economics organism and the recurrent ‘recessions’ that are due to the disequilibrating impact of the new products or methods” (Schumpeter, 1934; see also Cheah, 1990). This creative destruction does not occur in consumption of goods, but rather in industrial and commercial life (Hébert & Link, 2006).

9.2.2.2 INNOVATION

Schumpeter’s (1934) creative destruction comes to pass through the innovating activities of entrepreneurs. Schumpeter (1934) refers to these as “new combinations.” He mentions five types of combinations: (1) the introduction of a new good; (2) the introduction of a new method of production, not yet tested by experience; (3) the opening up of a new market; (4)

the conquest of a new source of supply of raw materials or semi-manufactured goods; and (5) the implementation of a new organization of industry (Schumpeter, 1934; as quoted in Adaman & Devine, 2002).

Carrying out these new combinations requires that the entrepreneur need not be “merely” a manager, capitalist, land-owner, laborer, or inventor (Hébert & Link, 2006). While the entrepreneur may, and often does, hold some or all of these roles, they are not central to his/her economic function: the innovating entrepreneur whom carries out of new combinations (Schumpeter, 1934).

The term “entrepreneur” can be applied *only* when he/she is carrying out new combinations; otherwise they lose the title/role. For example, in Schumpeter’s (1934) terminology, if someone creatively destructs the circular flow of economic life through the carrying out of new combinations, and then builds up a business, he/she loses the entrepreneurial aspect/function once the new combinations have been carried out (Hébert & Link, 2006).

Schumpeter’s (1934) theory of economic development has been extremely influential in the economics, entrepreneurship, and strategy literature. It is partly due to its extension—rather than replacement—of earlier theories. It is also due to its power and simplicity in explaining economic events (Hébert & Link, 2006).

9.2.3 THE KIRZNERIAN ENTREPRENEUR

The Kirznerian (1973) entrepreneur, along with the Schumpeterian (1934) entrepreneur, was the most recurring theme within the core articles. A common contrast between the two theories is the approach toward equilibrium. Schumpeter (1934) sees the market in a state of equilibrium *until* the entrepreneur comes along and “disrupts” the equilibrium through what Schumpeter (1934) termed “creative destruction.” The Kirznerian (1973) entrepreneur operates in a *continual* state of equilibrium but, to the degree that his/her calculations are correct (i.e., profitable), the market moves *toward*—but never reaches—a state of equilibrium.

Most of the current research in entrepreneurship is based on or around concepts from Kirzner’s influential book, *Competition and Entrepreneurship* (1973). These include viewing the market as a process of discovery and the “alertness” of individuals to identify and exploit entrepreneurial opportunities. He also uses a framework based on disequilibrium which, while not common in mainstream economics literature, appears to have significantly influenced the entrepreneurship literature (e.g., Shane & Venkataraman, 2000).

Kirzner's (1973) theory of the entrepreneur is explained at a high level of abstraction (Douhan *et al.*, 2007). He sees, as did Austrian economist, von Mises (1949), the entrepreneurial element as present in all human action: *all* humans make choices about the future, given a degree of uncertainty. Each decision is based on imperfect knowledge distributed imperfectly among individuals. This can be contrasted with Schumpeter's (1934) theory in which the entrepreneur is unique and "rarely found . . . [with a] peculiar personality and motivation (Adaman & Devine, 2002), i.e., the "talented few" (Hébert & Link, 2006).

Kirzner's (1973, 1997) theory of the entrepreneur is discussed below through the main themes identified in the core articles.

9.2.3.1 UNCERTAINTY AND RISK

The Kirznerian entrepreneur always acts under conditions of (genuine) uncertainty (Douhan *et al.*, 2007), which is distinct from calculable risk (Knight, 1921). This uncertainty is different from an entrepreneur engaged in a "systematic search" for opportunities (Kirzner, 1997). It is because of uncertainty about the future that the scope for entrepreneurship exists (Kirzner, 1985). It can be seen as the "subjective" future as the entrepreneur envisages it, or the "objective" future as it will in fact unfold.

It is because of this uncertainty about the future that, according to Kirzner (1973), the entrepreneur must act with boldness and imagination, with a "kind of vision," as compared to confidence and courage (Douhan *et al.*, 2007).

Even with these attributes, given that the future is uncertain, the entrepreneur faces risk—risk of an entrepreneurial loss, or market "confirmation" that the entrepreneur was mistaken. While both uncertainty and risk can be minimized or managed, they are nonetheless immutable.

9.2.3.2 ENTREPRENEURIAL OPPORTUNITIES

Recent entrepreneurship literature has become focussed on better understanding and explaining what constitutes an "entrepreneurial opportunity" (McMullen *et al.*, 2007; Plummer *et al.*, 2007).

In Shane and Venkataraman's (2000) influential article, they define the field of entrepreneurship as the study of "how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited." They define entrepreneurial opportunities as "those situations in which new goods, services, raw

materials, and organizing methods can be introduced and sold at greater than their costs of production” (Shane & Venkataraman, 2000). This is similar to the view, using an economics lens, taken by Casson and Wadeson (2007), where entrepreneurial opportunities can be manifested through the generation of products and services.

Subjective or objective

Some of the questions about entrepreneurial opportunities include whether these opportunities are subjective, selected by the entrepreneur due to the self-interest motive (Yu, 2001), or objective, separating the opportunity from the individual (McMullen *et al.*, 2007). An objective opportunity implies anyone can be alert to the *same* opportunity in the marketplace.

However, it is also possible to see subjective opportunities as potential objective opportunities. McMullen *et al.* (2006) explain a similar process: opportunities can be objective if they are generalizable, accurate, and/or timeless.

Generalizability makes an opportunity objective if (1) more individuals share similar (subjective) goals and (2) of the opportunity advances a wider variety of goals.

Accuracy leads to objectivity if the entrepreneur is “correct” by realizing an entrepreneurial profit (and not an entrepreneurial loss). What may have been initially a subjective goal becomes objective by the “correctness” of the entrepreneur’s estimates, given an uncertain future.

Opportunities are also more objective if they can be considered as timeless, i.e., whether they are based on physical laws of nature (cause and effect), or on fleeting societal patterns. An example of a timeless opportunity is when there is an improvement in productivity through a “revelation of natural laws” (McMullen *et al.*, 2007). An opportunity lacking timelessness would be the fleeting fads of a specific era (or temporality).

Kirzner (1973) sees entrepreneurial opportunities as objective due to the price system. It becomes a matter of exploiting various opportunities, i.e., arbitrage opportunities. However, Kirzner (1973) also views the recognition and exploitation of *objective* opportunities as a subjective process. This is reflected by Kirzner’s (1973) view of the market process as that of discovery instead of creation, i.e., the entrepreneur discovers objective entrepreneurial opportunities. It is as if there is a \$10 bill in one’s hand, and the alert entrepreneur discovers it is “available for the grasping” (Kirzner, 1973). Another example of an objective opportunity is the discovery of the telephone, which created new opportunities for

communication, whether or not people discovered these opportunities (Shane & Venkataraman, 2000).

The origins of entrepreneurial opportunities

Defining the origins of entrepreneurial opportunities can be very difficult due to the ontological and epistemological intricacies involved which “attempt to catalogue and describe the sources of opportunity” (Plummer *et al.*, 2007). McMullen *et al.* (2007) have proposed that for any debate on the origins of opportunity to be productive it must “avoid the slippery slope of ‘infinite regression,’ in which the origins of the origins (of the origins) are endlessly identified, characterized, and debated.”

Scholars have identified the origins of entrepreneurial opportunities due to various reasons (see Plummer *et al.*, 2007), including: (1) information asymmetry (Kirzner, 1973); (2) exogenous shocks (Schumpeter, 1934); (3) changes in supply (Schumpeter, 1934); (4) changes in demand (Kirzner, 1979; Schumpeter, 1934); (5) factors that disequilibrate the markets (Holcombe, 2003); (6) factors that enhance production possibilities (Holcombe, 2003); and (7) *most importantly*, prior entrepreneurial activity (Holcombe, 2003).

Opportunities arising from prior entrepreneurial activity, particularly when such opportunities are seen as objective, may seem counterintuitive—as if they are “used up” once exploited. One way to understand this idea is through the continued alertness of entrepreneurs to select how to best choose the means to pursue his or her desired ends. It is this means-ends framework that creates additional entrepreneurial opportunities (Plummer *et al.*, 2007).

For example, an entrepreneur sees the opportunity to create a new car due to changing consumer demand and preferences. He/she decides to exploit the opportunity and ultimately “create” a new model of car (a new good, the *end* result). (Another viewpoint could see the end result as meeting consumer’s desire for a new car.) However, the means required to achieve the desired end could include the opportunity of finding the least expensive components, or using materials in a way not done previously. When demand increases (through the creator of the new car purchasing materials from a materials producer), this also signals to materials owners a potential change in the pricing of their materials, thus raising their price. This constitutes a new opportunity based on a change in demand. In addition, a “poorly exploited” entrepreneurial opportunity can create new entrepreneurial opportunities. Some questions concerning the means-ends-opportunity “framework” could be where to acquire materials, where the car should be sold, and how many cars need to be manufactured. This may all provide further entrepreneurial opportunities.

The importance of defining what authors mean by “opportunity” or “entrepreneurial opportunity” cannot be underestimated. As has been the case with the term “entrepreneur,” different authors define it in different ways, and are usually not explicit in their definitions (Gartner, 1990). This creates confusion where authors are using the same term but with different meaning. McMullen *et al.* (2007) call this “the *most* important step,” recommending that authors define “what they mean by the words ‘entrepreneurial opportunity.’ . . . [beginning] the march toward clarifying the issues and away from obstacles that are attributed to ambiguity in language or philosophically intractable differences.”

9.2.3.3 DISCOVERY

Entrepreneurial discovery is a central component of the Austrian market process (Kirzner, 1997). In 1945, Hayek pioneered this approach and interpreted the market process as equilibrative and as a process of mutual discovery.

This discovery process essentially consists of individuals becoming better informed of the plans being made by other participants. As some plans fail or where entrepreneurs make incorrect judgments, over time the judgments tend to become eliminated (Kirzner, 1997). Thus, misjudgements tend to become “corrected” through alert individuals discovering opportunities.

Kirzner (1997) distinguishes discovery from a systematic “search” for opportunities. Instead of searching for opportunities, entrepreneurs discover what they had previously unknown—an “it was under my very own nose!” moment (Kirzner, 1997), accompanied by an element of *surprise*. This surprise is not mere chance, but comes from discovery through a “natural alertness to possible opportunities” (Kirzner, 1997).

Alert individuals are those that “resist” the routine behaviors of others. These entrepreneurs are then able to discover and grasp opportunities. If this discovery turns out be an entrepreneurial error, it may be due to an earlier error in the entrepreneur’s view of the world (Kirzner, 1997). This is interesting epistemologically to note that it would seem Kirzner is assuming an objective reality which can be imperfectly known, albeit subjectively. This seems to be similar to critical realism.

Discovery is an important part of the market process, as it is essentially an equilibrative activity. This still takes into account the possibility of entrepreneurial errors (and losses), but, through discovery, other entrepreneurs will become more (or better) aware of

entrepreneurial opportunities. It is this “continual discovery and exploitation of pure profit opportunities [that] nudge the market in the equilibrative direction” (Kirzner, 1997).

9.2.3.4 ALERTNESS

The key attribute of the Kirznerian entrepreneur is “alertness” (Kirzner, 1973; Douhan *et al.*, 2007). The entrepreneur is alert to previously unnoticed profit-making opportunities. Without alertness, Kirzner says it is only “sheer chance” that is responsible for successful (entrepreneurial) action (Douhan *et al.*, 2007).

This does not mean the entrepreneur does not make mistakes. Being alert simply means lifting oneself above a “veil of ignorance” to move toward a desirable outcome (Douhan *et al.*, 2007). Overcoming this veil of ignorance comes from a preparedness (i.e., alertness) to recognize currently overlooked profit-making opportunities.

According to Endres and Woods (2006), “alertness is part of the very core structure of Austrian theory.” They suggest alertness pertains to individuals who possess a “gift” (Kirzner, 1979, p. 148) and to those who do not overlook entrepreneurial opportunities.

A key activation of alertness comes from price signals in the market (Endres & Woods, 2006). These price signals act as road signs to tell the entrepreneur where to go. It is almost as if the entrepreneur stands on higher ground and has a better “view” of the signals. The price signals are not at the macro level, but in a given temporal and spatial context (Mises, 1949). Based on these signals, entrepreneurs are able to “see” where they can “buy low” and “sell high” (Kirzner, 1973). This necessarily implies a disequilibrium framework in which opportunities do exist for alert individuals to exploit.

It is important to recognize alertness as an entrepreneurial trait as this signifies that an entrepreneur can be someone in an existing, profitable business who continues to look for opportunities (Yu, 2001). This person possesses boldness and imagination as part of this alertness, living in a world of uncertainty. However, according to Kirzner (1997), these characteristics of alertness can, in contrast to entrepreneurial profit, lead to entrepreneurial losses, meaning entrepreneurs have “misread” the market (Kirzner, 1997).

Kirzner (1980) also points out what Adam Smith (1776) terms “self-interest.” In other words, humans tend to notice that which is in their interest to notice” (Yu, 2001). Thus Kirzner argues (1979, p. 148) that “the free market system is most conducive to entrepreneurial alertness for it permits agents to reap gains from their discoveries” (Yu, 2001).

9.2.3.5 MARKET DISEQUILIBRIUM

One of the significant distinguishing factors between neoclassical and Austrian economics is the approach to the market in equilibrium *vis-à-vis* disequilibrium. In the entrepreneurship literature, it appears that the disequilibrium approach has “won out” (e.g., Shane & Venkataraman, 2000).

Disequilibrium means the economy operates in a state constantly changing consumer preferences, tastes and demands (Kirzner, 1997). Prices fluctuate as does supply. According to Austrians, which may be termed extreme methodological individualists, groups do not make decisions—individuals do. Individuals make decisions based on their changing tastes and subjective value scales, which are spatial and temporal factors (Mises, 1949). For example, individuals do not choose between bread and water, but between a certain quantity of bread and water in a specific context. This creates a market of disequilibrium. When consumer demand and supply become more aligned, the economy has moved closer, but never reached, equilibrium.

The approach taken to entrepreneurship taken by Shane and Venkataraman’s (2000) influential article is that of disequilibrium. They explain that “in equilibrium models, entrepreneurial opportunities either do not exist or are assumed to be randomly distributed across the population . . . [which means entrepreneurs] cannot discover opportunities that differ in value from those discovered by others.” In equilibrium models, entrepreneurs vary according to their attributes, which may be responsible for the previous literature on psychological traits of entrepreneurs. When taking a disequilibrium approach, arguing that entrepreneurship is transitory, it is “improbable that entrepreneurship can be explained *solely* by reference to a characteristic of certain people independent of the situations in which they find themselves” (Shane & Venkataraman, 2000).

Equilibrium models may be useful in some ways (Kirzner, 1997; Shane & Venkataraman, 2000) but these models are necessarily incomplete when it comes to explaining entrepreneurship.

9.2.3.6 KNOWLEDGE

The importance of knowledge in the economic theory of the entrepreneur can be mainly attributed to Austrian economist, Friedrich Hayek (1945). His 1945 article, “The use of knowledge in society,” is one of the most cited articles on economics and entrepreneurship.

Essentially, the idea is that knowledge (or information) is unevenly dispersed among individuals, i.e., it never exists in a complete, concentrated or integrated form. Some bits of

this knowledge are even frequently “contradictory,” meaning separate individuals hold different ideas about similar issues (Hayek, 1945).

While Hayek (1945) was mainly pointing out the impossibility of central planning due to the impossibility of “the utilization of knowledge which is not given to anyone in its totality,” this has been adopted into the Kirznerian (1973) theory of the entrepreneur. It is precisely because of this unevenly dispersed, imperfect knowledge that alert entrepreneurs are able to discover opportunities in conditions of uncertainty (Kirzner, 1997).

It is because people hold different beliefs about the value of resources that entrepreneurship is possible (Shane & Venkataraman, 2000). This also indicates that not everyone is “alert” to the same entrepreneurial opportunities all the time (Hayek, 1945). This is also due to a degree of specialization or division of labor among individuals in the market. Those with more knowledge of a particular area may be more alert to entrepreneurial opportunities due to combining prior knowledge with the new knowledge of the opportunity (Shane & Venkataraman, 2000). This imperfect knowledge is also a key aspect of a market in disequilibrium with profit-making opportunities due to asymmetrical information.

In short, knowledge exists at certain times and locations, and is specific to individual actors which may not always be directly communicable to others (Endres & Woods, 2006). Even individuals possessing the same, or similar, knowledge may interpret it differently—or may not be alert to the entrepreneurial opportunity that comes from such knowledge.

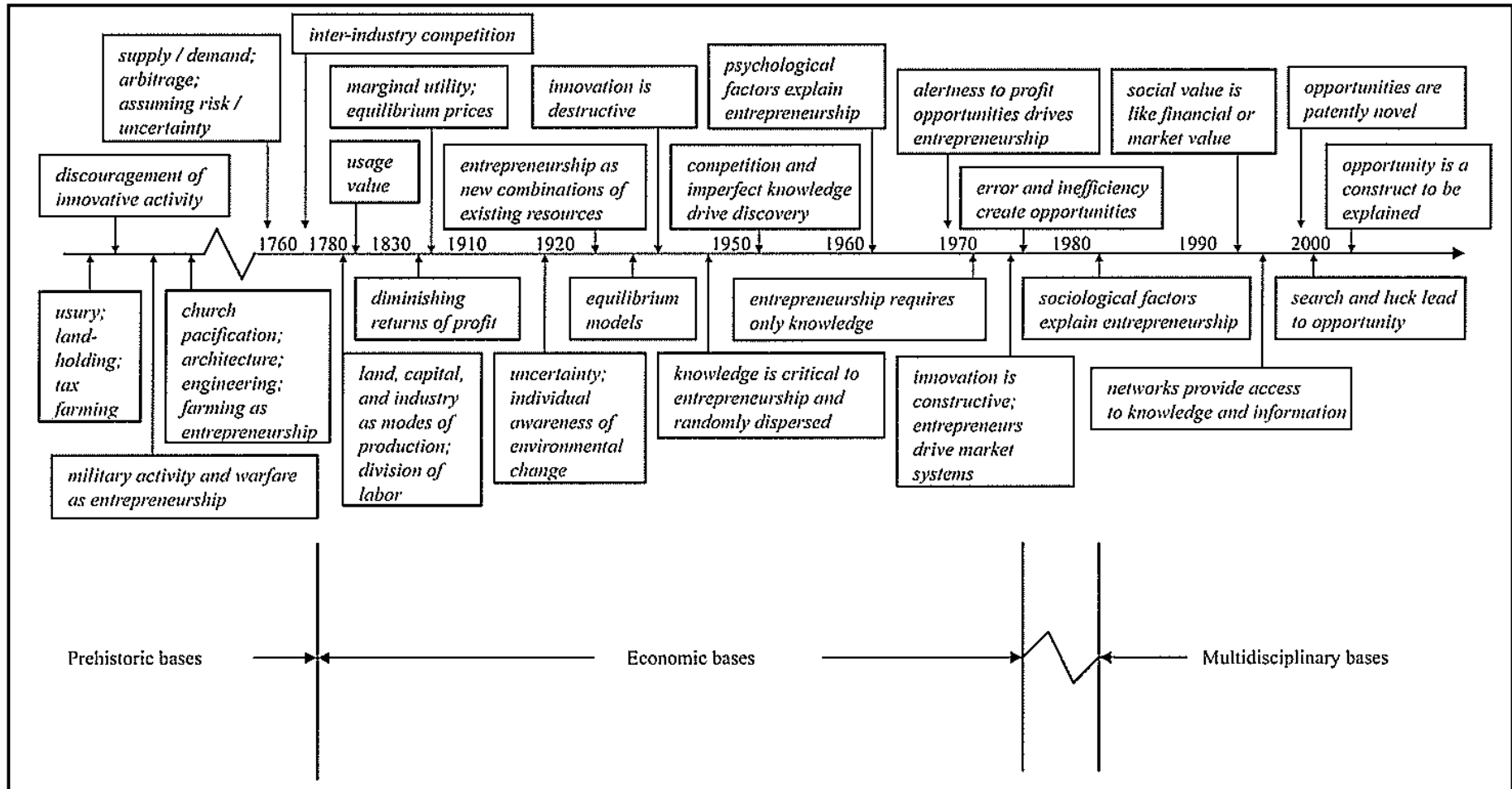


Figure VIII. A conceptual history of entrepreneurial thought (Source: Murphy et al., 2006)

10 PHASE 10: DISCUSSION, LIMITATIONS AND CONCLUSIONS

The final phase of the reporting of the review stage is to discuss the themes and their relevance both to academics and practitioners. A discussion of the entire systematic process will be discussed after the review has been carried out. This will include a post-hoc assessment of changes made during the process, the process itself, and limitations to the findings. This will also include identifying areas for future research and conclusions from the systematic review.

The ultimate objective of systematic reviews is to improve the quality of research and practice. This includes transferring the knowledge to a relevant audience. An excellent way to disseminate the review is in the form of publishing academic and/or practitioner articles, and presenting at academic conferences.

10.1 DISCUSSION

Overall, this process has shown an evolution of research on entrepreneurship from an economics lens that has built upon previous research. Authors seem to be communicating with one another, and there is a somewhat delineated stream of research. It is encouraging that the research which began in economics is also interdisciplinary, which provides a synergy between entrepreneurship and other disciplines. For example, opportunity identification can benefit from research in psychology; and psychology can benefit from research with entrepreneurs and how (and why) they identify and exploit opportunities.

It appears that, while Schumpeter (1934) has been very influential to the field of entrepreneurship and economics, the focus is shifting to Kirzner's (1973, 1997) theory of the entrepreneur.

Disequilibrium is the more common approach to entrepreneurship (Shane & Venkataraman, 2000), even though it is given very little attention in neoclassical economics. Indeed, neoclassical builds its mathematical models around the concept of equilibrium. The disequilibrium approach may best be understood in relation to other concepts in Austrian economics (e.g., the temporal and spatial decisions involved in human actions, the subjective theory of value, the Austrian business cycle).

Austrian economists view economics as a science based on theoretical (as opposed to neoclassical, mathematical) arguments. For entrepreneurship to develop as a science and based on laws of cause and effect (Menger, 1871), it must have a sound theoretical base. In

my opinion, this should be based on a general theory of human action (Mises, 1949). This would include the view that everyone possesses entrepreneurial attributes to *some* degree. Kirzner (1973) has discussed this view but there is a more comprehensive understanding that comes from reading Mises (1949).

10.2 LIMITATIONS

Similar to the discussion above, typical limitations to research (or to human choices in general) include time, imperfect or incomplete knowledge, and scarce resources. Aside from these more “typical” and catholic limitations, there are a few others to my research, both from my review and synthesis of the literature and the process of the systematic review itself.

The systematic review is a process which aims to be replicable and explicit. Some of the benefits from this process are at the expense of costs, both explicit and opportunity costs.

Arguably, the systematic review process takes away from some of the creativity that comes from identifying new articles based on any sort of intuition or luck. It seems to sometimes require an explicit post hoc justification for articles found from “unsystematically” searching the literature. Of course, this process takes time away from continuing to search for articles based on cross-referencing and searches based on keywords because time is spent justifying how and why the articles were originally found.

While I found many articles from this process that were new and valuable due to their relevance and quality in answering my review question, I might have missed out on other, more relevant, articles. This includes unpublished articles from the internet and other books that are difficult to search systematically.

The synthesis of the articles required analyzing and interpreting 32 journal articles and 4 books. This was a rewarding, but somewhat tedious, process. One limitation from this process was due to differences in definition among authors. When two authors use the same term (e.g., entrepreneur) to mean either the creator a new innovative product, or a new business owner, the remaining discussion or analysis must be interpreted based on these definitions. Essentially this requires attempting to compare (or synthesize) apples to apples, which is rarely the case, to make sense of the research. This learning process, however, seems to be one of the wonderful rewards of conducting research.

10.3 CONCLUSIONS

The process of research is not so different from the market process including the discovery and exploitation of opportunities by alert individuals. Entrepreneurial research is that which offers a profit (even if it is non-pecuniary, e.g., more desired prestige) to the entrepreneur and which can be discovered subjectively, but confirmed as objective when published in a high-quality journal (confirmation from the “market”) or from receiving many citations.

Gartner (2002) analogizes the entrepreneur to the story of the six blind men feeling an elephant and attempting to determine what it is they are touching. The first young man runs into the side of the elephant, feels its skin, and determines it is like a great wall. He runs back to the city and tells everyone. Another touches its feet and decides it is like a tree trunk. The third feels its tusk, listens as it scrapes through the sand and exclaims, “the elephant is hard and sharp like a spear, and yet it makes noises and smells like an animal!” (Gartner, 2002). And so on.

Using this analogy, I think we have identified the trunk, feet, side and other parts of the “elephant” with a better degree of description, found out their relationship to one another, and know that they *are* connected to the same being: the entrepreneur.

I am confident we can now say, with little hesitation, that we have identified some characteristics of the *economic functions* of the entrepreneur. We know he or she possesses alertness to entrepreneurial opportunities in a market process of disequilibrium. He/she acts based on limited knowledge and imperfect information in a world of uncertainty facing various risks. This market is *static* and his or her *subjective* view of what constitutes an entrepreneurial opportunity may be shown to be *objective* based on whether the market accepts or rejects the creation of goods or services. This will result in an entrepreneurial profit or loss.

10.4 OPPORTUNITIES FOR FUTURE RESEARCH

A characteristic of excellent research, in my opinion, is not only about answering a specific research question, but to make sure the right questions are being asked, and why. It would typically raise more questions than it would answer (e.g., McMullen *et al.*, 2007), and at least contemplate a direction for future research. It often sparks a debate which raises new issues, or takes a different approach or viewpoint than has been done in the past. It would also teach the researcher how much he or she does *not* know.

I argue—and hope—that neoclassical economics will come to be more influenced by greater scholarship in entrepreneurship research. I also see Austrian economics as greatly influencing entrepreneurship research. Since the Austrian “movement” seems to be growing, its influence on entrepreneurship, and thus on neoclassical economics, will grow. It will be interesting to see if the majority of economics research on entrepreneurship will be published in economics or entrepreneurship journals.

The topic on the origins of entrepreneurial opportunities is interesting in terms of the ontological and epistemological stance that comes through, explicitly or implicitly, in authors’ research. I feel this is a field that *must* be discussed and debated to arrive at a stronger foundation from which to discuss the topic of opportunity.

This would most likely lead to an increased interest in other “founders” of the Austrian school: Carl Menger, Ludwig von Mises, and Murray Rothbard. Israel Kirzner (1973) studied under von Mises and has taken many of Mises’ ideas into a more elaborate framework of the entrepreneur. A better understanding of Mises’ (1949) treatise on *Human Action* would help to better understand this framework. There is an opportunity for scholars to undertake the daunting task of synthesizing the Austrian economics literature, in addition to the oft-cited Kirzner and Hayek, to contribute to entrepreneurship scholarship.

In addition, more opportunities exist for carrying out systematic reviews based on any of the 7 major themes of the economic theories of the entrepreneur. For example, the market in a constant state of disequilibrium, while at times moving toward equilibrium, could be described and better understood through a synthesis of the literature.

10.5 LEARNING POINTS

The systematic review process has been fruitful in that it has provided a tool which I can use for future research. It helped me to more critically analyze not just what I am reading but *why* I am reading it, and how I can *justify* it to others that may be reading my work. Attempting to be explicit about the criteria on which to judge a paper has helped me develop a more rigorous approach to research.

Moving forward, I will use some of the techniques from the systematic review even though I may not go through the entire process. One technique I found useful is to identify keywords from article abstracts and to create search strings using Boolean logic. I was not as familiar with this technique nor was it as highly developed a skill as it has now become.

The process of “forcing myself” to type has shown me I do know more than I thought about the literature. I am now able to reference key authors without always needing to look up the article. I am also more aware of the conversations being held (and not being held). This gives me a better idea for future research.

In addition to the systematic review process, I have learned much more about economics and its contribution to entrepreneurship. I am more familiar with prominent economists and their contributions. I can now recognize which concepts in the entrepreneurship literature come from. For example, the concept of disequilibrium may be seen as coming from Schumpeter or the Austrian school.

I now recognize that authors often misrepresent other authors’ viewpoints or ideas. Sometimes authors will misattribute ideas to another author. For example, many attribute innovation to Schumpeter (1934) when there were other economists writing about innovation before Schumpeter (Hébert & Link, 2006). Being familiar with many authors writing about a similar topic makes it easier for me to judge the quality and relevance of an article.

It has also helped me to think about what I am writing, to choose my words carefully, and to define what I am talking about. These are skills that will benefit my research in any area I choose to pursue.

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APPENDIX

Ref	Author(s)	Year	Summary	Comments
1	Adaman, F. & Devine, P.	2002	role of entrepreneurship in neoclassical, Austrian and competence theory is analyzed, identifying 5 recurring themes, mainly dealing with tacit knowledge; aim is to further the relationship between entrepreneurial success and organizational form	excellent lit review and synthesis of the Austrian and neoclassical theories of entrepreneurship
2	Baumol, W.	1990	entrepreneurs can be heavily influenced by the "relative payoffs society offers to [entrepreneurial] activities," including those that are productive (e.g., innovation), unproductive (e.g., rent seeking) or destructive (organized crime); policy can influence the allocation of entrepreneurship	the extension and application of the Schumpeterian entrepreneur is the most relevant
3	Baumol, W.	1993	describes why some theories of entrepreneurship "do not lend" themselves to theoretical analysis; deduces what an economic theory of entrepreneurship can/cannot reasonably accomplish; shows a body of theories of entrepreneurship already exist	main discussion focuses on the innovating entrepreneur and the theory of the firm
4	Bianchi, M. & Henrekson, M.	2005	characterizes the body of research on entrepreneurship; reviews influential approaches in modelling entrepreneurship; evaluates the models, their main ideas and assumptions; discusses the usefulness of neoclassical modelling	attempts to model entrepreneurship in neoclassical economics, which is excellent since it seems to be less common than using Austrian economics or Schumpeter
5	Buenstorf, G.	2007	uses an evolutionary market process approach to the concept of opportunity, argues that new opportunities for entrepreneurial activity frequently emerge as by-products of market competition; also looks at Austrian economics and the opportunity concept	expounds on the current research on the opportunity concept, as identified in Austrian economics
6	Casson, M.	2005	attempts to integrate "the theory of entrepreneurship" to the theory of the firm; defines the entrepreneur in terms of judgement and the subjective perception of risk, and to understand the environment in which he/she operates	great for its integration of the theory of entrepreneurship to the related theory of the firm, and then extends the theory; very useful
7	Casson, M. & Wadeson, N.	2007	attempts to clarify the role of opportunity in the modern economic theory of the entrepreneur; argues that opportunities may be conceived in a manner similar to projects, as potentially profitable and unexploited	excellent and very relevant to an economic theory of the entrepreneur; uses concepts from economics to compare the entrepreneur

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8	Cheah, H.	1990	defines Schumpeter's conception of entrepreneurship and compares the Austrian school's conception of entrepreneurship; distinguishes between Schumpeterian and Austrian entrepreneurs, including the opportunities, activities and processes; attempts to provide a basic model of the entrepreneurial process	good for comparing the Schumpeter and Austrian conceptions of the entrepreneur, viewing them as opposites and yet complements
9	Douhan <i>et al.</i>	2007	presents the main contributions of Kirzner in the Austrian tradition to the entrepreneurial function and its implications; shows how this view opens up different perspectives when compared to neoclassical economics; summarizes the Kirznerian entrepreneur	great overview of Kirzner's contributions and implications, especially when contrasted with the lack of neoclassical theory related to the entrepreneur
10	Ebner, A.	2005	focuses on Schumpeterian entrepreneurship, establishes innovation and coordination as ideal types of entrepreneurial functions; reconstructs "economic reasoning on entrepreneurship from the perspective of its institutional content"	excellent review of entrepreneurship in the neoclassical and German historical school with a strong emphasis on the contributions of Schumpeter
11	Endres, A. & Woods, C.	2006	compares the neoclassical, Austrian and behavioral theories of entrepreneurial decision making; considers the discovery of opportunities and their exploitation; compares specifically the Austrian and behavioral theories of the entrepreneur	excellent for the presentation of the neoclassical, Austrian and behavioral approaches; the comparison is very helpful, using tables to separate the theories for comparison purposes
12	Francois, A.	2003	applies the Austrian analysis of the entrepreneur to the political process; this political entrepreneur possesses the Kirznerian functions of the "Austrian entrepreneur"	focuses specifically on the Austrian tradition due to the neoclassical exclusion of the entrepreneur; creatively applies these entrepreneurial functions to the political realm
13	Frank, M.	1998	explains Schumpeter's understanding of the entrepreneur during his time in Europe and America; reconciles the two different approaches, arguing his theory of economic development and the entrepreneur does not change	an in-depth explanation of the Schumpeterian entrepreneur, typically not analyzed in the other articles
14	Hamilton, R. & Harper, D.	1994	looks at the entrepreneur in economic theory, particularly in the neoclassical tradition; also looks at what economists can learn from the psychological and sociological studies of entrepreneurship	the most insightful section is looking at the psychological and sociological studies and their application to economics

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Ref	Author(s)	Year	Summary	Comments
15	Hebert, R. & Link, A.	2006	groups theories of entrepreneurship as supply- or demand-sided, summarizing economists' views on the entrepreneur as innovator; a larger focus is on Schumpeter's innovating entrepreneur	excellent summaries from different economists on the entrepreneur as innovator
16	Holcombe, R.	2003	uses Kirzner's theory of entrepreneurship to show how entrepreneurship increases the number of entrepreneurial opportunities, pointing out entrepreneurship as the engine of economic progress; gives three basic sources of entrepreneurial opportunities	adds to Kirzner's theory of entrepreneurship by looking specifically at one important aspect: the origin of entrepreneurial opportunity
17	Kent, C.	1989	shows the ways entrepreneurship is discussed in economics textbooks, using 6 major elements of entrepreneurship	great for identifying the elements of entrepreneurship available in leading economics textbooks; also points out the lack of focus on entrepreneurship in (mainstream) economics
18	Kirzner, I.	1997	sets forth the Austrian approach to the market and the entrepreneur's role; compares the neoclassical approach and how it is not totally irrelevant	one of the most cited articles on entrepreneurship; great explication of the market as a process and the role of entrepreneurs within that process
19	Koolman, G.	1971	assesses Say's contribution to the theory of the entrepreneur; attempts to correct neglect that Say has received in some histories of economic thought; compares Say's position with other writers	excellent in-depth focus on an economist not often receiving recognition for his contributions to entrepreneurship
20	Leibenstein, H.	1987	describes the role of the entrepreneur by economists and why <i>n</i> achievement theory has received very little attention from economists; suggests utilizing the "loose inert area equilibrium of X-efficiency theory"	great for looking at the use of equilibrium in economics to the detriment of the entrepreneur fitting into its models
21	Long, W.	1983	looks at definitions of entrepreneurship from theoretical economists, beginning with Cantillon, and finds three recurring themes: 1) uncertainty and risk; 2) complementary managerial competence; and 3) creative opportunism	good for its description of entrepreneurship from various prominent economists, even those from neoclassical economics not often found in other articles
22	McDaniel, B.	2005	discusses how Schumpeter views the entrepreneur as a <u>sociologically distinct individual, a creative innovator, separate from a capitalist</u> and the view that the entrepreneur only exists in market capitalism	difficult to follow the flow and purpose of the article <u>but</u> relevant to an increased understanding of the Schumpeterian entrepreneur

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Ref	Author(s)	Year	Summary	Comments
23	McMullen, J. <i>et al.</i>	2007	discusses the opportunity construct and 3 reasons for confusion about this construct:"1) the 'objectivity' of opportunity; 2) the perceived importance of one particular individual in determining the direction of the social world; and 3) what distinguishes the sub-class of 'entrepreneurial' opportunity from the broader category of opportunity in general"	excellent summary of key articles on entrepreneurial opportunity and their contributions; also gives directions for future research
24	Metcalfe, J.	2004	explores the introduction of the entrepreneur into economic theory and what it means for "cherished methodological stances of modern economics"	great explication of various theories of the entrepreneur; contrasts the theories based on common themes, e.g., destruction and creation
25	Montanye, J.	2006	summarizes the scope of entrepreneurship theory and explains 3 of its tenets; clarifies and extends existing theory "based on classical principles of human action"	excellent for comparing key economists' contributions to entrepreneurship in economic theory, and uses key concepts such as uncertainty
26	Plummer, L. <i>et al.</i>	2007	uses strategic management to look at the origins of entrepreneurial opportunities; attempts to extend and refines Holcombe's (2003) position that "entrepreneurial opportunity is born of entrepreneurial action"	while drawing on conversations in the strategy literature, this article adds to the economic theory of the opportunity, mainly from its discussion of entrepreneurial opportunity
27	Yu, T.	2001	contributes to Kirzner's theory of the entrepreneur, specifically to the concepts of entrepreneurial alertness and discovery; also discusses opportunities	good for discussing two key concepts of the Kirznerian entrepreneur: entrepreneurial alertness and discovery; also adds to these concepts
28	Zaratiegui, J. & Rabade, L.	2005	describes the Marshallian distinction of the capitalist-owner concept from entrepreneurs and managers; compares entrepreneurs and managers; describes different roles played by the businessman	excellent for looking at how Marshall, a neoclassical economist, viewed entrepreneurship, contending that Marshall viewed the entrepreneur as innovator distinctly from the business manager, even before Schumpeter
29	Hayek	1945	discusses how knowledge is unevenly dispersed throughout society and how all information cannot be held by one individual, e.g., a central planner	excellent example of the Austrian approach to information and knowledge; helps explain the imperfect information that exists and why there are entrepreneurial opportunities available

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Ref	Author(s)	Year	Summary	Comments
30	McMullen, J. & Shepherd, D.	2006	conceptualizes uncertainty to provide a model of entrepreneurial action for analysis at the individual and systems level; contributes to other concepts, such as the nature of opportunity	excellent conceptual article on a common thread throughout the entrepreneurship literature: uncertainty; compares Schumpeter, Kirzner and Knight on entrepreneurship
31	Murphy, P. <i>et al.</i>	2006	uses a conceptual approach and a historical view to interpret and explain evolution in entrepreneurial thought; compares classical, neoclassical and Austrian approaches to entrepreneurship	excellent figure on a conceptual history of entrepreneurial thought; also great is the conjectures and refutations sections on each economics approach to entrepreneurship
32	Shane, S. & Venkataraman, S.	2000	creates a conceptual framework for analyzing entrepreneurship by drawing upon previous research in different disciplines within the social sciences; gives a definition of entrepreneurship based on concepts from economics, e.g., disequilibrium	excellent discussion and conceptual model set forth based on economics concepts and their application to entrepreneurship