



**SERIAL FOUNDER ENTREPRENEURS: CAREERS AND CORRIDORS,
VENTURE CHOICES AND OUTCOMES**

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Abstract

Entrepreneurship is important to the development of market economies, in particular founding or 'starting-up' new enterprises from scratch. Researchers constantly seek to break down the heterogeneous nature of entrepreneurial behaviour and one suggestion is to focus on experienced habitual entrepreneurs who have owned and managed multiple businesses. Studies have shown that the habitual typology can be divided into more homogenous sub-types. Researchers make a distinction between serial entrepreneurs who focus sequentially on one business at a time and portfolio entrepreneurs who own and manage multiple businesses simultaneously. More is known about portfolio entrepreneurship and drawing on this work a comprehensive set of postulates is beginning to emerge to explain the differences between novice, serial and portfolio entrepreneurs. Therefore, there is an urgent need to focus on the serial entrepreneur.

The principal research question is: How is one venture related to the next in the series? Crucially, serial founders possess repeated experience of entry, exit and re-entry into entrepreneurship. Exit from a venture they founded can be positive or negative, i.e. the sale of a business or a managed closure or outright failure. Serial entrepreneurs have to manage the consequences of exit and also make decisions regarding re-entry. An improved understanding of their cyclical, flow-like processes, punctuated with the 'critical incidents' of entry and exit is key to understanding the economic selection of entrepreneurs and the accumulation and use of entrepreneurial human capital.

Researchers expect ventures to be related and follow industry corridors. This study explores the nature of corridors and goes further by asking if ventures are imitative (i.e. serial entrepreneurs are more cautious) or innovative (i.e. bring new means-ends combinations into existence).

Using the commentaries of persistent and active entrepreneurs and details of their ventures, it is clear that experienced founders use particular modes when creating new businesses. Also an unsuccessful exit through closure or outright failure is normal, a common occurrence in a serial career. The study of 112 start-ups reveals that the outcome of the previous venture has a strong bearing on what happens next. Successful exits often lead to start-ups in different industries thereby spreading innovation. Failure of a novice venture leads to a return to essentially the same opportunity to try again. Persistent serial entrepreneurs can recover from unaffordable losses by returning to employment. Exit conditions are also important in understanding portfolio entrepreneurship. Novice or serial 'singleton' entrepreneurs transition to portfolio entrepreneurship when their current business is not exited. Unrelated ventures are almost invariably unsuccessful, and consequently attempts to transition are not always successful.

Serial entrepreneurs obtain economic benefit from previous ventures through the phenomenon of serial diversification, recycling and reusing knowledge and other resources. There is evidence of learning from experience over the course of a career, as the frequency of negative outcomes falls and each venture in the series survives longer, substantially increasing its chances of a successful exit.

On the basis of these findings a new theory of serial entrepreneurship is proposed for further research, and recommendations are made for policy-makers, practitioners and entrepreneurship educators.

CHAPTER 1 Introduction

If you can dream—and not make dreams your master;
If you can think—and not make thoughts your aim;
If you can meet with Triumph and Disaster
And treat those two impostors just the same;
By Rudyard Kipling, If (1895)

1.1 Section 1. Introduction to the Research Topic

“Perhaps most fascinating and promising of all entrepreneurial starting points are those that occur in series. It fairly frequently happens that one entrepreneur will start a venture, possibly succeeding in it, possibly not, and, regardless whether it succeeds or not, go on to start a second new venture, a third, and so on, building an entire career on entrepreneuring” (Vesper 1980:80).

Serial entrepreneurship emphasises starting several new ventures in sequence. Each one results in a definite outcome and exit, and then a return to entrepreneurship to start again. ‘Start-up’ is an important source of new enterprises in market economies. Serial entrepreneurship is a specific sub-type of habitual entrepreneurship. Habitual ‘habit forming’ entrepreneurship includes all forms of multiple experiences of the entrepreneurial process including acquisition and inheritance of existing businesses.

Serial entrepreneurs are distinct from other entrepreneurs because of their unique experience and expertise in the cyclical pattern of venture creation, exit and re-entry. In contrast, portfolio entrepreneurs (the other main sub-type of habitual entrepreneurship) are characterised by founding and managing several firms in parallel. Portfolio founders therefore rarely, if ever, exit from the owner/manager status, and therefore, entrepreneurship.

1.1.1 Position and Contribution

The thesis is positioned within the wider field of habitual entrepreneurship. It makes a specific study of serial ‘one at a time’ sequential founders of new firms. It is an exploratory study that addresses long standing calls (e.g. Starr and Bygrave, 1992; Westhead, Ucbasaran, Wright, and Binks, 2005) to make a longitudinal qualitative investigation of the how, when and why of the careers of multiple founders, specifically: How are the ventures of serial starter entrepreneurs related to one another? Answering this question is made more timely due to recent and new theoretical developments in the

theory of habitual entrepreneurship by Parker, (2014) and Sarasvathy, Menon, and Kuechle (2013), who ask for empirical tests of their new postulate and additional theoretical developments.

Understanding the relationship between the ventures of a serial entrepreneur requires answers to a number of subsidiary research questions investigating the nature of serial entrepreneurship, including: What type of opportunities do serial entrepreneurs recognise, pursue and exploit through business formation? Are these opportunities related? What is the source of these opportunities? Are they imitative or innovative? Do serial entrepreneurs learn from experience and improve their outcomes over a career? How does the experience of success and failure influence the choice and performance of subsequent ventures?

To answer these questions the thesis examines the career histories of 21 serial entrepreneurs and their 112 start-up ventures triangulated by 3 cases of portfolio entrepreneurs, and 2 cases of careers that contain a mixture of inherited, acquired and founded ventures. The study uses a pragmatic within and across-case comparative analysis methodology (Glazer and Strauss, 1967; Yin, 2014).

Limitations of the Study

There are some limitations to the reliability, validity and transferability of the study's findings. While the sample size is higher than other comparable studies, all the 26 case studies are of surviving 'persistent' entrepreneurs who were still active at the time of the study. Serial entrepreneurs who have retired or who left entrepreneurship permanently part way through their careers are not included in this study. It is a study of persistent and also successful serial entrepreneurs, where success is defined as surviving and currently thriving. Consequently, the sample is subject to survivor bias (Wiklund and Shepherd, 2003) where transferable generalisations can only be attempted for similar groups of persistent serial entrepreneurs. With the exception of two case studies the data relies on the lead entrepreneur as the sole informant. The entrepreneurial career histories captured are not complete. Further research is required to determine the overall outcome for all of their start-ups. The study may also be accused of only investigating successful cases after completion (Davidsson, 2004). However, the study sample is not restricted to surviving ventures and includes a significant number (40%) of closures and outright failures. With an intentional focus on serial entrepreneurs, there are just three cases of portfolio entrepreneurs in the study. Accordingly, the findings on the differences and similarities between serial and portfolio entrepreneurship have less strength.

1.1.2 Why Research Serial Entrepreneurs?

Serial entrepreneurship is of research interest because it is synonymous with greater entrepreneurial experience and expertise of the opportunity centric process of entrepreneurship. Researchers constantly seek to unpick the heterogeneous nature of entrepreneurial behaviour, and one suggestion by Macmillan (1986) is to focus on experienced habitual entrepreneurs. Serial entrepreneurs have specific characteristics of interest to researchers. First, serial founders, as opposed to acquirers and inheritors of existing businesses, originate new ventures. Second, serials exit their ventures and unlike builders of portfolios of businesses do not maintain a permanent group (Iacobucci, 2002) or cluster (Rosa, 1998) of enterprises. Crucially, serial founders possess repeated experience of entry, exit and re-entry into entrepreneurship. Exits contrast between successful exits, i.e. sale as a 'going concern', and unsuccessful exits, i.e. a managed closure or outright failure. Therefore, for serial entrepreneurs to remain in an intrinsically risky career, to use Kipling's words quoted above, they must have learned to treat those two impostors of success and failure just the same.

Economic Impact

There are important practical reasons to study serial entrepreneurs. Habitual entrepreneurs are essential contributors to economic growth (MacMillan, 1986; Ucbasaran Westhead and Wright, 2008). Individuals who found more than one business create a disproportionate share of entrepreneurial firms and have a significant economic impact (Eesley and Roberts, 2012). The contribution of habitual entrepreneurs to job creation is conservatively estimated at half of all new jobs (Sarasvathy, Menon, and Kuechle, 2013). Entrepreneurial exit is an important process that has a significant effect on firms, industries, and the economy (DeTienne, 2010).

An improved understanding of the behaviour of serial entrepreneurs is of interest to all stakeholders in an entrepreneurial economy. Public policy makers, banks and the venture capital industry want to be able to 'pick winners' (Storey, 1994). Similarly, educators and business support agencies want to pass on recipes for entrepreneurial persistence and success. Furthermore, all stakeholders would be better informed if they could differentiate the behaviours and contribution between serial, portfolio and novice (i.e. one time) entrepreneurs (Parker, 2014; Ucbasaran, Westhead and Wright, 2006).

Percentage of Serial Entrepreneurs

Habitual entrepreneurship is an important form of economic activity as is illustrated in the proportions of different types of entrepreneurs sampled in the research outputs listed below.

Study	Novice	Habitual	Portfolio	Serial
Westhead and Wright (1998a)	63%	37%	12%	25%
Alsos and Kolvereid (1998)	64%	36%	16%	20%
Westhead, Ucbasaran and Wright (2005)	56%	44%	25%	19%
Alsos, Kolvereid and Isaken (2006)	68%	32%	18%	14%
Ucbasaran, Westhead, Wright, and Flores (2010)	48%	52%	21%	31%

Table 1.1 Relative Proportions of Novice and Habitual Entrepreneurs

Some entrepreneurs are prolific creators of businesses. Founding three or more businesses is an accepted standard to achieve expert status (e.g. Baron, 2006, Baron and Ensley, 2006). The proportion of habitual entrepreneurs creating three or more businesses are reported as: 34% (Chen, 2013), 20% (Schollhammer, 1991) and 12% Parker (2013). The findings of this thesis are derived from a sample of serial entrepreneurs where over 80% created three or more new enterprises.

1.2 Section 2. Habitual Entrepreneurship: Gaps in the Literature

There are strong current academic grounds for further study into this phenomenon. Progress is being made toward the development of a theory of habitual entrepreneurship that explains the different behaviours and outcomes of serial, portfolio, and novice entrepreneurs. This thesis is positioned to make an empirical and theoretical contribution to the recent work by Plehn-Dujowich (2010), Sarasvathy, Menon, and Kuechle, (2013) and Parker (2014).

To explain the position, contribution and relevance of this exploratory study of serial entrepreneurship, more precisely the key themes, questions and controversies of the field of study are introduced in this section.

1.2.1 An Upward-Sloping Experience Curve?

The potential benefits of researching habitual entrepreneurs were first highlighted by MacMillan (1986) who called for the codification of their skills and techniques to really learn about entrepreneurship. However, Starr and Bygrave's (1991) analysis of six cases in the then new computer industry cast doubt on MacMillan's hypothesis of an upward sloping experiential learning curve. Instead, Starr and Bygrave (1991) induced a theory of experiential 'assets' and 'liabilities'.

Schollhammer's (1991) quantitative study also finds a non-linear relationship between experience and business performance. Starr and Bygrave's (1992) follow-up paper asks for attention to be paid to the contribution of different types of human capital such as start-up and specific industry experience. The paper provides the genesis of this thesis by asking for specific research into how one business is related to the next or the nth new business.

1.2.2 Experience, Expertise and 'Picking Winners'

The search for successful or winning entrepreneurial behaviour is a major theme of entrepreneurial research. Despite inherent difficulties of finding a reliable positive relationship between experience (i.e. the number of start-ups) and venture performance, first posited by Starr and Bygrave (1991), studies to discern the impact of increasing human capital of successful habitual entrepreneurs on successive venture outcomes has remained a focus of research. The collective results of many quantitative studies are inconsistent (Unger, Rauch, Frese and Rosenbusch, 2011). Furthermore, the hypothesis that habitual entrepreneurs should perform better than novices is also not consistently supported (e.g. Ucbasaran, Westhead and Wright, 2006; Ucbasaran, Westhead, Wright, and Binks, 2005). Consequently, Starr and Bygrave's original assets and liabilities theory of habitual entrepreneurship derived from qualitative research continues to influence current thinking (e.g. Ucbasaran, Westhead, and Wright, 2009). Consequently, there remain calls for more qualitative longitudinal cross-industry studies to unpick some of the complex processes that lie behind the relationship between entrepreneurial experience and returns to entrepreneurship. This investigation of serial entrepreneurship is a response to these calls.

1.2.3 The Relatedness of Ventures: The Corridor Principle

A basic theory of the career path of habitual entrepreneurs and the origins of the opportunities they choose to exploit is proposed in the corridor principal (Ronstadt, 1986; 1988). The corridor principal proposes simply that having one business leads to new opportunities not available to nascent entrepreneurs contemplating entry into entrepreneurship for the first time. Furthermore, the career path of a habitual entrepreneur may be held in a corridor by path dependencies and other restrictions related to available resource options (McGrath, 1996) and prior experience (Venkataraman, 1997). Habitual entrepreneurs are somewhat immune to new knowledge (e.g. Gruber, 2010; Gruber, MacMillan and Thompson, 2012; 2013). Overall, it is expected that ventures within a series will be related to one another. This study provides evidence as to how related they are in practice and the underlying process that determines the degree of relatedness.

1.2.4 Imitative or Innovative Ventures?

Do the corridor principle and related effects, such as path dependency, make serial entrepreneurs intrinsically less innovative? The sources and degree of newness have traditionally received scant attention in the literature (Dahlqvist and Wiklund, 2012) and there is current research into the effects of corridors and prior knowledge on innovation (e.g. Gruber, MacMillan and Thompson, 2013). A narrow corridor of ventures related by prior knowledge (Shane, 2000), while consistent with the economic theory of increasing returns to the specialisation of entrepreneurial labour, appears to run counter to the entrepreneur's role as innovator. Schumpeter's (1934; 1942) idea of the innovative and creative entrepreneur, and Kirzner's (1973) alert entrepreneur pursuing new opportunities hitherto unnoticed by others, are central to the theory of entrepreneurship. Innovative opportunities are considered to have greater wealth creation potential (Fiet, 2002; Shane, 2000), and hence greater economic significance. Entrepreneurship is also exercised by imitators who exploit opportunities exposed by the innovators (Kirzner, 1973). The exploitation of imitative opportunities is a necessary economic activity to spread information about new more efficient resource combinations throughout the economy. The prevailing wisdom is that existing entrepreneurs are bounded by current knowledge, so much so that Aldrich and Ruef (2006) assume that only nascent entrepreneurs are innovative and create new forms of business.

In fact, there is some evidence that habitual entrepreneurs use their experience to find more and more innovative opportunities (Ucbasaran, Westhead, and Wright, 2009), and recent research (Gruber, 2010; Gruber, MacMillan and Thompson, 2012; 2013) suggests that the value of external information sources outside a narrow corridor is constrained by prior knowledge. Accordingly, this thesis contributes further theory grounded in new empirical evidence, as to the nature of venture corridors, career paths and the origins of innovative and imitative opportunities.

1.2.5 The Coexistence of Entrepreneurial Persistence and Failure

Serial entrepreneurs are unique in that they exit one venture before starting the next. The entrepreneurial process is more than just the creation of a new venture and does not end with creation, it ends with exit (DeTienne, 2010). Venture exit is an important economic force. Exit drives the economic theory of entrepreneurial selection (Lucas, 1978; Holmes and Schmitz, 1990; 1995). Moreover, exit experience is a type of entrepreneurial human capital often overlooked in the research literature.

Some human capital and performance studies (Parker, 2010; Schollhammer, 1991, Toft-Kehler, Wennberg and Kim, 2014) show that returns to entrepreneurial experience are non-linear i.e. 'up and down'. Therefore, over the course of a career, many if not most serial entrepreneurs do not just

inherit an assets and liabilities balance sheet of human capital, but must also face alternating periods of relative economic success and relative difficulty. Exit after an outright failure, with a bankrupt firm, results in serious economic and other consequential losses. Exits after the successful sale of a business as a 'going concern' can increase personal wealth substantially and provide available liquidity for the next venture. Persistent serial entrepreneurs must be able in some way to smooth out the effects of these 'swings and roundabouts'. This essential part of the serial entrepreneurial process is of great interest to researchers.

How serial entrepreneurs deal with the negative consequences of the venture failure 'impostor' has become an important and contemporary theme (e.g. Cope, 2011; McGrath, 1997; Sarasvathy, Menon, and Kuechle, 2013). Both successful and unsuccessful exits lead to a change in personal wealth, the revaluation of prior knowledge, and completely new learning that together must impact the process of re-entry. The entrepreneurial process of repeatedly climbing back into the 'entrepreneurial ring' to compete again requires deeper investigation if we are to understand the sequence of ventures.

1.2.6 Serial vs. Portfolio Entrepreneurship

Another reason for studying serial entrepreneurs is that recent research suggests that there are significant economic performance differences between serial and portfolio entrepreneurship (Robson, Akuetteh, Westhead and Wright, 2012a; Ucbasaran, Westhead, Wright and Flores, 2010). Unlike serials who exit their firms before starting the next, portfolios found clusters or groups of businesses. Several studies by Ucbasaran, Westhead, and Wright show that serial entrepreneurs are, in some ways, more similar in behaviours and outcomes to much less experienced novice 'one-time' entrepreneurs. Indeed, recent progress in the development of a theory of serial vs. portfolio vs. novice entrepreneurship by Parker (2014) rests on this evidence of relative performance. Serials perform less well because they have less ability to implement opportunities compared to portfolio entrepreneurs and take on more risky opportunities (Parker, 2014).

The theory of serial and portfolio entrepreneurship has been developing separately for a while. Research of portfolio entrepreneurs has stolen the march on the study of serial entrepreneurs. Empirical research of diversifying portfolio entrepreneurs led by Rosa (1998), and extended to farmers (Alsos and Kaikkonen 2004; Alsos, Ljunggren and Pettersen, 2003; Alsos and Carter, 2006) and small manufacturers (Iacobucci, 2002, Iacobucci, and Rosa, 2005) stress the importance of resources. Perhaps controversially, Iacobucci and Rosa (2004) maintain that the relatively modern evolutionary resource-based theory of the firm (e.g. Penrose, 1959; Rumelt, 1974) better explains

portfolio entrepreneurship than the longstanding theory of individual entrepreneurship (Cantillion, 1775). Parker (2014) postulates that resource-based advantages provide portfolio entrepreneurship a clear economic advantage over serial entrepreneurship.

The theory of serial entrepreneurship is not static. It is postulated that serials benefit from a form of pseudo sequential diversification over their careers (Saravathy, Menon and Kuechle, 2013). This study is an opportunity to close the gap between serial and portfolio research by exploring recent theoretical advances. The study reviews other related areas of research such as incubation (Cooper, 1985) and entrepreneurial recycling (Mason and Harrison, 2006), and make additional contributions to the theory of serial entrepreneurship derived from a multi-voiced narrative of the careers of 24 entrepreneurs. This thesis is a timely and relevant addition to a developing field of entrepreneurship.

1.3 Section 3. Outline of Subsequent Thesis Chapters

1.3.1 Chapter 2 Theories of Serial Entrepreneurship

This chapter reviews the wide range of explanatory frameworks applicable in an exploratory study of serial entrepreneurs. It summarises and guides further detailed analysis and review in the following chapter.

1.3.2 Chapter 3 The Constructs of Serial Entrepreneurship Research

Serial entrepreneurship sits within the broader field of habitual entrepreneurship. This chapter introduces the main constructs of habitual entrepreneurship to distinguish between serial and portfolio founding and other forms of habitual entrepreneurship. It provides insights into how current literature must be assessed, and reviews the choices of construct required by the researcher.

1.3.3 Chapter 4 Habitual Entrepreneurship: Theory and Evidence

This chapter scrutinises and evaluates in detail what is known about habitual entrepreneurs and the main sub-types of serial and portfolio entrepreneurs. The chapter is divided into a number of sections which were summarised and introduced in Chapter 2.

1.3.4 Chapter 5 Research Questions, Constructs and Measurement

The literature review is followed by the development of the exploratory research questions of the thesis by responding to calls made from within the extant literature, and synthesising key themes in

the literature. The chapter defines additional research constructs and measurement techniques required to answer the research questions.

1.3.5 Chapter 6 Research Methodology

The chapter sets out the methodological approach used to address the research questions. It shows that the research employed a pragmatic and scientific approach using case studies of entrepreneurial careers and venture genealogies. The chapter explains the research paradigm adopted, the research design and its implementation including an assessment of the reliability and validity of the thesis.

1.3.6 Chapter 7 Data Analysis and Research Findings

This chapter presents the findings of the exploration of 26 case studies of habitual entrepreneurs. The findings focus on the study of 24 multiple founders, 21 serial entrepreneurs and 3 portfolio entrepreneurs. 2 mixed cases are also analysed. The results of the study are interpreted and conclusions drawn that address the research questions.

1.3.7 Chapter 8 Summary, Conclusion and Recommendations

This chapter provides an overview of the study outcomes. It examines the implications of the study for both the theory and practice of entrepreneurship. The limitations of the study are discussed, concluding with recommendations for future research.

1.4 Chapter Summary

This thesis is positioned to make an empirical and theoretical contribution to the understanding of serial entrepreneurship. This is an in-depth within and cross-case analysis of the careers of 21 serial entrepreneurs and their 112 start-up ventures conducted using a pragmatic methodology, supplemented and triangulated with 3 cases of portfolio entrepreneurs, and 2 cases of careers that mix inherited, acquired and founded ventures. Collectively these cases offer a multi-voiced narrative of their perspective on the experience of serial entrepreneurship and contrasting forms of habitual entrepreneurship. Serial entrepreneurs are distinct from other entrepreneurs because of their unique experience and expertise in the cyclical pattern of venture creation, exit and re-entry. This thesis is a timely and relevant addition to the developing field of serial entrepreneurship.

CHAPTER 2

Theories of Serial Entrepreneurship

This chapter introduces the relevant literature. Serial entrepreneurship sits within the broader field of habitual entrepreneurship. Researchers have not always distinguished between the different sub-types of habitual entrepreneur: founders, acquirers, inheritors, serials and portfolios. This chapter reviews the wide range of explanatory frameworks applicable to an exploratory study of serial entrepreneurship. Chapter 3 reviews the definitions of the various forms of habitual entrepreneurship and critically appraises the use of constructs in the extant literature. Following this discussion, Chapter 4 provides a considered and detailed review and analysis of the empirical contribution of the literature of habitual entrepreneurship relevant to this specific study of serial entrepreneurs.

2.1 Section 1. Economic Theories of Entrepreneurial Participation and Selection

Birley and Westhead (1993) characterised the field of habitual entrepreneurship as having no single theory to facilitate hypothesis formation and testing. However, rapid progress is now being made. Plehn-Dujowich (2010) has extended economic theory to serial entrepreneurship allowing a return to entrepreneurship after firm failure. Sarasvathy, Menon, and Kuechle (2013) posit that serial careers can succeed even if some firms fail due to learning that causes a form of pseudo diversification. Parker (2014) has proposed a theory of novice, serial and portfolio entrepreneurship. Here portfolio entrepreneurship is posited as being economically superior to both serial and novice entrepreneurship. All ask for further empirical research and theoretical development. Overall, as the review of the literature will demonstrate, there remain many unanswered calls for further research. In particular, there are significant gaps in our understanding of serial entrepreneurs.

2.1.1 Returns to Entrepreneurship: Risk Taking vs. Entrepreneurial Ability

Economic theory views entrepreneurship within a general model of income choice between employment and entrepreneurship. An individual's income varies according to their willingness to bear entrepreneurial risk (Knight, 1921), and in equilibrium the wage adjusts to the point where the supply of workers is equal to the entrepreneurial risk bearing demand for labour (Khilstrom and Laffont, 1979). Risk bearing capacity is still important in current thinking. Serial entrepreneurs are posited to have a higher risk preference than portfolio and novice entrepreneurs (Parker, 2014). Theories of entrepreneurial choice determined by risk preference are heavily criticised by Shane (2000) and Samuelsson and Davidsson (2009) for assuming that all entrepreneurs have the same

ability. The alternative economic theory is that entrepreneurs are matched to suitable opportunities according to their ability.

Human Capital and Entrepreneurial Ability

Ability based economic theories emphasise the distribution of entrepreneurial talent as a form of human capital. The term entrepreneurial ability is often used interchangeably with talent, business acumen or judgement. Ability is the human capital component required to generate superior economic rents from a given set of resources and circumstances (Easley and Roberts, 2012). For Lucas (1978), talent is a fusion of entrepreneurial, managerial and ownership human capital that is matched to firms, such that in equilibrium the most able entrepreneurs run the best performing firms. As an entrepreneur's talent is not known in advance, individuals can only learn about their actual acumen by running a business (Jovanovic, 1982). If they learn they are economically efficient, they stay in the industry and expand output; if inefficient they exit and return to employment. Here, entrepreneurial learning has a narrow definition; it is only learning about one's ability. It is also context dependent in being industry specific. Favourable costs will raise the firm's expected earnings in that industry, however, not to the same extent in another industry (Jovanovic, 1982). Furthermore, ability should not be confused with expertise. Expertise is assumed to be capable of development through experience and learning (Minniti and Bygrave, 2001; Politis 2005). Talent is assumed to be fixed.

2.1.2 Economic Selection by Ability: Exit and Re-entry

Holmes and Schmitz (1990; 1995) extend Lucas's (1978) thesis of the economic selection through entrepreneurial talent to include habitual entrepreneurship. As new and better opportunities arise in the economy, entrepreneurs must transfer the current viable businesses through sale, delegation or abandonment in order to pursue them. Therefore, entrepreneurs are subject to a dynamic economic division and specialisation of labour, matching entrepreneurs to suitable opportunities. Those with high ability, (i.e. a Ricardian comparative advantage in entrepreneurship), transfer and start new firms. Low ability types prefer to keep existing businesses and/or acquire firms.

Furthermore, and supported by some evidence, Holmes and Schmitz predict that when examining the pattern of success and failure, the probability of business failure (a mismatch between the opportunity and the entrepreneur) decreases with the age of the business. In addition, it is the high quality businesses that are sold. Plehn-Dujowich (2010) refine their work into a theory of serial entrepreneurship. Serial entrepreneurs either maintain the current business, or shut it down and then either exit entrepreneurship, or launch a new venture incurring a serial start-up cost. High-skill

serial entrepreneurs shut down businesses of low quality until a high quality business is found. High-skill serial entrepreneurs never permanently exit entrepreneurship because they enjoy a comparative advantage in start-up costs, access to start-up capital, and are able to earn above the returns available to their labour.

Therefore, persistent serial starter entrepreneurs are more likely to have high ability. Researchers would expect to observe start-ups following exits from relatively short lived ventures, of which there may be several until the right one is found, and start-ups following an exit by sale of relatively long lived and hence high quality businesses. The theory is not completely clear on what happens following the sale of a high quality business. Logically, if the serial entrepreneur has not reached retirement age they return to start a business of at least similar quality.

Plehn-Dujowich's extended model that follows that of Holmes and Schmitz is still rather tentative in its treatment of outright failure or bankruptcy, assuming an orderly, managed closure. The effects of outright and costly failure on re-entry remain in need of further thought. Start-up costs following a failed venture are likely to be much higher than those after a successful exit by sale. Costs include dealing with previous economic losses and the cost effects of barriers to start-up resources, including the loss of creditworthiness, reputation and other forms of tradable social capital, and also the costs arising from a loss of self-confidence. There is probably a finite number of tries before a serial entrepreneur finds either a suitable opportunity that generates success or quits entrepreneurship. It can be expected that the number of tries increases in proportion with the ability of the serial entrepreneur to find opportunities and husband and redeploy resources during their career.

2.1.3 Liquidity Theory and Entrepreneurial Intentions

One such resource, liquidity (i.e. the ready availability of financial capital) is likely to have significant impact on the probability and type of re-entry. Capital markets do not provide enough liquidity to entrepreneurs due to the issues of moral hazard and adverse selection (Knight, 1921). Liquidity constraints ensure the would-be entrepreneur must bear most of the risk inherent in his or her venture. Only later once the firm is established do institutional investors perceive less risk and provide capital (Evans and Jovanovic, 1989). Therefore, for new entrants and the less successful returning serial entrepreneurs, personal savings and loans from friends and relatives are critical to business formation.

In contrast, successful talented serial entrepreneurs selling high quality businesses will be more liquid after exit. Consequently, they will have more options for the type and size of opportunity to

pursue, and are more likely to achieve greater returns. However, if an entrepreneur is unable to remain liquid on exit, or cannot convince financiers of their innate talent, or that they have learned from their experiences, they are unlikely to return to entrepreneurship. Less successful serial entrepreneurs are likely to return via opportunities that have low costs of detection and exploitation. Personal resources are likely to be an explanatory feature of the career trajectories of serial entrepreneurs. There is some evidence (Westhead, Ucbasaran, Wright, and Binks, 2005; Wright, Robbie and Ennew, 1997b) that serial entrepreneurs have a distinct preference to start-up using their own resources, thereby self-limiting their liquidity.

2.2 Section 2. Human Capital Theories of Habitual Entrepreneurship

Habitual entrepreneurship is essential to the economic selection and matching of entrepreneurs to opportunities. This process results in widespread and important economic efficiencies. Other theories of habitual entrepreneurship can be positioned within this process from the perspective of the interaction of opportunities, individual entrepreneurs, and their firms. Chief among them is individual human capital theory and related areas of learning, cognition and teams. Like economic selection, human capital theories predict that the serial entrepreneurs will start businesses for which they have the requisite talents, skills and abilities. Human capital is dynamic in that entrepreneurs are exposed to new information. They process information using their ability to think and to learn to update and revalue their situation and subsequent future decisions and actions.

2.2.1 Entrepreneurial Human Capital

The bulk of habitual entrepreneurship research takes an individual human capital perspective. The basic premise of human capital theory (Becker, 1964; 1993; Castinas and Helfat, 1992; 2001) is founded on economic principles. Entrepreneurs should earn a return commensurate with their human capital, their abilities, skills and talents. Therefore, entrepreneurial human capital should be positively related to firm performance. Innate talent is measured by researchers indirectly from the economic performance of the entrepreneur's firm. Other direct measures of economic returns to human capital, such as private personal income or net wealth are more difficult data to access and much less used. As it is difficult to measure talent directly, it is assumed to be cognitive in nature (e.g. Eesley and Roberts, 2012). Other researchers focus on more accessible measures of human capital such as counts of discrete instances of start-up experience (e.g. Cassar, 2014; Oe, and Mitsuhashi, 2013).

Human capital is most often conceptualised as a stock. Stocks of human capital are employed as situational talents, abilities, skills or expertise. Depending on the theoretical stance taken, relevant

entrepreneurial human capital can be either innate and largely fixed, or variable and accumulated through learning. Human capital when conceptualised as a variable stock also encompasses notions of depreciation, dissipation and unlearning (e.g. Parker, 2013). Successful serial entrepreneurs either possess fixed innate talents (Jovanovic, 1982), or alternatively accumulate the right kinds of experience rising up a learning curve reusing learning in subsequent ventures (MacMillan, 1986; Politis, 2005; 2008). A compromise view proposed here drawn from the review of the literature, is that serial entrepreneurs do learn and that talent and learning are intrinsically the same cognitive ability. Effective learning is a type of talent that enhances ability through experience and repeated practice.

Assets and Liabilities Theory

However, human capital theory relies on there being 'spill-over' effects from one venture to the next. In the assets and liabilities theory of habitual entrepreneurship Starr and Bygrave (1991) question the assumptions of the existence of a learning curve and that accumulated human capital is always an advantage in the next venture. Their qualitative study of a handful of habitual entrepreneurs within the US computer industry reveals that success in one venture does not always confer a transferrable advantage to the next. Prior experience builds a set of mainly intangible cognitive and social capital endowments. These can act either as assets or liabilities in the specific context of the next venture.

Reuber and Fischer (1994; 1999) provide a powerful critique of all simplistic human capital and firm performance studies. They maintain it is not the stock of human capital that is the independent variable, rather it is what happens during the course of a venture or the 'flow' effects of learning that are most important. Therefore, major events such as failure are likely to be significant in the formation of very specific entrepreneurial human capital. It is the skill or ability to make sense of and learn from these 'transformational' events documented in qualitative studies by Cope (2003; 2005; 2011) that is expected to be a feature of serial entrepreneurship. As already noted, Sarasvathy, Menon, Kuechle (2013) predict that persistent serial entrepreneurs recover from failure and transfer what they have learned into the next venture.

Entrepreneurial Teams

Another weakness of human capital as the explanatory variable is that it ignores the contribution of the whole founding team and other members of what de Koning (2003) calls the 'inner circle'. Team diversity and stability are associated successful behaviours (Eisenhardt and Schoonhoven 1990). However, this benefit may limit the range of venture opportunities due to 'group think'

(Kirschenhofer and Lechner, 2012) because it has been shown that serial entrepreneurs tend to work with the same trusted partner in several start-ups (Gemmell, Boland and Kolb, 2012).

Human Capital and Venture Performance

In spite of the inherent difficulties very many studies test the intuitive hypothesis that stocks of human capital will be positively associated with venture performance. Much of what we know about habitual entrepreneurship comes from these studies. Within this body of research empirical studies by Ucbasaran, Westhead, Wright with their collaborators since 1997 explore the behavioural and performance differences between novice, portfolio and serial entrepreneurs.

Overall, as posited in the assets and liabilities theory (Starr and Bygrave, 1991), the evidence shows a positive relationship between stocks of human capital and performance but it is at best inconsistent and returns to performance are often non-linear (Parker, 2013; Toft-Kehler, Wennberg and Kim, 2014; Schollhammer, 1991). The most recent longitudinal studies of habitual entrepreneurs predicated on the learning from experience theory of human capital (e.g. Oe and Mitsuhashi, 2013; Toft-Kehler, Wennberg and Kim, 2014) indicate that context specific human capital, such as industry experience when starting a business in the same industry 'corridor' is usually advantageous. This conclusion adds to early work by Vesper (1980) and Schollhammer (1991) that noticed that many habitual entrepreneurs tend to start subsequent businesses in the same or a related industry. The ventures of serial entrepreneurs are likely to benefit economically from the maintenance and reuse of industry content and context specific human capital (Chandler, 1996), and most likely also other resources that promote the specialisation of entrepreneurial human capital and returns to experience.

Entrepreneurial Talent

The alternative innate talent theory of human capital has also produced recent empirical work in support of its hypothesis (e.g. Chen 2013; Eesley and Roberts, 2012). Here following Jovanovic's work, entrepreneurial learning is only learning about one's abilities and precludes experiential learning by doing. Entrepreneurial talent is discovered and remains fixed, as no amount of entrepreneurial experience leads to talent enhancing learning. In a special form of selection theory called 'success breeds success' (Eesley and Roberts, 2012), talented entrepreneurs are more likely to succeed in their initial ventures, and these successes are then likely to motivate them to found more and similarly successful firms. Failed but returning serial entrepreneurs are assumed not to learn, being as successful as novice entrepreneurs (Kovner, Lerner and Scharfstein, 2010). Furthermore, Eesley and Roberts (2012) contend that the most highly talented do not rely on industry experience,

though it can be useful. Therefore, researchers can be expected to observe talented serial entrepreneurs succeeding in different industries, pursuing the best opportunities, wherever they may be.

Relative Performance: Novice vs. Serial vs. Portfolio Entrepreneurship

In a related stream of the literature, the relative performance of novice, serial and portfolio entrepreneurs is compared. Evidence suggests that portfolio entrepreneurs have different behaviours and perform better than both serial and novice entrepreneurs (Robson, Akuetteh, Westhead and Wright, 2012a; 2012b; Westhead, Ucbasaran, Wright, and Binks, 2005). The explanation postulated by Parker (2014) is that portfolio entrepreneurs benefit from related diversifications in the same industry, and also unrelated diversifications to spread portfolio risk.

The very large area of human capital inspired research literature is assessed in the first three sections of the next chapter, and the literature on entrepreneurial teams as it applies to habitual entrepreneurs is reviewed in Chapter 4, section 6. Overall, one can conclude that deep industry specific experience is more valuable than broad experience, and learning and talent are related cognitive abilities.

2.2.2 Entrepreneurial Cognition

Entrepreneurial talent is ascribed by researchers to cognitive ability (Eesley and Roberts, 2012; Mitchell, Busenitz, Bird, Gaglio, McMullen, Morse and Smith, 2007). As cognition is a 'resource' required for learning and for the synthesis of new and prior knowledge when making judgments, it is subject to economic theories of resource allocation. The comparative advantage of entrepreneurs stems from two scarce economic resources: access to information and the cognitive ability to process it (Casson, 2005b; Venkataraman, 1997). By dint of their greater experience and expertise, habitual entrepreneurs should have more of both. Expert entrepreneurs are expected to demonstrate superior cognitive abilities such as metacognition and mindfulness honed through practice (Baron and Henry, 2010; Rerup, 2005). People will discover and exploit specific opportunities that others cannot see when information asymmetries and history-dependent accumulation of experience exist (Shane, 2000; Shane and Venkataraman, 2000). However, specific cognition processes are difficult to isolate and measure outside of controlled laboratory experiments. Nevertheless, persistent serial entrepreneurs can be expected to be observed using opportunity specific sources of information judiciously and creatively, and with some self-awareness.

The relevant literature on expert cognition and its relationship to the entrepreneurial talent of habitual entrepreneurs are further reviewed and discussed in Chapter 4, section 4.

2.2.3 Entrepreneurial Learning: Success and Failure

The fixed nature of talent and the absence of talent enhancing learning are rejected by most contributors (e.g. Politis, 2005; 2008) who maintain the existence of an entrepreneurial learning curve proposed by MacMillan (1986). The serial entrepreneur learns how to augment their original endowment of entrepreneurial skills and talents thus changing their expectations of future profits from entrepreneurship and making them more likely to re-enter even if their venture fails (Stam, Audretsch and Meijaard, 2008). Should they fail and need finance to start again they can demonstrate to financiers what they have learned and convince them to back them again. Indeed the venture capital industry values experience (Hsu, Haynie, Simmons, and McKelvie, 2014) and failed serial entrepreneurs with suitable experience do still receive venture capital backing (Gompers, Kovner, Lerner and Scharfstein, 2010).

Learning from Failure

As previously noted, learning and failure are related streams of literature of habitual entrepreneurship, where 'learning the hard way' (Stokes and Wilson, 2002) should lead to a profound reassessment and learning by the entrepreneur (Cope, 2011). In effectual theories of expert entrepreneurship, failing firms and successful careers are not mutually exclusive (Sarasvathy, 2001; Sarasvathy, 2004; Sarasvathy, Menon, Kuechle, 2013). Habitual entrepreneurship requires talented cognitively intelligent individuals to 'infect' the next venture with learning from both success and failure.

Entrepreneurial learning forms a substantial part of the literature related to habitual entrepreneurs and is reviewed in Chapter 4, section 5.

2.2.4 Venture Exit: The Missing Piece?

Exit is an essential part of the entrepreneurial process (DeTienne, 2010). It is needed for economic models of selection, and requires a financial decision to 'harvest' or 'liquidate' an investment (Wennberg, Wiklund, DeTienne and Cardon, 2010). However, exit experience is generally missing from the list of types of entrepreneurial human capital used in venture performance studies. By definition, serial entrepreneurs have more experience of exit and re-entry than other entrepreneurs. How serial entrepreneurs are affected by a positive or negative exit is of central interest in understanding the relationship between a serial entrepreneur's sequence of start-ups. Clearly, it is

central to both sides of the business performance equation. The post-conditions or outputs of one venture, including learning, liquidity and other resource positions form the pre-conditions or inputs for the next.

In reality success and failure may not be such contrasting 'black' or 'white' outcomes (Headd, 2003, Rerup, 2006). Entrepreneurs have different performance thresholds of actual performance that trigger the decision to terminate their businesses (Gimeno, Folta, Cooper, and Woo 1997), and by extension should show differential levels of determination and persistence in the face of difficulties.

The literature on venture exit is reviewed in section 7 of Chapter 4.

2.3 Section 3. The Corridor Principle, Path Dependencies and Real Options

The theme of this review of the literature is that habitual entrepreneurship can be positioned within a process that matches experienced entrepreneurs to suitable opportunities. Human capital theory explains the actions of individual entrepreneurs. In essence they predict that serial entrepreneurs are subject to the economics of the division and specialisation of labour that will have a bearing on the sequence of start-ups. Another group of theories take a wider resource perspective. These approaches reveal more about the likely sequence of ventures started by a serial entrepreneur.

2.3.1 The Corridor Principal

A key postulate is that the current business is instrumental in determining the future trajectory of habitual entrepreneurs. They follow 'corridors' of related ventures. A current venture enables the perception of opportunities not available to nascent entrepreneurs. The corridor principle (Ronstadt, 1984; 1988) holds simply that one business leads to another and the corridor or 'direction of travel' of a serial entrepreneur's career is likely to have a mixture of serendipitous, evolutionary and perhaps irreversible (i.e. path dependent) qualities. Lower economic returns from earlier ventures may be acceptable if they provide entry to subsequent ventures with higher returns (Ronstadt, 1988). Individual ventures then generate 'options', to the next venture and are not an end in themselves. This view is more subtle than that taken in conventional business performance studies, but is consistent with the views of effectual theorists (e.g. Sarasvathy, Menon, and Kuechle, 2013) who maintain that it is the overall career of a serial entrepreneur that should be assessed.

The corridor principle is conceptually rather opaque, without a strong predictive framework, other than that ventures will be related in some way. Theoretically entrepreneurs can follow a number of different types of corridor, such as: industry, technology, or even more specific product or customer corridors.

Path Dependencies: Does History Matter?

The corridor principle links the future path of a serial entrepreneur to their past. Therefore, research should involve an assessment of the past as a source of explanatory variables, i.e. there is an explicit assumption as Arthur (1989) shows that 'history matters'. Human capital theory with its emphasis on the assets and liabilities of prior experience and spill-over effects is inherently path dependent. Baron and Ensley (2006) find evidence for well-developed cognitive templates that facilitate the reuse of experience. The most influential economic theory of entrepreneurial learning by Minniti and Bygrave (2001) predicts reinforcement of existing patterns of behaviour even though they may be sub-optimal, and the search for opportunities is similarly constrained within known information channels (Fiet, 1996) and knowledge corridors (Venkataraman, 1997).

When our understanding of corridors, path dependencies and human capital theory are combined with some evidence (e.g. Chen, 2013; Schollhammer, 1991), it is expected that the majority of portfolio and serial entrepreneurs are most likely to start new ventures in the same industry corridor so as to specialise and reuse prior knowledge.

2.3.2 Real Options Theory

While a corridor gives preferential access to future opportunities, perhaps constrained by past choices and investments, real options show how the corridor might provide a platform, a jumping-off point through a set of relatively low-cost options for future action. Options exploit the entrepreneur's base of accumulated human capital and other resources. The real options theory of habitual entrepreneurship (McGrath, 1996) incorporates uncertainty (Knight, 1921), the resource view (Wemerfelt, 1984), asset parsimony (Starr and MacMillan, 1990), evolutionary economics (Nelson and Winter, 1982) and entrepreneurial opportunities (Bowman and Hurry, 1993). Real options need the presence of an opportunity to amplify them (McGrath, 1997) where the net present value of future opportunities is increased by making incremental resource investment in an uncertain decision space (McGrath, Ferrier and Mendelow, 2004). Option development involves costs such as market research or development and trial of a test product (McGrath, 1996), or as proposed by Ronstadt (1988) starting a new venture. Social capital in the absence of real assets can be used to obtain real resources at reduced costs (McGrath, 1996). The habitual entrepreneur's social network gives access to a large number of options and latent opportunities. Social capital can reinforce existing corridors or open new corridors. Should the window of opportunity close the investments are lost. Even in negative circumstances of losses and venture failure, habitual entrepreneurs using real options are likely to see these events as part of a wider learning and

information acquisition process (McGrath, 1999). A view taken up in later effectual theories of serial entrepreneurship (Sarasvathy, Menon, and Kuechle, 2013) emphasises small scale entry and experimentation. In summary, real options predicts that serial and portfolio entrepreneurs will be observed evolving their next venture from a set of options, related to previous experience such as previous ventures.

The important role of social capital in complementing human capital and other resources is reviewed and discussed in Chapter 4, section 6.

2.3.3 Knowledge and Resource Corridors

Many contributors emphasise the strong effects of corridors in predicting start-up decisions by habitual entrepreneurs.

Habitual entrepreneurs become specialised and stuck in a particular industry or wedded to one kind of technology. Path-dependent developments will make it increasingly difficult for agents to deviate from their initial decisions (Gruber, 2010). However, returns to specialisation make perfect sense when the industry is growing, but not when better opportunities are available in other industries. Economists look to entrepreneurs to innovate and even create new industries. Narrow corridors seem incompatible with Schumpeter's (1934) innovative entrepreneur.

Knowledge Corridors

There are also 'knowledge corridors' (Venkataraman, 1997). Option development and deployment is limited by current knowledge (McGrath, 1999) and the availability and cost of new information (Casson, 1982). Corridor pathways are constrained by the cognitive information and information processing capabilities of serial entrepreneurs, limiting their ability to identify and exploit other perhaps superior opportunities. However, it should be possible to escape the knowledge corridor by sourcing new knowledge from outside the firm (Gruber, MacMillan, Thompson, 2008). In addition, in-depth knowledge of a specific technology should create new knowledge corridors that lead to radical and innovative opportunities (Chandler, Douglas and DeTienne, 2005). Empirical evidence suggests that pre-existing knowledge endowments do constrain opportunity identification even in the presence of new information (Gruber, MacMillan, Thompson 2013; Shane, 2000) and it is expected that serial entrepreneurs will stay within corridors defined by prior knowledge.

Resource Corridors

The sunk cost of existing assets acts like a low cost options contract that limits downside risk and is readily available (Bowman and Hurry, 1993). The sunk cost of existing assets may also inhibit the factor's exit from a firm (Peteraf, 1993). Resource based options are intrinsically path dependent in that they rely on relatively immobile, and inimitable resources (McGrath, 1996). Options will be idiosyncratic in that they have high switching costs, cannot be easily sold, replaced or used elsewhere (Wernerfelt, 1984). Resources of this type include the firm's core technology and the product-market served (Hannan and Freeman, 1989; Helfat and Lieberman, 2002). Indeed there is plenty of evidence from many studies of firm diversification and acquisitions, that returns from using organisation experience require similarity between past acquisitions and the present one (e.g. Greve, 2003) and narrow diversifiers should achieve higher returns (Peteraf, 1993).

Significant physical assets and the knowledge to exploit them have a strong first order effect on opportunity recognition and pursuit by portfolio entrepreneurs. From various studies of farm-based portfolio entrepreneurs, portfolio founders have a high number of potential opportunities and are better able than novice and serial founders to turn these shadow options into real options (Alsos and Kolvereid, 1998) for related diversifications (Alsos and Carter, 2006). The combination of these various corridor effects is exhibited in the strong tendency of portfolio entrepreneurs to make related diversifications. This pattern of related diversifications is so strong that the behaviour of small manufacturing portfolio entrepreneurs is thought better understood through the evolutionary resource-based theory of the firm. Here the portfolio entrepreneur masters dependencies rather than seeks independence (Iacobucci and Rosa, 2004).

The use of the evolutionary resource-based theory of the firm to explain portfolio entrepreneurship is reviewed further in Chapter 4, section 8.

2.4 Section 4. Recent Developments in the Theory of Habitual Entrepreneurship

2.4.1 Theory of Novice, Portfolio, and Serial Entrepreneurship

Parker (2014) develops the theory of habitual entrepreneurship from a synthesis of a number of theoretical and empirical threads. Parker postulates that novice, serial and portfolio entrepreneurs are distinguished by differences in entrepreneurial talent (Lucas, 1978) and preference for risk (Khilstrom and Laffont, 1979), which result in different opportunity recognition and exploitation behaviours. Differences in ability are cognitive in nature (Brigham, De Castro and Shepherd, 2007; Kirzner, 1973). Portfolio and serial entrepreneurs recognise more opportunities than novices (e.g. Westhead, Ucbasaran, Wright, and Binks, 2005). However, portfolio entrepreneurs have superior

ability to exploit opportunities than both serials and novices (e.g. Robson, Akuetteh, Westhead and Wright, 2012a; 2012b) due to the advantage in being able to make related diversifications.

Portfolio entrepreneurs have a medium risk profile, preferring to exploit related opportunities due to path dependency (Gruber, 2010), the costs of searching widely for unrelated opportunities (Fiet, 1996) and cognitive limitations. Serial entrepreneurs have a higher preference for risk, and a lower exploitation ability, yet still take on progressively riskier opportunities. Being more risk averse, portfolio entrepreneurs are expected to spread their risks through unrelated opportunities with negative covariance. As a consequence of their comparative advantage in recognising and exploiting diversification opportunities, portfolio entrepreneurs enjoy greater returns than serials.

The theory is a reflection about what is known about portfolio entrepreneurship, and Parker calls for further empirical investigation and theoretical contributions. Nevertheless, there are still gaps in our knowledge of serial entrepreneurs, who are fundamentally different from portfolio entrepreneurs in exiting their ventures.

2.4.2 Emergent Theory of Serial Entrepreneurship: Pseudo Diversification and Entrepreneurial Recycling

An alternative theory of serial entrepreneurship can be synthesised from the extant research literature. From this analysis it is suggested here that the economic advantage to portfolio entrepreneurship arising from a superior ability to find and exploit diversifying opportunities is not absolute. Sarasvathy, Menon, Kuechle (2013) postulate that serial entrepreneurs have a form of pseudo diversification over their careers. The construct of pseudo (i.e. ersatz) diversification is not clearly defined, requiring interpretation and further elaboration. The process is driven by learning, in that entrepreneurs diversify away from factors that made them fail, while retaining the facets of successful ventures, and so do not start again from scratch. This achieves the equivalent of an upward sloping learning curve though venture outcomes can be both positive and negative.

The process of serial entrepreneurship with exit and re-entry will conform to many of the postulates of the corridor principle, real options and the evolutionary resource-based theory of the firm introduced and discussed in this chapter. For serial entrepreneurs the process needs to take account of the exit, and the absence of a firm for a period of time. Liquidity and other resource positions will vary depending on the outcome of the previous venture. A basis for understanding the process of serial entrepreneurship is incubation, the process by which nascent entrepreneurs are incubated by employers (Cooper, 1985). Incubation demonstrates how transfers of resources are

made between discrete ventures. Furthermore, incubation predicts that the next venture is strongly related to the 'host' incubator, and hence, is highly likely to be a related diversification.

Mason and Harrison (2006) analysed the career paths of five entrepreneurs. Two became serial founders of businesses very similar in nature to their first venture. They observed a process they call 'entrepreneurial recycling' where resources recycled include: technology, former work colleagues, former employees, brand names, markets, local contacts and reputation in the business community. These recycled resources, arising from (i.e. incubated in) preceding firms support the exercise of real options and the evolution of the next business. If this process is equivalent to pseudo diversification, then serial entrepreneurs accumulate learning that is not tied to an existing firm. This gives serial entrepreneurs preferential access to known (i.e. de-risked resources) whose costs are largely sunk. These economic advantages for the finding and exploitation of new opportunities may be equivalent to those of portfolio entrepreneurs.

2.5 Chapter Summary

There is now an emerging theory of serial, portfolio, and novice entrepreneurship. Further synthesis brings related concepts and supporting evidence into a largely economic framework. Individuals are selected into entrepreneurship on the basis of their attitude to risk or their entrepreneurial ability. Entrepreneurial ability can only be learned from participation and feedback. There is a learned experience versus innate talent debate within human capital theory, likely resolved by assuming that both are cognitive in nature. In selection theory, serial founders are high ability types who shut down low quality businesses to start again, though the cost makes the number of tries finite. On the other hand, portfolio entrepreneurs can exploit the economic synergies of diversified business portfolios, and some evidence suggests that they seem to perform better than serials. Evidence shows that serial entrepreneurs prefer to be self-funding, constraining liquidity. This must reduce the size of the opportunity considered.

Assets and liabilities theory states that measuring stocks of human capital without the detailed context of the newly created venture will not be correlated with venture outcomes. This appears to be true, as the many performance studies expecting stocks of human capital to be matched with commensurate outcomes together provide inconclusive evidence. Nevertheless, recent studies are consistent in showing returns to experience if start-ups are confined to the same industry corridor. Serial entrepreneurs are expected to develop higher order cognition as a result of experience. Experience of failure engenders significant transformational learning. However, assets and liabilities

theory posits that any positive benefits of experience cannot be guaranteed to be relevant in subsequent ventures.

Human capital and venture performance studies overlook the exit and re-entry experience of serial entrepreneurs, a subject of central interest to this thesis. A number of different theories suggest that habitual entrepreneurship is confined to quite narrow corridors walled by prior knowledge, and other resource endowments, magnified by path dependencies. This narrowness seems particularly true for portfolio entrepreneurs. Researchers believe that portfolio entrepreneurship is best explained by the evolutionary resource-based theory of the firm, a theme amplified in recent developments. An alternative view, focussed on the individual, is that serial entrepreneurs practise a form of effectual learning from venture to venture. There is evidence that serials engage in a form of resource recycling. Overall, the process of serial entrepreneurship has parallels with incubation, and serials are able to transfer knowledge and resource advantages to the next venture. These ideas provide the basis for further theoretical development in this thesis.

Chapter 2 has introduces the literature. Chapter 3 now examines the main constructs of serial entrepreneurship.

CHAPTER 3

The Constructs of Serial Entrepreneurship Research

Chapter 2 reviewed the wide range of explanatory frameworks applicable to an exploratory study of serial entrepreneurship. Accordingly, because definitions and constructs should be derived from the consideration of the relevant theory, this chapter reviews the use of constructs in the relevant literature. Following this discussion, Chapter 4 provides a detailed review and analysis of the empirical evidence.

The serial founding of new enterprises sits within the broader field of habitual entrepreneurship. Chapter 2 discussed recent developments in the theory of entrepreneurship that make a separation between the main sub-types of entrepreneurship: novice portfolio and serial. In this chapter the two main sub-types of serial and portfolio entrepreneurs are distinguished. In addition, the theoretical and practical issues arising for conducting and positioning new research of serial entrepreneurs are critically evaluated.

3.1 Section 1. Types of Entrepreneurship: Habitual, Serial, Portfolio, Novice

This thesis is positioned as part of efforts to unpick the heterogeneity of entrepreneurial behaviour. All such research need clearly defined constructs. However, there is no generally accepted definition of a 'habitual' entrepreneur. At the most general level, 'habitus' entrepreneurship is defined as an on-going entrepreneurial action born out of previous business ownership experience (Wright, Westhead, and Sohl, 1998). Actual definitions vary from researcher to researcher. A common reason is the practicalities of sampling and methods of analysis used to group the entrepreneurs (Westhead and Wright, 1998a). The variety of definitions for the same or similar constructs presents an obstacle to a clear and consistent comparative review of the literature, the development of research questions and methodology, and the accurate positioning of new contributions. Consequently, they are discussed and evaluated here at the beginning of the thesis.

3.1.1 Habitual Entrepreneurs: Serial and Portfolio Entrepreneurs

Habitual entrepreneurs have multiple business ownership experience (Ucbasaran, Westhead, and Wright, 2009). Classifications of habitual entrepreneurs typically employ two dimensions: 1) whether firms in a career occur serially, that is independently, one at a time, or in parallel, to form a portfolio; and 2) whether the entrepreneur is a founder of a new start-up, or the firm was already in existence and either purchased or inherited.

This 2 x 2 classification gives rise to 4 sub-types of habitual entrepreneurship, summarised in Table 2.1. below.

Number of Businesses	Existing Firms	New Firms
<i>One at a time(with exit from entrepreneurship)</i>	<i>Serial Acquisition (Serial buy-in, buy-out, outright purchase) Inheritance</i>	<i>Serial Founding (Start-up)</i>
<i>Several in parallel (without exit from entrepreneurship)</i>	<i>Portfolio Acquisition</i>	<i>Portfolio Founding</i>

Table 2.1 Categories of Habitual Entrepreneur – a development of Westhead and Wright (1998a) and Ucbasaran, Westhead and Wright (2008).

However, the common use of the general classification of habitual entrepreneur and its near substitutes can give rise to construct ambiguity when interpreting the literature. The term habitual entrepreneur was first coined by MacMillan (1986). Here they are individuals who enjoy the challenge of the start-up, rather than acquisition. Then once the business is running smoothly it is ‘handed over’ to professional management and the entrepreneur starts another business. Handed over is ambiguous. If it means they retain ownership and control then they are parallel founders, i.e. portfolio entrepreneurs. If the business is sold in its entirety then they are serial founders.

In the reality of real-world research, complex entrepreneurial careers often do not fall conveniently into the mutually exclusive categories given above. New ventures may not be purely sequential; because start-ups can overlap with an initial venture (Ronstadt, 1984) and ‘intermediate’ habitual entrepreneurs both start and acquire businesses (Ucbasaran, Wright and Westhead, 2003). Researchers needed to be prepared for such realities.

It is hoped that in-depth qualitative case study research can conduct a more nuanced approach to the careers of entrepreneurs while pursuing a sharper and clearer understanding of the sub-type of serial founder entrepreneurs. Nevertheless, to address the challenge of heterogeneity and improve the understanding of habitual entrepreneurship, it is still important to distinguish between portfolio and serial entrepreneurs. Many important studies (e.g. Westhead and Wright 1998a b; Westhead, Ucbasaran, and Wright 2005a, b; Westhead, Ucbasaran and Wright, 2009; Wright, Robbie and

Ennew 1997a, b; Ucbasaran, Alsos, Westhead and Wright, 2008; Ucbasaran, Westhead and Wright, 2006) make this distinction. These and other studies provide empirical evidence that suggests that serial and portfolio entrepreneurs are distinct groups. These distinctions have been important to recent theoretical and empirical development of the subject (e.g. Parker, 2014).

Thesis Definition: Serial Entrepreneurship and the Importance of Exit

The cycle of starting, exiting and re-entry to entrepreneurship using another start-up is the specific entrepreneurial process of central interest to this thesis. Therefore, this study is of serial or 'sequential' entrepreneurs who found multiple firms in a sequential 'one at a time' manner after exiting the previous venture (Ucbasaran, Westhead, Wright, and Flores, 2010). In contrast, portfolio entrepreneurs are multiple business owners who grow their total assets through starting several firms rather than growing one to its optimal limit (Rosa and Scott 1999a). To improve the clarity of this distinction, it is proposed that portfolio entrepreneurs are owners and managers of several firms in parallel and as a consequence do not exit entrepreneurship. In contrast, serial entrepreneurs are often without a firm, or if overlap occurs they are in the process of disposing of one business to focus on the next.

Construct Ambiguity and the Literature Review

Having clear definitions does not remove the challenge of reviewing the literature clearly and consistently. The term habitual appears to be going out of fashion. Recent theoretical work (Sarasvathy, Menon, Kuechle, 2013) and qualitative studies (Gemmell, Boland and Kolb, 2012) label all multiple founders as serial entrepreneurs when more accurately they refer to habitual entrepreneurs. The same 'serial equals habitual' convention is used in recent quantitative research (e.g. Eesley and Roberts, 2013; Hsu, 2007; Kirschenhofer and Lechner, 2012; Parker, 2013; Schaper, Mankelov, and Gibson, 2007; Toft-Kehler, Wennberg and Kim, 2014; Zhang, 2011). Consequently, it is difficult to both cite work accurately and report how the substantial body of empirical evidence relates specifically to serial or portfolio entrepreneurs.

To further complicate matters, even the phenomenon of serial entrepreneurship as defined here (entry, exit and re-entry to entrepreneurship) may be labelled differently: 'multiple' (Schollhammer, 1991), 'repeat' (Baron and Ward, 2004), 'revolving door' (Hessels, Grilo, Thurik, and van der Zwan, 2011) or 'renascent' (Stam, Audretsch and Meijaard, 2008). All researchers need to take care when comparing studies and presenting their results and conclusions. To avoid incorrect citations the review of the literature uses the terms used by the authors but to enhance clarity interprets the term to be consistent and communicate the significance and relevance of their findings.

3.1.2 Serial Founder Entrepreneurs

To focus more clearly on the role of serial founders of new firms requires an appreciation of the constructs of entrepreneur and firm as used in the relevant literature.

Originally, Cantillon (1755) defined the entrepreneur as a person who engages in exchanges for profit; and specifically who exercises business judgment in the face of uncertainty. Casson's (1982) refinement of Cantillon is someone who specializes in taking judgemental decisions about the coordination of scarce resources. Both definitions are heterogeneous, entirely functional and remove the need to consider attributes of the personality, whether a firm is required, and their role such as owner/manager.

In habitual entrepreneurship the principle focus of study is the sequence of entrepreneurial engagements with firms, in particular the founding of new firms. It is unsurprising then that in the literature of habitual entrepreneurship the entrepreneur and the firm are very closely correlated constructs. Here, the entrepreneur is most often defined using Hawley's (1907) principles of ownership and control. Ownership is required to obtain economic rents, and control to make decisions about the successful coordination of scarce resources. Through ownership, entrepreneurs also assume the risks and returns associated with the business (Gartner and Shane, 1995). However, the ownership stake may not be large enough for individuals to exhibit entrepreneurial behaviours (Ucbasaran, Westhead and Wright, 2008). Neither does a large stake guarantee entrepreneurial behaviour (Rosa, 1998). Therefore, research and the samples that support it must focus on actual entrepreneurial behaviour rather than quasi-legal constructs. Ucbasaran, Westhead and Wright (2008) propose that habitual entrepreneurs combine three elements: business ownership, a decision making role, and an ability to identify opportunities. In other words, through active ownership and control they lead the entrepreneurial process of opportunity recognition and exploitation, assuming the risks and rewards of these activities.

Firm Founding

Entrepreneurship research is interested in the entrepreneurial process that includes the founding of new firms. Habitual entrepreneurs who found more than one firm are a natural focus of attention. There are strong arguments for focussing on the establishment of new firms. Habitual entrepreneurs specialize in the activity of business start-up to become lifelong entrepreneurs (Iacobucci, 2002) with an increased ability to create novel ventures in future (Gartner and Shane, 1995). Whereas opportunity is the dominant concept across entrepreneurship literature (e.g. de Koning, 2003; Dimov, 2004; Gaglio, 1997; Sarasvathy, Dew, Velamuri and Venkataraman, 2003;

Shane, 2000; Shane and Venkataraman, 2000), entrepreneurship is also defined as the recognition and exploitation of opportunities that result in the creation of a firm (Alvarez and Barney, 2001). Kirzner (1973) maintains that opportunities that are not implemented were not opportunities in the first place. To many, entrepreneurship is then synonymous with founding new organisations (e.g. Aldrich and Reuf, 2006; Gartner, 1988; Katz and Gartner, 1988; Lazear, 2004).

Firm Founding vs. Acquisition and Inheritance

The focus of the study on serial founders is further justified because acquirers and inheritors of existing firms experience a different entrepreneurial process compared to that of founders of new firms. For acquirers there is much reduced scope for the recognition and development of a novel opportunity. The process of gathering resources is quite different, being centred on finding an acquisition target, and raising finance from third parties and then negotiating the purchase. In a Management Buy-Out (MBO) there is not even a search for a suitable acquisition as the nascent entrepreneur is simply employed in the right place at the right time (Ucbasaran, Wright, and Westhead, 2003). For inheritors of an existing business the entrepreneurial process is non-existent or much reduced (Cooper and Dunkelberg, 1986).

It is not surprising that very many researchers just focus on founders (e.g. Donckels, Dupont and Michel, 1987; Iacobucci and Rosa, 2005; MacMillan, 1986; Rosa and Scott, 1999 a b; Shane and Khurana, 2003; Westhead and Wright, 1998a). Nevertheless, care still needs to be exercised in reviewing studies. For example, Ucbasaran, Westhead, and Wright (2008; 2009) exclude inherited businesses, but include acquired enterprises. Toft-Kehler, Wennberg and Kim (2014) exclude businesses as duplicates if founded in the same industry and geographic location within a two-year period. Ucbasaran, Westhead, and Wright (2009) exclude as statistical outliers seven entrepreneurs who had owned 10 or more businesses. In this thesis these cases are not excluded. Indeed, grounded theory relies on a variety of cases and the patterns they form to address the exploratory research questions.

Firm Exit

However, this focus on new firm founding has recently come in for criticism, as giving only a partial and incomplete view. This criticism lends added relevance to the study of serial entrepreneurship. The entrepreneurial process is more than just the creation of a new venture. It does not end with creation, it ends with exit (DeTienne, 2010; Wennberg, DeTienne, 2014). Exit requires additional skills and behaviours in relation to the sale or liquidation of the firm. In addition, the outcome of the exit may be positive or negative and the entrepreneur must deal with the consequences of exit. For

this thesis, the fact and consequences of exit and the return to entrepreneurship to start-up again distinguishes serial entrepreneurs from other forms of habitual entrepreneurship.

Self-Employed Founders

There is some discussion as to whether self-employment is consistent with the entrepreneurial behaviours we seek to study and understand. Self-employment is categorised as a form of serial entrepreneurship (Ucbasaran, Westhead and Wright, 2008), and recent quantitative studies by Chen (2013) and Parker (2013) using national income and employment statistics include the self-employed. However, self-employment statistics include a grey area of individuals whose experience is closer to that of employees, such as with independent contractors. Some contractors are engaged by the company they have just left (Gartner and Shane, 1995). In addition, there are certain trades and professions in which self-employment is the natural contractual form for work (Casson, 2003). Entrepreneurial team formation is less common in self-employment, with only 15% of firms founded by more than one individual (Dencker, Gruber, and Shah, 2009). Sole proprietorships include part-time and miniscule firms (Wennberg, Wiklund, DeTienne and Cardon, 2010). For these firms exit may be 'a trivial decision' (Gimeno, Folta, Cooper, Woo, 1997; Wennberg, 2005). Therefore, self-employment is not necessarily representative of all serial entrepreneurship and making inferences from such recent studies requires caution. In this study, periods of self-employment noted in the careers of serial entrepreneurs were counted as employment rather than as ventures, although it is recognised that self-employment can be an important learning and transition phase for future serial entrepreneurs.

Distributorships and Franchises

In terms of the categorisation of the degree of important entrepreneurial behaviours, the literature on habitual entrepreneurs appears silent on the status of distributorships and franchises. In the opinion of the researcher, distributorships and franchises are similar to joint ventures in which resources, costs and risks and even equity are shared. While in the UK franchises are not classified in the official statistics as independent businesses, these offer entrepreneurial experience much closer to a fully independent start-up than self-employment and are therefore included in this study.

3.1.3 Entrepreneurial Experience: Novice vs. Habitual Entrepreneurs

While there are obstacles to distinguishing between the different forms of habitual entrepreneurship, the literature does make a clear distinction between novice and habitual entrepreneurs and studies regard them as mutually exclusive categories of entrepreneurs. 'One-

shot' (MacMillan, 1986) or novice entrepreneurs (Birley and Westhead, 1993) come to entrepreneurship with the 'liability of newness' (Stinchcombe, 1965) and are assumed to face a higher risk of mortality relative to their more experienced habitual counterparts.

Novice business and novice entrepreneur have a particular meaning in this study as they correspond to the serial entrepreneur's first venture. Clearly, some novices become serial or portfolio entrepreneurs (Hall, 1995). Therefore novice entrepreneurship is a 'rite of passage' for all habitual entrepreneurs and not mutually exclusive from the perspective of the individual. While it is the norm to compare independent groups of each type (e.g. Birley and Westhead, 1993; Ucbasaran, Westhead and Wright, 2006), in taking a career perspective this thesis takes the opportunity to make a within case comparison between the experienced serial entrepreneur and their nascent pre-entrepreneurial and initial venture novice selves.

Nevertheless, caution needs to be exercised when associating the term novice with inexperience. Novices include experienced entrepreneurs whose careers are defined by the development of one legal entity. Novice entrepreneurs do found and grow successful and substantial businesses. They simply may not use a separate legally constituted firm when diversifying their operations, particularly if new products and markets are closely related to the original business. Novices may develop a business for several years before progressing to their next venture. Therefore, the number of start-ups is only a measure of start-up experience and not of all forms of entrepreneurial expertise.

3.1.4 Habitual Entrepreneurs: Expertise and Success

The original and abiding attraction to researchers of habitual entrepreneurs is to understand entrepreneurial expertise as a form of human capital. Moreover, following the basic assumption of human capital theory that experience develops expertise, they will exhibit a measurable improvement in venture performance over their career. While researchers recommend the study of successful or expert entrepreneurs (e.g. MacMillan, 1986; Starr and Bygrave, 1991), the definition of success varies from study to study. Definitions include a minimum longevity for each business (Schollhammer, 1991), or the number of discrete spells of venture activity (Baron, 2006, Baron and Ensley, 2006) where repeated spells remove exceptionally lucky cases from the analysis (Baron, 2006; Ucbasaran, Westhead and Wright, 2008). The implicit assumption is that persistence requires expertise and more than just 'luck', although luck is not defined and no examples of 'lucky' cases are given. The bar has been set at a high standard; a repeatedly successful entrepreneur is someone who has founded three or more new ventures without a failure (Baron and Ward, 2004).

For this thesis, career and venture success are defined separately. Career success is defined as persistence. To be included in the study, serial entrepreneurs must be still active as well as having founded at least two firms, and also to have exited and returned at least once. The sample is therefore subject to survivor bias (Wiklund and Shepherd, 2003). Venture success is defined separately at the time of exit and may be positive or negative. Therefore, all the serial entrepreneurs in the study have a minimum experience of start-up and return, and have demonstrated a minimum level of expertise and success in remaining as entrepreneurs, even in the face of venture failure.

3.2 Section 2. Opportunities, Individuals and their Firms

Most calls in the literature are to focus on the individual entrepreneur (e.g. Scott and Rosa, 1996). In this study it is the interplay of the constructs of the opportunity, the entrepreneur, the firm and other resources that are considered to obtain a better understanding of the behaviour of serial entrepreneurs.

3.2.1 Entrepreneurial Opportunities and Habitual Entrepreneurship

An opportunity is simply a situation in which new goods, services, raw materials, and organizing methods can be introduced and sold at prices greater than their cost of production (Casson, 1982). Under the opportunity-based framework of entrepreneurship (Eckhardt and Shane, 2003) habitual entrepreneurship is clearly relevant to understanding how opportunities are discovered, created and exploited, by whom and with what consequences (Venkataraman, 1997; Shane and Venkataraman, 2000). The assumption is that key elements of the opportunity process are different for experienced compared to inexperienced entrepreneurs. There are many studies of how novice and habitual entrepreneurs may vary in their capacity to recognise opportunities (e.g. Ucbasaran, Westhead, Wright, and Binks, 2003; Ucbasaran, Westhead, Wright, 2008) and how serial and portfolio entrepreneurs may differ in their sources and means of exploitation of opportunities (e.g. Rosa, 1998; Iacobucci, 2002).

Once discovered or created, then pursued and exploited, the opportunity disappears as a separate construct embodied within the new venture. The opportunity is exploited through the formation of a firm, and by implication shares the same fate as the firm. However, in practice this is not true. If an opportunity for profit remains underexploited then it has a distinct identity separate from the firm. The opportunity can be replicated by both new start-ups and existing firms. Even if the original firm fails it doesn't automatically follow that the opportunity is economically exhausted. As existing research data shows (e.g. Rosa, 1998) and this thesis also demonstrates, serial

entrepreneurs may re-enter entrepreneurship to reattach themselves to and exploit essentially the same opportunity.

3.2.2 Individual Entrepreneurship and the Firm

The Firm

Ownership and control of resources to pursue and exploit opportunities is typically exercised through the organisational form of the firm. In research practice firms are identified as registered legal entities. Only by forming a firm can individuals learn about their actual entrepreneurial expertise and rent generating ability (Knight, 1921; Lucas, 1978; Jovanovic, 1982). The firm as a separate legal entity from the entrepreneur is just an economic tool. One reason it exists is because it is more economically efficient to use contracts than rely on market prices to organise transactions (Coase, 1937; Williamson, 1981). The firm is a superior mechanism for converting creative insights and heterogeneous inputs into homogenous outputs (Alvarez and Barney, 2001). The firm not only allows entrepreneurs to organise and contract resources that generate rents from an opportunity, but also enables them to appropriate some of the rents thus generated (Alvarez and Barney, 2004). Without the firm it is difficult to measure exit and entry, and so is essential to understanding serial entrepreneurship. Exit from a previous firm is marked through a sale, closure or another legal outcome (Gimeno, Cooper and Woo, 1997; Westhead and Wright, 1998a).

Institutional Effects on Firm Founding

While the organisational form adopted by the entrepreneur may be mainly an economic decision, it is also contingent on the institutional and legal framework (Scott and Rosa, 1996). There can be incentives (e.g. grants, tax breaks and soft loans) for the creation of new legal entities rather than developing a new opportunity within an existing 'novice' run firm. Therefore, there must be cases where there is little difference from the perspective of the process of entrepreneurship between a portfolio entrepreneur diversifying through separate legal entities for legal or tax reasons and a 'novice' entrepreneur diversifying using just one firm. For serial entrepreneurs there may be tax incentives to sell a firm in the form of relief on the proceeds of sale that may incentivise entrepreneurs to diversify through separate firms and incentivise serial entrepreneurs to exit. Therefore, studies of founding and exit behaviour may need to be normalised for changes in the institutional and legal framework.

Theory of Entrepreneurship vs. the Resource-Based Theory of the Firm

In the longstanding theory of entrepreneurship it is the individual entrepreneur who is the central focus (Casson, 2003). In the relatively modern resource-based theory of the firm (Penrose, 1959), firm resources and products are two sides of the same coin and the resource profile for a firm determines the optimal product-market activities (Wernerfelt, 1984). In other words, the range of actionable entrepreneurial opportunities is a function of the firm's resources. The entrepreneur is 'just' another resource whose dynamic capabilities (Teece, Pisano and Shuen, 1997) are available to the firm.

In contrast, it is argued that entrepreneurship should not be viewed as a refinement to the theory of the firm, because entrepreneurs exploit differences of perception about information to their own advantage (Casson, 2005a). Organisational ecology theorists hold similar views. It is the entrepreneur who exercises agency and creates the firm to implement her/his choice of means-ends combination. New organisational forms are created by individuals trying to fashion careers (Hannan, 1988). Firms do not arise spontaneously from opportunities in the absence of human action, but through the organising efforts of individuals (Freeman, 1982). It can be added that neither do firms exit from economic activity without human decision and action unless there is a legal 'firm death'. When arguing from the position of the theory of entrepreneurship, researchers call for a focus on the individual entrepreneur and not the firm (e.g. Scott and Rosa, 1996; Westhead, Ucbasaran and Wright, 2005a; Ucbasaran, Westhead and Wright, 2008). However, this view is not universal and researchers of portfolio entrepreneurship (e.g. Iacobucci, 2002, Iacobucci and Rosa, 2004), while not denying the place of the individual, maintain that portfolio formation is best explained by the evolutionary resource-based theory of the firm (e.g. Nelson and Winter, 1982; Penrose, 1959; Rumelt, 1974).

The Firm as a Temporary Coalition

In portfolio entrepreneurship, representative careers involve a permanent engagement with more than one firm. For serial entrepreneurship the clear separation of the firm and individual is accomplished through the act of firm exit. Firms, especially small enterprises, can be viewed as 'temporary coalitions' of individuals furthering their careers, and the legal entity is no more than a stylised shell obscuring social transactions and relationships (Taylor, 1999). Serial entrepreneurs can be expected to have skills in bringing about and disbanding these coalitions that are different from those of portfolio entrepreneurs. Moreover, individual careers can succeed even if some of their firms fail, and careers can be expected to include both successes and failures (Sarasvathy, Menon, and Kuechle, 2013).

Lead Entrepreneur and Entrepreneurial Teams

The call to separate the individual entrepreneur from the firm is not easy to implement. Ownership and control can be shared within an entrepreneurial team, of whom one team member may be the lead entrepreneur (Rosa, 1998). It may not be a straightforward matter to identify the lead entrepreneur. Rosa detected non-entrepreneurial habitual founders whose success arose from being attached to a partner who was the true driving entrepreneur. In practice, researchers remain flexible as to who is the entrepreneur. For example, (Westhead, Ucbasaran, Wright, 2005a) include the most influential members of surveyed independent businesses.

Entrepreneur as Informant

Gartner and Starr (1993) and Taylor (1999) argue that the whole team should be treated as the informant because specific patterns of interlocked behaviours among individuals influence the creation of an organisation. Similarly, Reuber and Fischer (1999) and Samuelsson and Davidsson (2009) recommend that experience of the management team should be added to that of the entrepreneur, specifically to assess the total human and social capital at the venture's disposal. A limitation of this study is that, with the exception of two cases, the lead entrepreneur was the sole informant.

Serial Entrepreneurs and Employment

While serial entrepreneurship separates the individual and the firm, the literature implicitly assumes that exiting entrepreneurs soon return to start-up the next firm in the sequence. It has been recognised that entrepreneurs intersperse paid employment with entrepreneurship (Dyer, 1994; Folta, Delmar, and Wennberg, 2010). Entrepreneurial activities are intermittent and entrepreneurs do perform non-entrepreneurial tasks as well (Casson, 2003). The reasons for and the impact of gaps and pauses between ventures are not often studied. As this study shows, these gaps include periods of employment. Employment is recognised as significant to the formation of entrepreneurial human capital. Many studies show how employment prior to entrepreneurship incubates opportunities and the assembly of resources (e.g. Cooper, 1985; Shane and Khurana, 2003). Therefore, the impact of periods of employment before starting out on their careers as serial entrepreneurs and between ventures must be considered.

3.3 Chapter Summary

This short chapter has reviewed the literature to position serial entrepreneurship as one of two main sub-types of habitual entrepreneurial behaviour. The unit of analysis has been defined as the

entrepreneurial career of still active serial founder entrepreneurs. The other key constructs of the entrepreneurial opportunity and the firm have also been discussed. While the lack of consistent definitions of key constructs poses challenges to reviewing the relevant literature and positioning new findings, the assumptions of the thesis have been articulated.

Chapter 2 and 3 have introduced the literature and discussed the main constructs. Chapter 4 now develops these foundations to details the principal areas of empirical contribution. The detailed literature review is used to develop the detailed exploratory research questions in Chapter 5.

CHAPTER 4

Habitual Entrepreneurship: Theory and Evidence

Chapters 2 and 3 introduced the main theoretical approaches and constructs of habitual entrepreneurship. This chapter provides further detailed analysis, particularly of the empirical evidence, as the basis for the development of the research questions.

4.1 Section 1. Human Capital and Habitual Entrepreneurship: A Theoretical Framework

4.1.1 Introduction

The very large number of human capital studies in the field of habitual entrepreneurship research address two main research objectives: (1) to determine those characteristics of experience that are associated with successful performance outcomes, and (2) to distinguish between novice and experienced habitual entrepreneurs. Much of what is known about habitual entrepreneurs and their sub-types of serial and portfolio entrepreneurs has been discovered from researchers deploying a human capital perspective.

Serial founders have differential knowledge of opportunity recognition, venture start-up, development, exit and re-entry. Both serial and portfolio entrepreneurs should be comparatively more successful than novices. Indeed, they should perform better than their younger less experienced selves.

One barrier to providing unequivocal evidence of the intuitive relationship between human capital and economic returns to entrepreneurship is that there is no single consistently used definition of either entrepreneurial human capital or performance outcomes. The literature of human capital encompasses a broad range of human qualities. These include prior information, knowledge, experience, cognitive abilities, expertise, skills, talent, dynamic capabilities and motivations. These are matched with a nearly equally wide range of venture performance measures including data from earnings surveys. It would appear that researchers have focussed on variables that are likely to have explanatory power and could be acquired from their data sets.

4.1.2 Human Capital and Habitual Entrepreneurship: A Theoretical Framework

The most significant contribution to our knowledge of habitual entrepreneurship comes from Ucbasaran, Westhead, Wright and their many collaborators. Both Schollhammer (1991) and

Ucbasaran, Westhead, Wright (2006) propose a human capital based model of habitual entrepreneurship with three components: 1) the individual inputs 2) the entrepreneurial process and 3) the outcomes.

The model and its relationship to the literature is summarised in the following diagram.

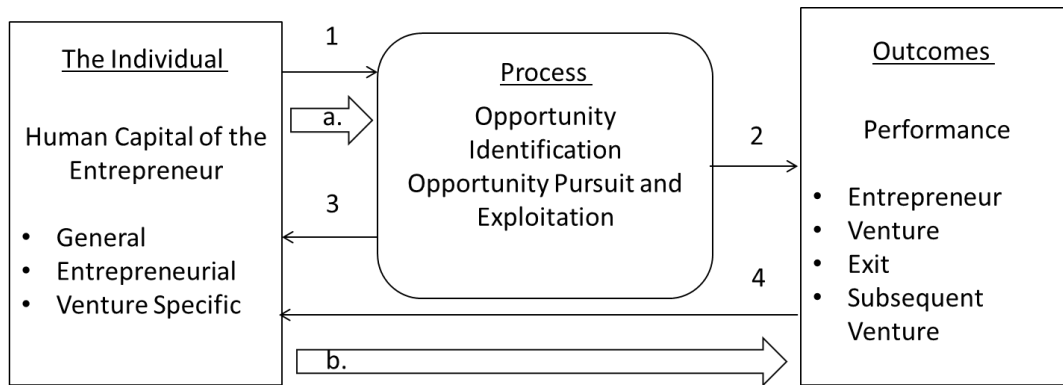


Figure 4.1 Human Capital Framework for Understanding Entrepreneurship

Based on Ucbasaran, Westhead and Wright (2006) p.18

The framework shows the paths of influence of human capital on:

1. Ability to recognise and exploit opportunities
2. Outcomes
3. Feedback and experience from the process
4. Feedback and experience from outcome e.g. exit and subsequent venture.

The authors of the framework have made studies measuring the differential effects of the relative experience of portfolio, serial and novice entrepreneurs on both the process and outcomes of entrepreneurship.

Arrow a. indicates that a significant number of studies have been carried out in respect of path 1. These and similar or complementary studies are reviewed in this chapter in section 1.

Arrow b. represents the large number of human capital and performance studies that have been conducted. Most were made independently of this model with emphasis on other factors outside the opportunity process, measuring the association of human capital with performance directly using quantitative methods. These and similar or complementary studies are considered in section 2.

This thesis provides a better understanding of the complete cycle. It includes the starting position of each serial founder, the process they undertook, and how the outcome of one venture provides feedback into the next iteration of the process.

Human Capital Theory

In this framework, human capital follows Becker (1964; 1993) and Castinas and Helfat's (1992; 2001) theory of managerial rents. Entrepreneurs are a type of managerial labour who possess specific types of human capital such as start-up experience. These inputs affect the nature and course of Shane and Venkataraman's (2000) opportunity centric process of entrepreneurship. As the distribution of income from employment is correlated with human capital (Becker, 1964), so entrepreneurs with the right quality and quantity of human capital should earn greater returns from entrepreneurship.

The detailed review of the literature follows this framework in synthesising and extracting what can be learned about the process of habitual entrepreneurship.

Entrepreneurial Human Capital

Entrepreneurial human capital is knowledge and skills that assist in successfully engaging in the entrepreneurial process (Unger, Rauch, Frese and Rosenbusch, 2011). Therefore, returns to entrepreneurial human capital are realised by the recognition, pursuit and exploitation of opportunities. Entrepreneurs achieve higher returns if they find or create suitable opportunities that match their skills. Persons learn about their ability to generate entrepreneurial rents by starting a venture (Jovanovic, 1982), and in equilibrium habitual entrepreneurs match their ability to suitable opportunities (Lucas, 1978; Holmes and Schmitz, 1990; 1995). In turn, entrepreneurial ability is the limiting factor for firm development (Penrose, 1959). Overall, we should observe habitual entrepreneurs seeking to increase their utility by selecting opportunities that match their human capabilities, including, or moderated by, their personal motivations and objectives.

Path Dependence of Human Capital

Human capital accrues over time and spills-over from one venture to the next (MacMillan, 1986), and is therefore an antecedent of both present and future states (Reuber and Fischer, 1999). Previous experience leads to more knowledgeable decisions and actions to pursue higher potential opportunities and enhance firm performance (Eesley and Roberts, 2012; Shane and Delmar, 2006; Shane and Venkataraman, 2000). Human capital includes cognitive human information processing

capacity, which is a limiting factor as all activities are cognitively dependent. For example, the type of opportunity recognised is limited by knowledge corridors (Venkataraman, 1997).

4.2 Section 2: Human Capital and the Entrepreneurial Process: Prior to Founding

In this section of the literature review the focus shifts to research on the role of entrepreneurial human capital in the activities prior to venture creation, including background factors and different pathways for the different types of habitual entrepreneur. Researchers are interested in determining if there is an association between human capital in the form of prior knowledge and opportunity recognition.

4.2.1 The Start of the Journey

Habitual entrepreneurs start accumulating entrepreneurial human capital earlier in life than novice founders (Birley and Westhead, 1993; Kolvereid and Bullvåg, 1993). Serial founders are more likely to have worked in a small company compared with portfolio and novice entrepreneurs (Westhead and Wright, 1998a). Similarly, entrepreneurs are more likely to start another venture if their first venture was started when younger, not married, and they funded their first company with venture capital (Eesley and Roberts, 2006). Building on Schein (1978; 1985), Katz (1994) suggests that serial entrepreneurs are independence seeking with an autonomy career anchor, while portfolio entrepreneurs are more likely to be motivated by wealth creation.

4.2.2 Human Capital and Opportunity Identification

Human capital is formed through learning, in particular the development of templates and heuristics, which together form the information capture, storage and processing capabilities of enterprising individuals (Baron and Ensley, 2006). Prior knowledge is often used in the literature as a shorthand term for human capital, and the literature positions prior knowledge as the dominant causal component in the determination of opportunity recognition, pursuit and exploitation (e.g. Shane, 2000). The term emphasises the ex-ante stock aspect of human capital, although its cognitive element must include a dynamic, situation specific and also a reflective capability to re-construct and revalue stocks of knowledge.

Prior knowledge is shown to be strongly associated by entrepreneurs with all stages of opportunity discovery and decision (Tang, Kacmar and Busenitz, 2010). Prior knowledge increases creativity (Amabile, 1997) and the number, quality and innovativeness of opportunities (Fiet, 2002; Shepherd and DeTienne, 2005). Specific technology knowledge corridors facilitate links to more radical and innovative concepts (Chandler, Douglas and DeTienne, 2005). In experimental data, an

entrepreneur's preference for using prior knowledge is stronger than the desire to achieve financial gain (Shepherd and DeTienna, 2005).

Experience based knowledge generates additional opportunities that are ignored or not recognised by the novice (Gaglio, 1997). Prior knowledge is the source of most discoveries (Shane, 2000, Venkataraman, 1997) because prior knowledge gives entrepreneurs an advantage in both the axioms of information processing; better access to information and the ability to process (construe) it (Shane and Venkataraman, 2000). The most important determinant of the innovativeness of an idea is specificity of prior knowledge, where prior knowledge is likely to include specific and also private information directly relevant to an opportunity (Casson, 1982; Fiet, 2002).

Shane (2000), in experimental data, shows that in every case of opportunities stimulated by a new technology (3D printing) the opportunity was related to prior knowledge. In similar experiments, prior knowledge of markets allowed deeper thinking and the recognition of non-obvious valuable opportunities (Grégoire, Barr and Shepherd, 2010). The greater their knowledge of natural and communal environments (Patzelt and Shepherd, 2011), the more likely entrepreneurs are to discover sustainable development opportunities. Other factors are also important; Gruber (2010) finds that the number of alternative options considered is positively related to breadth of experience, the founder's level of aspiration, and to a degree their financial resources.

Prior knowledge not only determines what opportunities are perceived, it also determines the entrepreneurial process through which opportunities are identified and brought to market. Men and women use unique stocks of human capital and exhibit different processes of opportunity identification (DeTienne and Chandler, 2007). Venkataraman and Sarasavathy (2001) proposed three processes: recognition, discovery and creation. Chandler, Douglas and DeTienne (2005) empirically isolated three broad typologies: replication, innovation and acquisition. Both models can be combined to model the opportunity recognition process as follows:

(1) Acquisition. Acquiring an existing income stream. Recognise and Acquire.

(2) Replication. Recognising and learning about market need and replicating an existing product. Recognise and Replicate.

(3) Innovation. Learning about market need and discovering or creating an innovative product to meet this need. Discover and Create.

(4) Innovation and Education. Creating an innovative product first and then educating customers to its benefits or find a matching need. Create both a new product and a new demand.

Prior Knowledge and Innovation

However, for researchers interested in entrepreneurial innovation, there is a limit to the number of new ideas that can be created using the same set of knowledge elements. Search is most productive when it uses both familiar and unfamiliar elements (Katila and Ahuja, 2002). Individuals working within an existing industry and technology paradigm are likely to make incremental discoveries, whereas truly radical changes are likely to come from outside the paradigm (Chandler, Douglas and DeTienne, 2005). Prior knowledge strengthens the tendency to concentrate efforts in specific domains (Ronstadt, 1988), to search using known information channels (Fiet, 1996) and form idiosyncratic 'knowledge corridors' (Venkataraman, 1997). Thus prior knowledge as a resource is strongly path dependent (Alvarez and Barney, 2007). Empirical evidence shows that when distant (i.e. potentially path-breaking) knowledge is offered, the founder's pre-existing technological abilities limits the knowledge that can be assimilated and exploited (Gruber, MacMillan, Thompson, 2013).

The literature makes specific observations about the role of prior knowledge in habitual entrepreneurship. Wider and deeper prior knowledge of venturing seems to be an advantage. Using their prior knowledge serial entrepreneurs generate a wide 'choice set' of alternative market opportunities before deciding which one to pursue (Gruber, MacMillan and Thompson, 2008). Habitual entrepreneurs with higher levels of human capital identify more opportunities than novices (Ucbasaran, Westhead, Wright and Binks, 2003; Ucbasaran, Westhead and Wright, 2008). Habitual entrepreneurs identified and exploited more innovative opportunities with greater wealth creation potential (Ucbasaran, Westhead and Wright, 2009). It could be that successful habitual entrepreneurs have accumulated liquidity in the form of financial resources that incentivise them to be more alert to opportunities (Ucbasaran, Wright, Westhead and Busenitz, 2003), and also presumably search more, and be more open to opportunities when offered to them.

4.2.3 Portfolio vs. Serial Entrepreneurship: Resource Endowments

Portfolio entrepreneurs are characterised as the more successful form of entrepreneurship. Portfolio entrepreneurs are different from serials and novices in that they identify more opportunities and plan more businesses (Westhead, Ucbasaran and Wright, 2005b; Westhead, Ucbasaran, and Wright, 2009) and are more creative (Westhead, Ucbasaran and Wright, 2005a). Recent evidence of entrepreneurs in developing countries shows that portfolio entrepreneurs are much more likely to engage in exporting than serial entrepreneurs and to have pursued and exploited innovative opportunities (Robson, Akuetteh, Westhead and Wright, 2012a; 2012b).

From a number of empirical studies, a potential reason for performance differences is that managing and owning a portfolio of ventures appears to lead to strongly path dependent or corridor specific decisions in respect of new opportunities that result in related diversifications. The combination of prior knowledge and the presence of significant existing firm controlled resources at hand, exerts a strong effect on which opportunities are both recognised and implemented. Alsos, Ljunggren and Pettersen (2003) found that farmer entrepreneurs in Norway were more likely to start-up ventures based on opportunities related to their daily activities. Similarly, for Finnish farmers, Alsos and Kaikkonen (2004) show that discovered opportunities are strongly related to existing resources and existing social networks. These related opportunities are much more likely to be pursued. Prior knowledge does seem to be the dominant causal component of entrepreneurial human capital in the determination of opportunity recognition, pursuit and exploitation. Even unrelated subjectively constructed opportunities that could replace the main farm business were often related to prior knowledge gained before entering farming (Alsos and Kaikkonen, 2004).

4.2.4 Opportunity Discovery Processes: Alertness vs. Search

Alsos and Kaikkonen's (2004) study is unique in its consideration of the objective discovery vs. subjective construction of opportunities by habitual entrepreneurs. Other research examines the competing opportunity discovery processes of alertness (Kirzner, 1973) and search (Fiet, 1996). One study of habitual entrepreneurs reports spontaneity, alertness and higher levels of innovativeness (Ucbasaran, Westhead, Wright and Binks, 2003). In another study the use of proactive (deliberate) and reactive (serendipitous) recognition routines are triggered by different circumstances, which vary from venture to venture (Ucbasaran, Westhead and Wright, 2003).

However, other studies reveal differences between serial and portfolio entrepreneurs. Portfolio entrepreneurs are opportunistic and are orientated toward growth strategies (Rosa, 1998). The portfolios of Scottish entrepreneurs arise naturally and serendipitously rather than through any artificial search process or orthodox corporate management principles (Rosa, 1998). Similarly, portfolio entrepreneurs are more alert and opportunistic (Westhead, Ucbasaran, Wright, 2005b).

In the literature, serials appear to conform to the less opportunistic customer or product orientated craftsperson (Woo, Cooper, Dunkelberg, 1991; Smith, 1967), such that serial entrepreneurs are more likely to have key strengths in a technical or functional area. Furthermore, their business idea is their own and is less likely to be developed in an incubator (Westhead, Ucbasaran, Wright, and Binks, 2005). Serial entrepreneurs more often say that opportunities are connected to solutions for

specific problems; they identify goods and services that people want by perceiving unmet customer needs (Westhead, Ucbasaran and Wright, 2005b; Westhead, Ucbasaran, Wright, and Binks, 2005).

Opportunities and Information Search

Opportunity discovery through information search has been the subject of a number of studies. Higher levels of information search intensity lead to more business opportunities (Ucbasaran, Westhead and Wright 2006; Ucbasaran, Westhead and Wright, 2008; Westhead, Ucbasaran and Wright, 2009). However, there is contradictory evidence regarding novices and habitual entrepreneurs in terms of information search intensity.

The inexperienced are expected to search less intensely, lacking capacity (Cooper, Folta and Woo 1995; Woo, Folta and Cooper, 1992). However, it was found that the less experienced entrepreneurs engaged in significantly greater search, especially using personal sources in domains that they knew. Re-visiting this subject, only this time postulating that habitual entrepreneurs with their superior knowledge, contacts and cognitive abilities are expected to search less, Westhead, Ucbasaran, Wright, and Binks (2005) actually found no difference in search intensity.

The frequency of opportunity identification is associated with the use of personal sources of information (Ucbasaran, Westhead and Wright, 2009). Portfolio entrepreneurs appear to avoid external professional information sources (Westhead, Ucbasaran, Wright and Binks, 2005). Serial and portfolio entrepreneurs who use employees, consultants and financiers have an advantage in information sources over novices (Ucbasaran, Westhead, Wright and Busenitz, 2003). The information proffered by these sources is most likely related to existing ventures and may reinforce any tendency to keep to existing paths and corridors and start-up closely related businesses.

4.2.5 Initial Conditions and Entrepreneurial Career Paths

Serial Acquirers vs. Serial Founder Entrepreneurs

Research also finds some important differences between the sub-types of habitual entrepreneur in terms of the source and type of opportunities they encounter. For serial acquirers with experience of Management Buy Outs (MBOs), Management Buy-ins (MBIs), acquisitions and other types of structured deals, prior success raises their profile. This encourages intermediaries to present similar deals (Ucbasaran, Westhead and Wright, 2003; Wright, Robbie and Ennew, 1997b).

Serial founders are more likely to use industry specific knowledge to identify and exploit opportunities (Ucbasaran, Wright, and Westhead, 2003). In contrast, serial acquirers are more likely

to: a) use teams to identify and exploit opportunities, b) emphasise the use of networks, c) use formal planning techniques, and d) come from managerial positions via MBO/MBIs to venturing (Ucbasaran, Wright, and Westhead, 2003).

Serial vs. Portfolio Entrepreneurs

The initial experience and other resource positions (i.e. real options) of individuals entering entrepreneurship may engender corridor and path effects that have a lasting effect on their career path. Habitual founders and acquirers tend to keep to the pathway set by the experience of their first venture, such as, using the same mode of entry for subsequent ventures.

Formative experiences may also have a long term impact on career trajectories. Self-employed fathers are associated with entrepreneurial sons and daughters (Burke, Fitzroy and Nolan, 2008). A smaller proportion of serial compared with portfolio entrepreneurs report that they had parents with prior business ownership experience (Westhead, Ucbasaran, Wright and Binks, 2005). Informal human capital is acquired through familiarity with a parent's business (Cooper and Dunkelberg, 1986), and there is a relationship between working in a family business and subsequent success, particularly for adolescent entrepreneurs (Fairlie and Robb, 2007; Robinson, 2009). Serial entrepreneurs may be at a disadvantage because they have less access to role models, mentoring, social networks and financial resources (Westhead, Ucbasaran, Wright and Binks, 2005).

Opportunity Evaluation and Decision

The seasoned entrepreneur with specific entrepreneurial human capital faces less uncertainty surrounding the value to be gained from exploiting an opportunity and the nature of the task in front of them (Baron and Ensley, 2006; Shane and Khurana, 2003; Starr and Bygrave, 1991). Specific knowledge and experience is more important than general human capital for opportunity identification and opportunity pursuit (Ucbasaran, Westhead and Wright, 2008). Habitual entrepreneurs can more accurately assess the value of new opportunities (Ucbasaran, Wright, Westhead and Busenitz, 2003). There is evidence from cognitive studies (Baron and Ensley, 2006) and in particular the extensive research of portfolio entrepreneurs who own and manage clusters of businesses (e.g. Carter, 1998; Iacobucci and Rosa, 2005; Rosa, 1998) that shows that experienced entrepreneurs focus on considerations of how to exploit an opportunity during the evaluation stage.

Overall, even strong teams of entrepreneurs will not always choose the best markets. Founding entrepreneurs typically choose markets they know due to their idiosyncratic path of knowledge experience (Eisenhardt, 2013; Gruber, MacMillan and Thompson, 2013). In addition, the available resources to hand have a strong effect on opportunities considered and subsequently pursued.

4.2.6 Summary

Human capital most often expressed as prior experience has a strong causal effect on opportunity recognition. Furthermore, there is also evidence that all aspects of the entrepreneurial process are driven by prior knowledge. For portfolio entrepreneurs other resources on hand also strongly influence the entrepreneurial process, forming corridors of related ventures. While the evidence shows that the prior experience of habituals makes them more innovative, their potential, particularly that of portfolio entrepreneurs, to move to new corridors of opportunity appears limited.

Serial entrepreneurs are more solution orientated, but may lack family role models to teach them entrepreneurial skills and mentor them in the early phases of their careers. Portfolio entrepreneurs are more likely to be opportunistic and to rely on alert serendipitous opportunity recognition. In contrast to economic selection theory, portfolios are considered more economically successful than serials, growing their portfolios through related diversifications that leverage existing resources. An alternative view offered here is that related opportunities are cognitively easier and less costly to discover, and therefore 'feel' serendipitous.

4.3 Section 3. Human Capital and the Entrepreneurial Process: Founding and Exploitation

In this section of the literature review the focus shifts to research on the role of entrepreneurial human capital in the activities of venture creation and development. Researchers seek a positive association between human capital and venture performance, i.e. returns to entrepreneurial human capital. However, as predicted by Starr and Bygrave (1991) in their assets and liabilities theory of habitual entrepreneurship, clear and consistent evidence has proved elusive.

4.3.1 Start-up/Founding Experience

Serial entrepreneurs have more experience of founding new businesses 'from scratch' without parallel businesses to aid or impede their progress. Start-up experience is the first resource to express itself in new venture creation and assists in the acquisition of other types of resources in the crucial first stage (Davidsson and Honig, 2003; Starr and Bygrave, 1992; West and Noel, 2009). Start-up experience provides repeat founders cost and speed advantages in founding an independent business. It is easier to start a business the second time in regard to making the decision psychologically and in knowing what to do in launching a new firm (Lamont, 1972). The number of previous start-ups is a very specific form of entrepreneurial human capital (Stuart and Abetti, 1990),

and cannot be acquired easily by other means (Carroll and Mosakowski, 1987). Adolescent experience in entrepreneurial families could be one alternative source.

Founding Experience and Resource Organisation

Human capital is important as it can partially compensate for a lack of financial capital which constrains many start-ups (Chandler and Hanks, 1998). The more experience a habitual entrepreneur has in participating in entrepreneurial projects, the more skills she/he has in accessing resources (Reuber and Fischer, 1999). Start-up experience helps the firm to prioritise strategic issues such as building supportive relationships and gaining a competitive advantage (Lerner and Haber, 2001). Experienced firm founders will have previously encountered the problems associated with finding financial capital, developing a new product, establishing contacts with potential customers, and attracting and hiring employees (Aldrich and Reuf, 2006; Brüderl, Preisendörfer and Ziegler, 1992). Experienced firm founders become more aware of the risks associated with new business creation and rates of new business success and failure (Cassar, 2014; Hayward, Shepherd and Griffin, 2006). Founding experience increases the ability to judge the relevance of information (Cooper, Folta and Woo, 1995) and increases the predictability of key variables such as customer demand and the impact of technology (Helfat and Lieberman, 2002).

Human and Social Capital in the Start-Up Phase

Human capital and social capital combine during the start-up phase. Case study evidence from Brush, Greene and Hart (2001) reveals that initial human and social capital is leveraged to assemble other resources that enable the start-up. Strong relationships make it easier to obtain resources from the same party a second time around (Aldrich and Reuf, 2006; Aldrich and Zimmer, 1986). Even weak or indirect ties become useful when the repeat entrepreneur starts another business (Shane and Cable, 2002). Experience and success generate a particular form of social currency - legitimacy. While there is evidence that some habitual entrepreneurs become risk averse because they are not willing to risk their reputation (Wright, Robbie and Ennew, 1997a), legitimacy can be used to convince others to reallocate resources in new ways that run counter to existing norms (Shane and Khurana, 2003). Mason and Harrison's (2006) qualitative study found a process they describe as 'entrepreneurial recycling'. By staying in the same industry and location, habitual entrepreneurs were able to recycle resources including opportunities, technology, work colleagues, employees, brands, contacts and reputation.

Social Capital and Financial Resources in the Start-Up Phase

The venture capital literature informs us that many venture capitalists heavily weigh prior experience (Hsu, Haynie, Simmons and McKelvie, 2014). Habitual entrepreneurs receive funding through direct social ties more often than less experienced entrepreneurs, increasing the likelihood and the amount, and reducing the time to obtain funding (Hsu, 2007, Shane and Khurana, 2003; Zhang, 2011). However, this advantage may not accrue to serial entrepreneurs because serials are distinguished by their preference for personal savings to fund start-ups. Two-thirds of serial entrepreneurs did not even use bank loans as part of their initial capital (Westhead, Ucbasaran, Wright and Binks, 2005) and furthermore, serial entrepreneurs are less likely to use external funding in subsequent ventures (Wright, Robbie and Ennew, 1997b). The preference for their own resources becomes a disadvantage and may become self-reinforcing. Entrepreneurs with venture-backed founding experience tend to raise more venture capital at an early round. In contrast, experienced founders whose earlier firms were not venture-backed do not show a similar advantage over novice entrepreneurs (Zhang, 2011). Overall, the evidence suggests that the ventures, and by extension the careers, of serials are under capitalised. Nevertheless, once established, serials can use funds received on successfully exiting from their last venture to fund the next (Westhead and Wright, 1998b). The reasons for this preference and cause and effect are not fully understood. Capitalisation is sub-optimal; however it could be that serial founders are drawn to opportunities that are easier and quicker to start.

Start-Up Efficiency

Experienced entrepreneurs can reuse operational routines developed in a previous venture in the next (Easley and Roberts, 2013), and will execute gestation activities quickly and cost effectively (Newbert, 2005). However, serial entrepreneurs are not very different from novices in the type and speed of start-up activity. Parallel (portfolio) founders are more organised and more likely to actually start a business and not give up in the first year (Alsos and Kolvereid, 1998). A Swedish study finds that human and social capital factors known to improve entrepreneurial performance are both significantly associated with portfolio entrepreneurship (Wiklund and Shepherd, 2008). Politis (2008) finds counter intuitively only marginal differences in coping with the liabilities of newness between novice and habitual entrepreneurs. This suggests that larger cost and efficiency gains from start-up experience accrue to parallel starters, a finding compatible with the evidence of related diversifications. Indeed portfolio entrepreneurs may have a type of firm-specific managerial capital as defined by Castanias and Helfat (2001) that arises from starting related or similar firms. Compared to serials, portfolio entrepreneurs alone enjoy economies of scope and also perhaps scale and other synergies when founding related extensions to an existing portfolio.

4.3.2 Business Ownership and Entrepreneurial Experience

Prior business ownership experience (Gimeno, Folta, Cooper and Woo, 1997), though less specific than start-up experience is synonymous with entrepreneurship (Shepherd, and DeTienne, 2005). It is indicative of a significant role and high involvement in the management of entrepreneurial ventures. Ownership experience is associated with enhanced reputation and broader social and business networks (Starr and Bygrave, 1992, Shane and Khurana, 2003, Ucbasaran, Wright and Westhead, 2003). Ownership experience can be leveraged to identify and pursue new business opportunities and to innovate new productive resource combinations (McGrath, 1996; Ronstadt, 1988; Parker, 2006). If previous owned ventures are viewed as intense experiential learning experiences, then the experience can be sobering (Arabsheibani, de Meza, Maloney and Pearson, 2000) and may temper an entrepreneur's tendency for over or under optimism (Hmieleski and Baron, 2009). Also having owned a business prior to the start-up increases the likelihood of firm survival (Headd, 2003).

An influential study by Stuart and Abetti (1990) found that entrepreneurial experience is the only factor that explains variations in venture performance. Entrepreneurial experience is a composite measure of involvement in previous ventures made up of: the number of ventures started, the number of successful ventures, and the role played in such ventures (Stuart and Abetti, 1990). However, in keeping with a very mixed picture from studies measuring the relationship between human capital and performance, Cressy (1996), Gimeno, Folta, Cooper and Woo, (1997) and Bruderl, Preisendorfer and Ziegler (1992) find no significant effect of prior entrepreneurial experience on firm survival. The impact of entrepreneurial experience may be affected by contextual or situational factors, for example Stuart and Abetti's study was of new technical ventures clustered in the same region of the US. The review of later longitudinal research shows that being in a particular industry and/or starting successive firms in the same industry may magnify the spill-over effects of contextual and task similarity (Chandler, 1996) from relevant experience.

4.3.3 Industry Experience

Of Castanias and Helfat's (2001) four factors of managerial human capital, two arise from industry experience. An industry is a group of firms producing products that are close substitutes or complementary goods (Porter, 1980). Industry experience indicates context specific entrepreneurial human capital (Chandler, 1996; Delmar and Shane, 2006; Eesley and Roberts, 2013; Klepper, 2001).

Many of the skills and much of the information necessary to effectively exploit an opportunity can only be learned through industry experience (Delmar and Shane, 2006). Industry, environment and task similarities reduce the requirement for new knowledge acquisition (Chandler, 1996; Gartner

and Starr, 1999; Unger, Rauch, Frese and Rosenbusch, 2011). Reputation and also social ties to suppliers, distributors and customers are often industry specific. When a subsequent venture is in the same industry, social capital ties can be more easily and quickly transferred (Aldrich and Reuf, 2006; Delmar and Shane, 2006).

Pre-entry knowledge of the industry provides specific and often tacit (uncodified) information concerning the competitive landscape. These include a host of key information elements, such as: profitable niches, customer preferences, supply chain issues, employment practices, and industry rules and norms (Brush, Greene and Hart, 2001; Chandler and Jansen, 1992; Dencker, Gruber and Shah, 2009); market prices, resource costs, the value chain, the profitability of various market segments (Bruderl, Preisendorfer and Ziegler 1992; Dimov, 2010; Landier and Thesmar, 2009); and production processes, market niches, and technological developments (Delmar and Shane, 2006). Specific industry experience enables entrepreneurs to know which tangible and intangible resources a venture will require to succeed and build strong core competencies and competitive advantage (Haynes, 2003). With industry knowledge of markets, ways to serve markets and solutions to customer problems, the entrepreneur is equipped to better recognise and evaluate opportunities (Shane, 2000). Specificity increases the effect of inherited prior knowledge. The greater the industry knowledge the more sophisticated are the opportunities that are recognised (Grégoire, Barr and Shepherd, 2010). Within industry innovation may not be constrained by following an industry corridor.

Industry experience is likely to explain differences in behaviour between sub-types of entrepreneur. As habitual acquirers deal with established businesses with a track record they have less unknowns and are more likely to move into unrelated businesses than habitual starters (Ucbasaran, Wright and Westhead, 2003). Serial starters and portfolio builders, then, by corollary, are more likely to stay in the same industry.

Industry and Resource Profile

From the perspective of the resource-based theory of the firm, firms only enter industries for which they have suitable resources (Helfat and Lieberman, 2002). Furthermore, pre-entry knowledge of the business activity and pre-entry management experience moderate the firm's ability to adapt to prevailing conditions in an industry (Dencker, Gruber, and Shah, 2009). For example, prior industry experience is associated with making more accurate pre-entry forecasts particularly in high-technology industries (Cassar, 2014). Pre-entry industry knowledge has a positive effect on firm survival (Bruderl, Preisendorfer and Ziegler, 1992; Gimeno, Folta, Cooper and Woo, 1997; Delmar

and Shane, 2006). From a small sample of venture capital (VC) backed ventures Sandberg and Hofer (1987) find that experience only impacts performance when gained in a similar industry.

There is plenty of evidence from industry studies that show that new firms with pre-entry experience in related fields survive longer, such as in the digital imaging, automobile (Klepper, 2002), television receiver (Klepper and Simons, 2000), and ship building (Thompson, 2005) industries. Incubated employee spin-outs survive longer than even established diversifying entrants in disk-drive industries (Agarwal, Echambadi, Franco, and Sarkar, 2004; Franco and Filson, 2006), and medical device companies perform better than other start-ups in the same industry (Chatterji, 2005). Spin-outs have a survival edge over other entrants because of the combination of relevant knowledge and entrepreneurial flexibility in the founder (Agarwal, Echambadi, Franco and Sarkar, 2004). Indeed the general evidence that industry experience is converted into differential venture performance is also true for serial entrepreneurs.

Serial Entrepreneurs and Industry Experience

There is some qualified evidence from human capital vs. performance studies that serial entrepreneurs benefit from staying in the same industry. In a German single industry survey of serial entrepreneurs by Kirschenhofer and Lechner (2012) there is a positive relationship between the number of prior ventures in the industry and performance. The experience of US serial self-employed and small business owners is more valuable if gained in closely related sectors (Chen, 2013). However, this survey is subject to the qualifications concerning the representativeness of self-employment data. Swedish serial (more accurately habitual) entrepreneurs with ventures in knowledge intensive industries have a higher performance when there is a high level of contextual (industry, location and time) similarity between prior and current ventures (Toft-Kehler, Wennberg and Kim, 2014). For US Massachusetts Institute of Technology (MIT) alumni, (44% of the sample are habitual entrepreneurs), experience is more significant for outcomes if a venture operates in a familiar market or technology (Eesley and Roberts, 2012).

Other studies with lower samples of habitual entrepreneurs such as West and Noel's (2009) study of high technology CEOs (20% serial founders) find no relationship between new venture performance and industry knowledge. However, elsewhere the same study does find a relationship between performance and business relatedness (similar products, services, or overall approach). In contrast to Chen's study, Parker's (2013) survey of US serial self-employed shows returns are largely invariant to being in the same industry. However, self-employment data may not be representative of the behaviour of serial founders.

Overall, in a field of study where performance as the dependent variable is not consistently associated with measures of individual human capital, the literature on specific industry experience shows a relatively compelling picture of the advantage to habitual entrepreneurs of making start-ups in the same industry.

However, only two studies of habitual entrepreneurs measure industry specialisation: Chen (2013) and Schollhammer (1991). They find that 57% and 80% of new businesses, respectively, are started in the same industry as a previous venture. While Schollhammer's early and regional specific study is unlikely to be representative of all habitual entrepreneurship, we would expect corridor and path dependent effects of prior knowledge and other resource positions to constrain an entrepreneur's options to the same industry. As recent studies point to increased returns to industry specific human capital, then if success does indeed breed success, then successful habitual entrepreneurs will be observed staying in the same industry. If only the data presented was of sufficient granularity to distinguish between portfolio and serial entrepreneurs.

Technology

Some researchers believe that the benefit of experience may be greater when entrepreneurial decision making takes place in an intrinsically uncertain environment such as a venture employing new technology, or in high tech industries (Aldrich and Foi, 1994; Eisenhardt and Martin, 2000) where businesses are evaluated with limited information (Shane and Stuart, 2002). High technology entrepreneurs view themselves as 'insiders' due to previous experience in the industry that creates barriers to entry and exit (Stuart and Abetti, 1990). However, Unger, Rauch, Frese and Rosenbusch's (2011) extensive review of studies finds no consistent evidence for this. It could be that in moderate levels of technological novelty prior experience is very helpful. However, after significant technological change it is a disadvantage (Eesley and Roberts, 2006).

Other Sources of Entrepreneurial Human Capital

Other studies measure the effect of less specific forms of entrepreneurial human capital on firm performance. While presenting an inconsistent empirical picture, these general forms of human capital, may, in fact, complement and magnify specific forms of entrepreneurial human capital.

4.3.4 Employment Experience

Employment experience is a precursor to becoming an entrepreneur (Bates, 1990; Gimeno, Folta, Cooper and Woo, 1997). Work experience in particular functions such as marketing and finance develops entrepreneurs' operational knowledge (Vesper, 1980) and increases their productivity

(Parker, 2006). Relevant work experience can assist in the integration and accumulation of new knowledge and thereby enable individuals to adapt to new situations (Davidsson and Honig, 2003).

Employment experience in the same or a related industry is a specific and potentially more valuable form of human capital. Pre-founding knowledge can be easily transferred if founders have work experience in the same industry or domains of the new start-ups (Oe and Mitsuhashi, 2013).

Employment in an industry provides substantial uncodified information (Delmar and Shane, 2006), and knowledge learned and social relationships forged in prior employment influence the strategies of newly founded firms (Shane and Khurana, 2003).

General labour market experience, industry experience, and previous business experience together are critical in new venture start-ups (Parker and Van Praag, 2012). However, it is work experience in the same industry as the start-up that increases business longevity (Cressy, 1996; Bruderl, Preisendorfer and Ziegler, 1992; Cooper, Gimeno-Gascon and Woo, 1994). Similarly, new firms achieve break-even faster when their founders have had work experience in the same industry (Oe and Mitsuhashi, 2013).

Employment Experience and Incubation

Nascent entrepreneurs are incubated in the organisations where they worked before starting their business (Cooper, 1985). Lamont (1972) showed that future habitual entrepreneurs in Palo Alto get started by 'spinning out' and commercialising the technology transferred from previous employers. In addition, some entrepreneurs used their experience to change position in the value chain from self-employed contract engineer to producing their own product. Two-thirds of growth orientated firms featured in a magazine, (75% high technology businesses), were in a similar business to their incubators (Cooper, 1985). In all five case studies of Scottish technology entrepreneurs by Mason and Harrison (2006), the entrepreneurs started businesses in the same sector as their former employer. This pattern is repeated in cross industry studies. Start-ups (as opposed to acquisitions) are most similar to the incubator in terms of customers and products. Similarity was highest where members of the entrepreneurial team were former employees (Cooper and Dunkelberg, 1986). Some serial entrepreneur's initial novice ventures are likely to be incubated in employment. The incubation process may provide a template for the development of subsequent start-ups.

4.3.5 Management Experience

Pre-entry management experience indicates that founders had worked in a managerial capacity before they started their new firm (Bates, 1990). Pre-entry management experience provides a

variety of useful skills, greater functional knowledge and social skills in dealing with people and external actors. Management experience supports the entrepreneur's coordination role to effectively identify and allocate scarce resources (Chandler and Jansen, 1992).

Managerial talent can be taken as synonymous with entrepreneurial talent (e.g. Lucas, 1978). Nevertheless, in practice it may be difficult to separate management experience from entrepreneurial experience (Stuart and Abetti, 1991). Evans and Leighton (1989) find positive effects while other studies; Bates (1990), Stuart and Abetti (1991), and Gimeno, Folta, Cooper and Woo (1997) cannot find significant effects. Other commentators think that overall managerial experience may be more valuable to serial acquirers because existing ventures typically employ others whereas serial start-ups do not (Parker and Van Praag, 2012; Robbie and Wright, 1996).

4.3.6 General Human Capital

General human capital serves as a proxy for both intellectual capacity and flexibility. General human capital is typically operationalised as education (Rauch and Frese, 2000). Formal education may assist in the accumulation of explicit knowledge and skills useful to entrepreneurs (Davidsson and Honig, 2003; Cooper, Gimeno-Gascon and Woo, 1994). Entrepreneurs with university degrees have generally had their expectations and information processing and problem-solving skills raised (Robson, Akuetteh, Westhead and Wright, 2012b) and are better able to deal with complex problems (Ucbasaran, Westhead and Wright, 2008).

Entrepreneurs who start companies earlier in their careers do better than those who had sought further education first (Stuart and Abetti, 1990). Educational background positively impacts opportunity identification (Ucbasaran, Lockett, Wright and Westhead, 2003). It generates a wider range of opportunities. However, it is not associated with pursuit (Arenius and DeClercq, 2005; Davidsson and Honig, 2003; Ucbasaran, Westhead and Wright, 2008). Education may have no impact on who becomes an entrepreneur, nevertheless, the effect on performance is positive and significant (Van Der Sluis, Van Praag and Vijverberg, 2008).

In respect of habitual entrepreneurs the evidence provides a mixed picture. Educated entrepreneurs are more likely to become serial entrepreneurs (Kolvereid and Bullvåg, 1993). In contrast, in another study they are more likely to become portfolio entrepreneurs (Wiklund and Shepherd, 2008). General human capital is negatively correlated with re-entry for serial entrepreneurs (Amaral, Baptista, and Lima, 2011; Hessels, Grilo, Thurik, and Van der Zwan, 2011); it could be that highly educated individuals may obtain higher returns in employment. In contrast, serial entrepreneurs with specific human capital return to entrepreneurship (Amaral, Baptista and Lima, 2011). Though

the evidence is not clear cut there is some support for Wiklund and Shepherd's (2008) thesis that general human capital will be associated with portfolio entrepreneurship, while specific human capital (as with other embedded resource endowments) will be related to serial entrepreneurship.

4.3.7 Human Capital and Business Performance Studies

A meta-analysis of 70 pieces of quantitative research by Unger, Rauch, Frese and Rosenbusch (2011) shows a significant but small positive relationship between human capital and performance. They conclude that success is often context specific and is better predicted using task-specific measures of human capital. However, contemporary longitudinal studies of serial entrepreneurs (Chen, 2013; Eesley and Roberts, 2013; Oe and Mitsuhashi, 2013; Toft-Kehler, Wennberg and Kim, 2014) all have performance outcome advantages accruing to serial entrepreneurs starting business in industries where they have had experience.

Nevertheless, overall, proof of the existence of an experience curve of increasing returns to experience from venture to venture remains elusive. Researchers who find curvilinear experience curves (Parker, 2013; Toft-Kehler, Wennberg and Kim, 2014) provide different explanations for their results: human capital depreciation and superstitious learning.

Human Capital Depreciation

Parker's pattern of 'reversion to the mean' of outcomes of self-employment is attributed to the depreciation of human capital over time. Other commentators also support depreciation, such as when networks built up in previous ventures are disbanded (Rerup, 2005), and as part of the ageing process (Cressy, 1996). The value of knowledge gained from previous industry experiences erodes very quickly (Newbert, 2005) and investments may be required to maintain its value (Ucbasaran, Westhead and Wright, 2009; Ucbasaran, Wright, Westhead and Busenitz, 2003). Parker's study turns the assumption of a learning curve on its head. For the serial self-employed, economic returns to experience are negative not positive. The initial stock of human capital dissipates unless perhaps specific prior knowledge is reused relatively quickly. Another interpretation is that the mean return is a measure of their innate and fixed talent. Again, there is the questionability of the representativeness of self-employment data for all forms of serial entrepreneurship.

Faulty 'Superstitious' Learning

Toft-Kehler, Wennberg and Kim's (2014) large study of Swedish entrepreneurs attributes its U-shaped returns to human capital to faulty learning at low levels of experience. With only one cognitive anchor (the first venture) to learn from, unless there is strong contextual similarity,

entrepreneurs make mistakes in their second venture. Having learned from their mistakes their performance then improves. Serial entrepreneurs will be observed making mistakes early in their career before the learning curve reasserts itself.

Novice vs. Habitual Performance Studies

The likely advantages of experience do not reveal themselves in clear performance differences between the ventures of habitual and novice entrepreneurs. It may be misleading to assume that all habitual entrepreneurs are successful and outperform novice entrepreneurs (Ucbasaran, Westhead and Wright, 2006). Several studies find no difference in the performance between habitual and novice entrepreneurs (Birley and Westhead, 1993; Kolvereid and Bullvag, 1993; Ucbasaran, Westhead and Wright, 2006; Westhead and Wright, 1998a, b). However, the picture becomes clearer in studies that distinguish between portfolio and serial entrepreneurs.

Serial vs. Portfolio Entrepreneur Performance Studies

As already noted there is some evidence that portfolio entrepreneurs perform better than serial entrepreneurs. Despite their experience serial entrepreneurs are actually more like novices than portfolio entrepreneurs. Portfolio founders are more organised and more likely to actually start a business and not give up in the first year (Alsos and Kolvereid, 1998). One study by Westhead, Ucbasaran, Wright and Binks (2005) of 354 Scottish businesses shows that firms run by portfolio entrepreneurs are larger, grow faster in terms of sales and employment, and generate significantly more income compared to firms run by serial and novice entrepreneurs.

Income and Earnings vs. Venture Outcome

Few of these studies include an absolute measure of venture outcome, i.e. exit. This data is probably not available in the datasets employed. Nor is the distinction between serial and portfolio entrepreneurs available. The relationship between personal income and venture outcome and differences between the two types of habitual entrepreneur are worth exploring.

4.3.8 Innate Talent vs. Experience and Learning

Some researchers ascribe differential performance to an innate and fixed talent rooted in cognitive ability. Entrepreneurs learn about their ability to compete in a particular industry so as to decide either to stay or quit (Jovanovic, 1982). In most interpretations of this work (e.g. Storey, 2011) 'Jovanovic learning' precludes learning by doing. Recent quantitative studies of serial entrepreneurs identify talent as the principal explanation for superior returns to entrepreneurship, where talent is

assumed to be an innate and fixed superior cognitive ability (Chen, 2011; Eesley and Roberts, 2012; Gompers, Kovner, Lerner and Scharfstein, 2006; 2010). However, the research concludes that the combination of industry experience and talent can extract more from any entrepreneurial situation.

Gompers, Kovner, Lerner and Scharfstein (2006; 2010) conclude that serial entrepreneurs do not learn from success because their data shows first-time entrepreneurs have the same chance of succeeding as entrepreneurs who previously failed. Eesley and Roberts (2012) conclude that less talented serial entrepreneurs rely on experience and chose to start ventures in familiar contexts. Therefore, it is possible to posit that talented serial entrepreneurs will be observed founding new firms in new corridors, including new industries.

'Success Breeds Success' Theory of Habitual Entrepreneurship

Very influential researchers Stuart and Abetti (1990) assume that the experience of a successful business is a better predictor of future success than experience of failure. Talent theorists go further and postulate a 'success breeds success' theory of serial (habitual) entrepreneurship. Talented entrepreneurs are more likely to receive high average profits in their initial ventures that are then likely to motivate them to found new firms (Chen, 2009; 2013; Gompers, Kovner, Lerner and Scharfstein, 2010). Consequently, serial (habitual) entrepreneurs form a more talented pool of individuals than the pool of all entrepreneurs (Eesley and Roberts, 2012).

The success breeds success theory follows the same economic principles as the division of labour and the matching of talented entrepreneurs to suitable opportunities (Lucas, 1978; Holmes and Schmitz, 1990; 1995). Talent is assumed to be a cognitive ability beyond risk bearing that employs frame-breaking mental activities such as experimentation, questioning, and observation (Eesley and Roberts, 2012). Talented entrepreneurs are better able to make judgements beyond prior knowledge such as timing of entry into new markets (Gompers, Kovner, Lerner and Scharfstein, 2010). More research is required. Chen's data set includes self-employed, Gompers et al is of elite businesses attracting VC funding where success is defined as achieving an Initial Public Offering (IPO) and Eesley and Roberts restricted their sample to MIT graduates, who likely represent a social and intellectual elite. Differences between the success rates of the different categories of entrepreneurs are quite small at 5%. Nevertheless, Gompers et al. still conclude that failed returning serial entrepreneurs do not learn from failure as their IPO success rate is similar to that of novices.

Innate talent and learning from experience are positioned as alternative theories. However, an alternative view is that talent and learning from experience are not mutually exclusive. Serial entrepreneurship requires cognitively intelligent, i.e. talented individuals, to transfer to the next

venture learning from both success and failure (Sarasvathy, Menon, Kuechle, 2013). If talent is cognition and learning is also a cognitive ability, then there will be differential learning between successful and unsuccessful serial entrepreneurs and talented entrepreneurs can learn and recover from failure.

4.3.9 Summary

Prior knowledge of pursuit and exploitation confers cost and efficiency advantages to serial entrepreneurs on re-entry to entrepreneurship. Previously acquired specific human capital vital for venture formation and development is intuitively thought significant for venture performance. However, the evidence presents a mixed picture. From the review of recent studies industry experience appears significant to performance. Many of the skills and much of the information necessary to effectively exploit an opportunity can only be learned through industry experience. Other types of human capital, such as employment experience, appear to be more beneficial when from the same industry. Nevertheless, industry specialisation by serial entrepreneurs remains understudied. Other types of research into incubation of first ventures may provide clues as to the process of serial entrepreneurship.

Serial entrepreneurs benefit from start-up experience and reputation to obtain and organise resources. However, the advantage is not used because serial founders rely much more on their own resources than portfolio entrepreneurs. Studies find that portfolio entrepreneurs are more successful than serial entrepreneurs. Access to capital and the exploitation of economies of scope and other synergies are a source of advantage to portfolio entrepreneurs. Serials without these advantages are more similar to novices in behaviour and outcomes.

The difficulty in finding clear cut evidence for a positively sloped experience curve has led to theories of rapid human capital depreciation and faulty learning from early ventures. Established theories based on innate (i.e. fixed) entrepreneurial talent and economic selection attract some empirical support. It is argued that the less talented specialise in one industry where they can rely on their experience. This implies that the truly talented can start successful businesses in different industries. An alternative view offered here is that talent and learning from experience are both manifestations of cognitive ability and therefore are not mutually exclusive. Successful serial entrepreneurs will be observed combining relevant industry experience with their cognitive ability. Experience of exit, including the impact on income and personal wealth from both failures and successes remains understudied. It does not feature as a key construct in human capital or venture performance

studies. Cognitively intelligent serial entrepreneurs should be observed learning from both success and failure over the course of their careers.

4.4 Section 4. Entrepreneurial Cognition

In this section the literature on a particular type of entrepreneurial human resource, cognition, is reviewed in detail to ascertain its significance to serial entrepreneurship. Everything else being equal cognitive talent underpins entrepreneurial judgement. Cognition has an iterative, recursive and dynamic quality, because cognitive ability is required to both form human capital through learning and also intelligently deploy it to process new information through recall and calculation. However, it is difficult to research the figurative 'black box' of cognitive processing.

4.4.1 The Importance of Cognition

Cognition is associated with entrepreneurial talent or business acumen and drives the economic matching process (e.g. Jovanovic, 1982; Lucas, 1978) of entrepreneurs to suitable opportunities. Similarly, cognition is central to the information centred view of entrepreneurial judgement. The information view of opportunities is that opportunities arise from information asymmetries (Hayek, 1945). These asymmetries are especially acute because valuable information is often held privately (Arrow, 1974). The exercise of entrepreneurial judgment requires a subjective cognitive synthesis of public and private information (Casson, 2005). Entrepreneurs may believe that they have lower information costs and better theories to help them process the information (Casson and Wadeson, 2007). The twin perspectives of access to information and information processing are present in Katz's (1992) socio-cognitive model of decision making. They use information significantly better than non-experts or non-entrepreneurs. For example, people will discover and exploit specific opportunities (that others cannot see), when information asymmetries and history-dependent accumulation of experience exists (Shane, 2000; Shane and Venkataraman, 2000). Entrepreneurs exercise creative cognitive leadership (Witt 1998; 2007) to make and communicate business conceptions (i.e. opportunities), and organise ambiguous information into agendas and action plans. Cognitive ability distinguishes talented habitual entrepreneurs who can achieve more economic rents from any combination of resources (Eesley and Roberts, 2012), and is thought to drive the division of labour that matches serial entrepreneurs to suitable opportunities (Plehn-Dujowich, 2010). Entrepreneurship is a process of learning (Minniti and Bygrave, 2001) and learning is a cognitive ability (Holcomb, Ireland, Holmes, and Hitt, 2009; Politis, 2008). Higher order cognition is required to escape the path dependent nature of learning and to recognise new innovative opportunities (Rerup, 2005).

4.4.2 Entrepreneurial Cognition

Entrepreneurs are said to have a unique mind-set (Ireland, Hitt, Sirmon 2003; McGrath and MacMillan, 2000), orientation (Lumpkin and Dess, 1996), or dominant logic (Reuber and Fischer, 1999). Entrepreneurial cognition is concerned with how entrepreneurs think. In particular, it is concerned with the knowledge structures that people use to make the assessments, judgments, or decisions involving opportunity evaluation, venture creation and growth (Mitchell, Busenitz, Bird, Gaglio, McMullen, Morse and Smith, 2007), that transform the exchange value of resources in an economy (Grégoire, Corbett and McMullen, 2011). Classified as a resource (Alvarez and Buzenitz, 2001; Barney, 1991), cognition is the active and dynamic ingredient in the formation and deployment of human capital (Castanias and Helfat, 2001). Nevertheless, despite its importance, cognition can be both an asset and a liability for habitual entrepreneurs (Starr and Bygrave, 1991).

Cognition Theory

Cognition encompasses all processes by which sensory input is transformed, reduced, elaborated, stored, retrieved, and used (Neisser, 1967). It forms beliefs and meanings that govern behaviour (Wiener, 1980). Cognition theories (Fiske and Taylor, 1991; Gioia and Poole, 1984) explain how an individual's cognitive profile of schemas and action orientated event scripts determine how they process complex information. Schemas can be thought of as how information is stored in an organised accessible way. Scripts are a form of procedural task orientated information. Mental schemas and scripts link cognition to learned prior knowledge. Schemas and scripts are models of how the world operates in particular domains, built on past experience with specific examples called templates and exemplars available to support reasoning by analogy. As schemas and scripts become richer with experience, they facilitate quicker and more effective information processing (Lord and Maher, 1990).

4.4.3 Bounded Rationality, Cognitive Heuristics and Biases

Neoclassical economic decision making assumes rational analytical decision making. Deliberate, systematic, rational models of cognitive processing assume information is thoroughly processed (Lord and Mather, 1990). Behavioural economics stems from perceived shortcomings in the application of neoclassical economics to real world problems. Simon (1955; 1959) and March and Simon (1958) replace expected utility theory with the theory of bounded rationality, where economists treat the human mind as another 'scarce resource' (Simon, 1978). Decision making is subject to heuristic short-cuts, a kind of shortened script or rule of thumb. Heuristics yield quick and effective decisions to problems, but are likely to be biased (Bazerman, 1990; Tversky and Kahneman,

1974). However, heuristic processing economises on mental resources, as it uses previously learned and tested mental short cuts (Lord and Mather, 1990), and is considered to be useful in complex and time limited decision scenarios typical of those faced by entrepreneurs (Baron, 1998; Busenitz and Barney, 1994).

Prior experience based decision-making uses information clues whether recognised consciously or not (Simon, 1973). Heuristics may come from repeated practice of analytical thinking; so called intuitive expertise (Simon, 1987). Some research on entrepreneurial cognition indicates that entrepreneurs are more influenced by heuristics than managers (Busenitz and Barney, 1994; Busenitz and Lau, 1996), and habitual entrepreneurs are thought to rely on heuristics more than novices (Ucbasaran, Wright, Westhead and Busenitz, 2003). Habitual entrepreneurs are characterised as having a mind-set that avoids analysing ideas to death (McGrath and MacMillan, 2000).

Biases occur in heuristic decision making when too much reliance is placed on past experience. Prior knowledge is more 'available' and provides a cognitive 'anchor' for judging new information (Kahneman and Tversky, 1972; Tversky and Kahneman, 1974). The way a habitual entrepreneur frames a problem and searches for solutions may become more narrow and channelled by past experience (Shepherd, Zacharakis, and Baron, 2003), and there is a danger of myopic repetition of successful 'recipes' unadjusted for new circumstances (Wright, Robbie and Ennew, 1997a,b). Habitual entrepreneurs may continue to use the same information sources and social and business contacts that reinforce existing patterns of thinking (Starr and Bygrave, 1991), and be hindered in their ability to acquire new information and ideas (Gruber, 2010; Gruber, MacMillan, Thompson, 2012; 2013; Ucbasaran, Westhead and Wright, 2009). Furthermore, if an experienced decision maker is unaware of bias in their decision making process, it can lead to other dynamic cognitive effects such as hubris and over confidence (Hayward, Shepherd and Griffin, 2006; Ucbasaran, Wright, Westhead and Busenitz, 2003).

Experimental data gathered from students and young small businesses suggests that start-ups are prone to biased thinking in not perceiving risks from competition and overestimating demand (Simon and Houghton, 2002; Simon, Houghton, Aquino 2000). There is also some evidence that the overly negative or positive framing of future prospects makes entrepreneurs more risk seeking (Kahneman and Tversky 1979; Tversky and Kahneman, 1974; 1986). Simon, Houghton, Savelli, (2003) find that managers who are less satisfied with their current situation take risks, by introducing products into less familiar markets, even though it requires more resources. In experimental data, Hsu, Wiklund and Cotton (2015) propose positive framing of future prospects to

explain why so many failed entrepreneurs re-enter entrepreneurship, even when failure has undermined their self-efficacy. Also, they find that practising entrepreneurs tend to have high self-efficacy that can overrule any effects of prospect framing.

Research of entrepreneurial heuristics has mainly been conducted at the firm level. Here, organisational heuristics are akin to the 'routines' of Nelson and Winter's (1982) evolutionary resource theory, and emphasise the many positive aspects of heuristics set out by Gigerenzer (1996; 2008). They are central to knowledge capture and learning (Bingham, Eisenhardt and Furr, 2007). In particular, 'fast and frugal' heuristics outperform analytically complicated and information intensive routines, because heuristics exploit information about context (Gigerenzer and Brighton, 2009). Manimala (1992) finds that innovative firms have a better developed opportunity capture heuristic, where the major source of new ideas is their routine contacts (customers, dealers, suppliers ,etc), who bring out problems with existing products and services supported by wider search activities. Less innovative firms replicate existing ideas and strategies until there is a crisis. For example, Bingham and Haleblian (2012) show that organisations learn new heuristics following failure from attempts to internationalise. Using the same case data, Bingham and Eisenhardt (2011) conclude that heuristics are 'rational,' especially in unpredictable markets and that the transition from novice to expert heuristics is an important step in developing resource capabilities.

4.4.4 Human Capital Template Theory and Joining the Dots

Mental schemas and scripts provide the cognitive element of idiosyncratic 'knowledge corridors' (Venkataraman, 1997) that channel or corridor entrepreneurs into familiar domains. More formally from Kolb's (1984) theory of learning, prior knowledge moderates the cognitive process of opportunity recognition (Corbett, 2002; 2007). Schemas of prior knowledge are cognitively arranged into prototypes and exemplars that help entrepreneurs to 'connect the dots' of new opportunities (Baron, 2006). Prototypes are general descriptions of a domain while exemplars are concrete examples that facilitate reasoning by analogy (Baron, 2006; Fiske and Taylor, 1991). Bi-association is the cognitive mechanism that connects unrelated domains to create ideas where none existed before (Ko and Butler, 2003; 2006), and links ends with means (Smith and Di Gregorio, 2002). For example, consistent with Venkataraman and Sarasavathy's (2001) framework of opportunity discovery, opportunities may be presented as cognitive puzzles of problem-solution pairings, where either the problem or solution is found first, and then paired (Hsieh, Nickerson, and Zenger, 2007).

Cognition predicts that novices can be more innovative, while experienced founders must balance an idea's newness with the reality of implementation. The evidence shows that the templates of prior

knowledge of experienced habitual entrepreneurs emphasise factors associated with successful pursuit and exploitation through new ventures (e.g. cash flow, meeting customers' needs, etc.), while those of novice entrepreneurs emphasise opportunity newness or novelty (Baron and Ensley, 2006). Entrepreneurs use prototypes to look for device plays over drugs plays in pharmaceuticals because of shorter lead times to market (Fiet, Clouse and Norton, 2004). Success stimulates persistence and repetition in any activity (Weick, 1984), and existing information stores and information processing will be reinforced by success (Minniti and Bygrave (2001). Cohen and Levinthal (1990) use the concept of absorptive capacity to describe how the ability to acquire new information is recursively dependent upon existing knowledge. A new idea that is closely matched against an existing prototype of an opportunity is more likely to be identified as an opportunity (Ucbasaran, Westhead and Wright, 2009). Empirical evidence (e.g. Hills and Shrader, 1998; Ronstadt, 1988; Shane 2000) confirms that new opportunities are often spin-offs of other opportunities. However, a well-developed mental schema acts as a 'mental blinder' and makes it difficult for individuals to notice, encode and remember information that is inconsistent with the existing schema (Baron, 2004). In extreme cases, entrepreneurs may be prone to a sunk cost bias where courses of action with negative outcomes are maintained (Staw, 1981), because the individual believes that they have too much at stake to reverse their initial decisions (Hmieleski and Baron, 2006). There is evidence that information is both channelled into particular areas (Burmeister and Schade, 2007) and also sought from particular areas (Fiet, 2002), thereby reinforcing the status quo.

Cognition and Economics

An economic view of cognitive abilities and mental schema would regard these as assets, where the marginal cost of processing information is lower using these established capabilities. Only information signals that relate to the entrepreneur's particular epistemic structure are processed; they match signals to what is already known (Fiet, Piskounov and Patel, 2005). Correct actions exhibit increasing returns to adoption such that they become repeated routines, even though they may be sub-optimal (Minniti and Bygrave, 2001). Indeed, some cognitive concepts have clear similarities with the principles of economic search, for example, the confirmatory search heuristic (Shepherd, Haynie and McMullen, 2011) is based on the principle that entrepreneurs seek out information that is consistent with their prior beliefs and conjectures.

Therefore, successful habitual entrepreneurs operating in the same industry are likely to attempt to replicate actions that were successful before though conditions have changed (Ucbasaran, Wright, Westhead and Busenitz, 2003). Even when moving to new domains they will repeat practices that were successful in another domain (Wright, Robbie and Ennew 1997 a, b). Serial entrepreneurs may

not be able to notice significant new information clues due to their strong mental schema (Ucbasaran, Westhead and Wright, 2009) and find it difficult to escape a particular knowledge corridor (Gruber, MacMillan and Thompson, 2013).

4.4.5 Expert Information Processing

Experts are people who excel primarily within their own domains. They are able to perceive problems in their domain at a deeper level and spend a larger proportion of time in qualitative analysis and self-monitoring their effectiveness (Glaser and Chi, 1988), for example through meta-consciousness (Flavell, 1979). Expert performance also requires maximal adaptation to task constraints (the rules of the game) within the domain (Ericsson and Lehmann, 1996). Expert habitual entrepreneurs are expected to demonstrate similar cognitive abilities honed through practice (Baron and Henry, 2006, 2010; Mitchell, Busenitz, Bird, Gaglio, McMullen, Morse and Smith, 2007), that are a source of comparative advantage in entrepreneurial decision making. However, advanced expertise may require ten years of 'deliberate practice' to develop (Ericsson, Krampe and Tesch-Romer, 1993) and it may only be in the middle years of a habitual entrepreneur's career that expertise is in evidence.

4.4.6 Cognition and Opportunity Recognition

An exceptional cognitive ability ascribed to entrepreneurs is opportunity recognition. Cognitivists working with the inherent vagueness of Kirzner's work provide a possible 'how' of alertness. Gaglio (1997), Gaglio and Katz (2001) and Gaglio (2004) define alertness as expertise embedded in entrepreneurial mental schema and thought processes that enable the perception of new often innovative opportunities. Alert entrepreneurs are able to deploy mental simulation and counterfactual thinking to perceive new opportunities others cannot conceive (Gaglio and Katz, 2001; Gaglio, 2004). Alert entrepreneurs are both more rational by not falling foul of a variety of biases and framing effects, and are also able to 'think outside the box' to perceive new opportunity means-ends. Experienced entrepreneurs are able to switch between heuristic and analytical thinking (Baron and Ward, 2004). Habitual entrepreneurs are expected to be better able to 'connect the dots' between seemingly unrelated changes or events to detect meaningful patterns (Baron 2006; Baron and Ensley, 2006). Grégoire, Barr and Shepherd's (2010) study is evidence of expert information processing, prior knowledge of markets allowing deeper thinking and the recognition of non-obvious valuable opportunities.

Cognitively expert entrepreneurs are better equipped to resist availability and anchoring biases (Kahneman, Slovic, and Tversky, 1982). Experts are able to search cognitively using both imagination

and experientially by interacting with the actual environment (Gavetti and Levinhal, 2000). In an experimental study, expert entrepreneurs under-weighted, ignored and argued against making predictions and were prepared to change their initial goals and visions for a new venture (Dew, Read, Sarasvathy and Wiltbank, 2009). Innovative entrepreneurs acquire and process information through questioning, observing, experimenting and idea networking (Dyer, Gregersen and Christensen, 2008). Evidence shows that experienced entrepreneurs are able to deploy quick heuristic or slow rational information processing as the situation requires (Gustafsson, 2006). Other evidence shows that algorithmic methods are more likely to lead to existing problem–solution opportunities, while new problem–solution opportunities arise from heuristic trial and error methods (Vaghely and Julien, 2010).

Learned beliefs or theories (Casson, 1982) underpin the entrepreneur's cognitive structures, and having a strong self-sense of how to connect the dots allows entrepreneurs to direct their own learning (Krueger, 2000; 2007). The degree of reflective learning or the mindfulness and mindlessness with which entrepreneurs use prior experience can both help and harm their ability to discover and exploit opportunities (Rerup, 2005). Following Langer (1989), mindfulness will create new more nuanced and discontinuous categories out of prior experience that generate adaptive and alternative ways to operate, while mindlessness is like being on automatic pilot. Habitual entrepreneur Stelios Haji-loannou's 16 mainly start-up ventures used both mindless (simple brand extension) and mindful (application of a business model) approaches to generate new businesses (Rerup, 2005).

Expert entrepreneurs will have better perception, memory, metacognition, and intuition (Baron and Henry, 2010). Metacognition is 'thinking about thinking' (Flavell, 1979) to consciously understand the elements that make up one's own decision process, and is valuable in dynamic, uncertain and novel situations (Haynie, Shepherd, Mosakowski and Earley, 2010). Through metacognition, expert entrepreneurs are able to deploy different types of cognitive processing, and be selective in their use of previous experience that is encoded in schema, templates and the like. The ability to reflect on one's decisions and the cognitive process that generated them is likely to be a facet of persistence and successful habitual entrepreneurs (Ucbasaran, Wright, Westhead and Busenitz, 2003). Set against flexible thinking is evidence for a dominant logic (Reuber and Fischer, 1999) that is difficult to change. Engineers use established scripts and algorithms, while artists use mostly heuristic types of information processing, such as trial and error (Vaghely and Julien, 2010).

The majority of serial entrepreneurs work with the same trusted partner in multiple start-up ventures (Gemmell, Boland and Cobb, 2012), and social cognitivists propose a more complex

opportunity recognition and development process that relies on shared cognition through social ties, mentors and small entrepreneurial teams.

From an economic perspective, higher level cognitive processing is costly (Levinthal and March, 1993), and in the presence of information symmetries and uncertainty highly imperfect. Knowledge structures (i.e., schemata, scripts, frames, stereotypes, etc.) tend to be very abstract (Tang, Kacmar, and Busenitz, 2010). The limited ability to research the figurative 'black box' of cognitive processing must lie at the root of the seeming lack of empirical evidence in this field.

The nature of cognition and its relationship to the development of expertise remains a subject of debate in the literature of habitual entrepreneurship. Recent quantitative studies of serial (habitual) entrepreneurs (Chen, 2011; Eesley and Roberts, 2012) identify talent as the principal explanation for superior returns to entrepreneurship. Talent is assumed to be innate and fixed superior cognitive abilities that for the more gifted entrepreneurs are transferrable to different domains. Here the innately less talented rely on their expertise developed through experience. The alternative proposed here is that learning from experience is also a cognitive ability, and talented entrepreneurs will learn from experience.

4.4.7 Summary

Human capital can be conceptualised as different categories of prior knowledge resources available in schema and associated with abilities embedded in 'cognitive software', i.e. scripts, heuristics, and learning processes essential for the formation of new human capital. This synthesis is summarised in the following diagram.

	Access to Information	Information Processing
External Resources	Secret Information	External Search
	Private Information	Economic Search
	General Information	Alertness
	Computer Storage	Computer Processing
	Networks: Private	
	Networks: Public	
	Internet	
Internal Resources	Meta Knowledge	Meta Cognition
	Epistemic Structures	Mindfulness
	Scripts	Mental Simulation
	Schema	Counterfactual Thinking
	Templates	Heuristics and Bias
		Pattern Recognition
		Reasoning by Analogy

Figure 4.2 Information Orientated Model of Entrepreneurial Decision Making

The cognitive abilities of successful serial entrepreneurs are not well understood. Behavioural economics, the information processing view of entrepreneurship, the division of labour and the talent driven theory of entrepreneurial selection all view cognition as a scarce resource. Therefore cognition is essential for explaining differential entrepreneurial ability or talent of serial entrepreneurs. Serial entrepreneurs are expected to demonstrate expertise in the coordination of scarce resources, including their own cognitive resources through higher order thinking such as metacognition and mindfulness.

A potential liability of experience derived heuristics and schemas is that they may lead to insensitivity to noticing and absorbing new information. This may lead to biased and myopic thinking. Nevertheless, it is economically rational to reuse and further specialise costly to replace mental assets, whose cost of development is already sunk. Therefore, cognitive resources may exhibit irreversible path dependent qualities. It is therefore more likely that serial entrepreneurs will specialise in the same task and content domains, starting similar ventures in the same industry.

However, economic selection and Schumpeter's innovative entrepreneur require at least some individuals of high cognitive ability and talent. These entrepreneurs deploy sophisticated mental strategies such as counterfactual thinking and mental simulation, and can resist bias and other mental traps. Some cognitively talented serial entrepreneurs are expected to be able to think mindfully beyond prior knowledge and succeed in new domains.

4.5 Section 5. Entrepreneurial Learning

In this section the review of entrepreneurial human capital and its related fields is extended from cognition to learning ability. Learning is positioned here as a cognitive ability required for both building new stocks and to revalue existing stocks of human capital.

4.5.1 The Importance of Learning

Studying serial entrepreneurs without learning limits our ability to understand the entrepreneurial process as it unfolds over time. The evidence for a direct causal relationship between human capital and returns to entrepreneurship is inconsistent, revealing that a more complex less accessible process is involved, an insight predicted by the assets and liabilities theory of habitual entrepreneurship (Starr and Bygrave, 1991). Even though human capital is mainly acquired through learning, analysis of the careers of serial entrepreneurs is not expected to show an upward sloping experience or learning curve directly related to venture performance and personal wealth. However, recent postulates that advance the theory of serial entrepreneurship assume learning is important. It requires cognitively intelligent entrepreneurs to transfer, i.e. 'infect' the next venture with learning from both success and failure (Sarasvathy, Menon, Kuechle, 2013). Effective firms are most likely to be led by entrepreneurs who not only judiciously embed their own knowledge, but who also have the willingness and capability to learn which becomes part of the firm's culture (Oe and Mitsuhashi, 2013).

Entrepreneurial Learning

Learning is the achievement of new understanding and meaning (Daft and Weick, 1984). Entrepreneurship is an ability gradually built up over time during the careers of enterprising individuals (Politis, 2005, 2008), and is a dynamic learning process (Minniti and Bygrave, 2001; Rumelt, 1987). Without learning, human capital research is a static comparison of an entrepreneur's total stock of experience at a given point of time with a given outcome (Reuber and Fischer, 1999). There is a need to know what, whether, and how habitual entrepreneurs learn from previous business ownership experiences (Westhead and Wright 1998a; Rerup, 2005). Learning is not automatic in entrepreneurship (McGrath, 1999), and learning from experience may be difficult, particularly when task content and industry context are dissimilar (Toft-Kehler, Wennberg and Kim, 2014).

4.5.2 The Learning Curve

Learning is required to develop human capital and explain increases in per capita income not attributable to other sources (Arrow, 1962). The learning curve postulates that expertise is developed through repetitive action that results in cost savings (Yelle, 1979). Lamont (1972) noted that 'practice makes perfect' for repeat entrepreneurs, and MacMillan (1986) formally makes it a focus of study as the 'experience curve'. However, not all forms of learning are good, and passive (as opposed to dynamic) learning that accrues over the course of time has been shown by Thompson (2010) to lead to stagnation in industrial settings.

Experience should not be equated with knowledge (Bingham, Eisenhardt, Furr, 2007), as experience may be a poor teacher (Levinthal and March, 1993). Kolb's (1984) theory of experiential learning makes the distinction between knowledge acquisition (experience) and transformation (learning). It is entrepreneurial expertise not experience that is more likely to be correlated with performance (Politis, 2005; Reuber and Fischer, 1994). Therefore, learning is not automatic, and that which is learned may not be correct. Therefore, increasing returns to learning from experience should not be assumed every time for all serial entrepreneurs.

4.5.3 Learning: Task and Domain Similarity

If serial entrepreneurs start ventures in unfamiliar domains it may inhibit learning from experience. The cognitive process of learning is reinforced when content and context are similar (Zahra and George, 2002). When formulating strategy, habitual entrepreneurs can use reasoning by analogy (Gavetti, Levinthal, and Rivkin, 2005) to build links between previous and current venture experience. The closer the similarity between the tasks and domain of the previous business the more likely is existing learning to be re-used without modification (Chandler, 1994). It is very likely that serial entrepreneurs will encounter enough differences in each venture that prior knowledge cannot be reused without modification (Toft-Kehler, Wennberg and Kim, 2014); i.e. some new learning has the potential to take place. Individuals with greater task experience are likely to be more responsive to contextual changes exercising experience-based discretion (Turner and Fern, 2012).

4.5.4 Learning from Feedback

Only where tasks are well defined, repeated often, and feedback is accurate and timely, does decision making improve (Hayward, Shepherd and Griffin, 2006). Start-up experience may not provide sufficient feedback to enable effective learning about a particular task (Cassar, 2014). In fact, all infrequent events are difficult to learn from because repetitiveness cannot compensate for time decay (Parker, 2013). To overcome cognitive framing effects (Tversky and Kahneman, 1992),

only when entrepreneurs have multiple reference points from several start-ups can they judge how to handle different start-up situations effectively (Toft-Kehler, Wennberg and Kim, 2014). For example, multiple entrepreneurial experiences help the entrepreneur to detect and pursue opportunities with a stronger personal fit (Amaral, Baptista and Lima, 2011). Unlearning is also needed in the face of difficulties and performance detracting routines (Bingham and Halebian, 2012; Dencker, Gruber, and Shah, 2009; Nystrom and Starbuck, 1984; Reuber and Fischer, 1999). Empirical studies reveal that both positive success and recovery from negative experience have good potential for generating useful learning, but only in the presence of sufficient prior experience of the same type (Kim, Kim, and Miner, 2009).

4.5.5 Learning from Critical Events

Entrepreneurship is inherently uncertain. Successful venturing requires developing the ability to respond effectively to unanticipated problems and opportunities (Reuber and Fischer, 1999), such as the critical incidents (Chell, 2004) that punctuate the life-cycle of a venture (Cope, 2003; 2005; 2011; Rae and Carswell, 2001). Serial entrepreneurs are exposed to more critical events and discontinuities from multiple start-up and exit experiences over their careers. These should further increase management capacity (Kirschenhofer and Lechner, 2012) because discontinuous events trigger 'transformational learning' (Cope, 2003; 2005), and play a significant role in the formation of expertise. Failure can have positive learning outcomes such as becoming future-oriented and developing greater preparedness for further enterprising activities (Cope, 2011).

Learning from Failure

Failure has a longstanding place in respect of entrepreneurial learning and decision making (Cardon and McGrath, 1999; McGrath, 1995; McGrath, 1999; Politis and Gabrielsson, 2007). Failure and underperformance can revise previously ineffective practices, highlight mistakes and augment skills and knowledge about the entrepreneurial process (Cope, 2011; Sarasvathy, Menon and Kuechle, 2013). Without the occasional failure, entrepreneurs may: a) become prone to self-serving bias and over confidence (Baron, 1998); b) stick to the same formula (Sitkin, 1992); and c) be unable to switch out of automatic heuristic based thinking (Ucbasaran, Wright, Westhead and Busenitz, 2003).

Because of spill-over and learning effects, it is often more useful to evaluate the collective contribution of entrepreneurial initiatives to wealth creation than to assess each venture on its own (McGrath, 1999; Sarasvathy, Menon and Kuechle, 2013). Disappointing events can provide data crucial to assessing the actual trajectory of a venture, setting the stage for strategic redirection (McGrath, 1995; Cope, 2011). Experienced entrepreneurs have developed a higher acceptance of

failures as a way of reducing uncertainty (McGrath, 1999; Minniti and Bygrave, 2001). There is some evidence that this learning does occur. Habitual entrepreneurs with prior experience of start-up and business failure have a more positive attitude toward failure (Politis and Gabrielsson, 2007).

4.5.6 Learning Vicariously

Serial entrepreneurs can do more than just learn from their own experience. Vicarious learning occurs when firms attempt to understand and potentially adopt the strategies, administrative practices, technologies, successes and failures of other organisations (Huber, 1991; Baum and Ingram 1998; Ingram and Baum, 1997; Kim and Miner, 2007). Vicarious learning is one method by which information asymmetries disappear (Eckhart and Shane, 2003). Information is disseminated during the life-cycle stages of industry development (Low and Abrahamson, 1997) to achieve equilibrium, and opportunities arise from mistakes of other entrepreneurs (Kirzner, 1973). Serial entrepreneurs who are more alert and/or employ formal search routines will benefit from information gained through vicarious learning. In addition, serial entrepreneurs who pursue imitative ventures will deploy vicarious learning strategies.

4.5.7 Learning and Path Dependency

The principle of absorptive capacity maintains that the more similar new information is to prior knowledge the easier it is to absorb the new knowledge (Cohen and Levinthal, 1990; Zahra and George, 2002). Learning from prior experience is particularly relevant (Argote and Ingram, 2000). The learning process itself may also be path dependent (Levitt and March, 1988). Learning is heavily based on interpretations of the past, adapting incrementally to feedback using the logic of appropriateness rather than a logic of calculated choice (Cyert and March, 1964, Nelson and Winter, 1982). History matters (Arthur, 1989) because an entrepreneur's previous investments and repertoire of routines constrains his future behaviour (Minniti and Bygrave, 2001). The initial endowment of knowledge affects the future path of the venture. What an organization knows at start up determines what it searches for, what it experiences, and how it interprets what it encounters (Huber 1991). The reuse of this initial endowment may lead to the formation of a dominant logic and information funnel/knowledge corridor (Venkataraman 1997) that reinforces the current path (Reuber and Fischer, 1999).

Economic modelling of learning and feedback also predicts a narrow path-dependent learning. Entrepreneurs develop 'myopic foresight' by learning from successes as well as failures in a non-linear stochastic feedback process that is self-reinforcing, even though what is learned may be sub-optimal (Minniti and Bygrave, 2001). Economic search in the opportunity discovery literature (e.g.

Fiet, 1996) also has a self-reinforcing capacity. The same familiar information channels that yielded opportunities in the past are reused again and again.

Therefore, in spite of the potential to learn from experience, some individuals may be stuck in the past (Ward, 2004); affected by the liability of staleness (Starr and Bygrave, 1991); or mental ruts (Fiske and Taylor, 1991). In these circumstances entrepreneurs may find themselves prey to 'competency traps' and 'superstitious learning' (Levitt and March, 1988), or 'hubris' (Hayward, Shepherd and Griffin, 2006) or the 'mindless' application of prior knowledge (Rerup, 2005). Over investment in current competencies exposes individuals and organisations to change in their environments and a mismatch between exploration and exploitation (Levinthal and March, 1993). Superstitions arise when the subjective experience of learning is compelling, yet the connections between actions and outcomes are still incorrectly aligned (Levitt and March, 1988). The sunk cost fallacy, or 'throwing good money after bad', is an example of a perceptual trap, where the entrepreneur believes there to be irreversible path dependencies, or that success is just around the corner. As already discussed, the available evidence (Kim, Kim, and Miner, 2009) suggests that accumulated experiences of the same type are needed to compare and contrast in order to overcome misperceptions. This may explain data that shows negative outcomes reverse when serial (habitual) entrepreneurs exceed moderate levels of experience (Toft-Kehler, Wennberg and Kim, 2014).

4.5.8 Higher Order Cognitive Learning

An alternative to learning from experience is the possession of higher order cognitive abilities associated with entrepreneurial talent (Eesley and Roberts, 2012; Gompers, Kovner Lerner and Scharfstein, 2007). Another aspect of higher order learning is learning about one's self. This type of learning facilitates a better fit between an entrepreneur and the opportunity (Shepherd, McMullen and Jennings, 2007). Entrepreneurs with higher order cognitive abilities may have the ability to escape the various cognitive traps (e.g. Dyer, Gregersen and Christensen, 2008; Kahneman, Slovic, and Tversky, 1982). Successful serial entrepreneurs can perform higher order learning by: a) mindfully reassessing their mental models and behaviours; b) abandoning ineffective routines and keeping effective routines; and c) implementing more appropriate strategies in the next cycle (Rerup, 2005).

Synthesis of Learning

Overall, there are then effectively four aspects of learning: 1) turning experience into knowledge in one context (absorption), 2) transferring it to another context (transfer), 3) applying the knowledge

in another context (transfer application), and 4) revaluing knowledge in relation to specific uses, past, present and future. Serial entrepreneurs, in facing a larger number of unpredictable critical events, can be expected to practice these types of learning to stay in the game.

4.5.9 Summary

Like cognition, there is little direct evidence about how and what serial and portfolio entrepreneurs actually learn. Learning is an entrepreneurial process that transfers experience into relevant knowledge. Learning requires adequate feedback and correct interpretation. This is more likely when a serial entrepreneur creates a new venture in a familiar industry. Specialisation actually facilitates adaptation through increased sensitivity to changes in industry conditions. The most commonly cited economic model of learning predicts that feedback has sub-optimal path dependent qualities reinforcing existing patterns. Learning is likely to deepen knowledge corridors and may restrict the perception of real options. Potential perceptual traps can be obviated, if the serial entrepreneur possesses higher order cognitive faculties. Of further significance, serial entrepreneurship is prone to discontinuous critical events that trigger 'transformational learning', chief among them failure. Failure allows serial entrepreneurs to question their previous often automatic application of previous recipes and thought patterns.

An additional concept offered here is that the ability to learn can reverse previous investments in knowledge infrastructures and the dependencies they generate in the presence of new and more attractive opportunities. By exiting their ventures serial entrepreneurs would appear to have much greater scope for this type of learning in pursuit of superior opportunities.

4.6 Section 6. Teams, Social Capital and Habitual Entrepreneurship

To this point the literature review has been true to calls to focus on the individual, examining individual entrepreneurial human capital and its specialist attributes of cognition and learning. This section reviews research into extensions to the capabilities of the individual entrepreneur afforded by social capital and by teams, and their likely impact on the sequence of ventures started by serial entrepreneurs.

4.6.1 Entrepreneurial Teams

Teams are considered here as a specific form of social capital. Some serial entrepreneurs will formally partner with other entrepreneurs to form small entrepreneurial teams that legally share ownership and control. Partnerships persist from venture to venture. Entrepreneurs frequently continue to work with partners formed in incubators (Cooper and Dunkelberg, 1986). Isos and

Kaikkonen (2004) noted that habitual entrepreneurs carry over associates to the next ventures. It is simply more economical to reuse existing partners than search for new ones (Forbes, Borchert, Zellmer-Bruhn, and Sapienza, 2006). Entrepreneurs also extend the core team with functional specialists, such as lawyers, accountants, consultants and investors (Dubini and Aldrich, 1991), and presumably, some of these professional relationships are also preserved and reused in subsequent ventures.

Teams are the initial resource-base of the firm and are regarded as significant for founders (e.g. Bates, 1990; Delmar and Shane, 2006; Lechner and Dowling, 2003; Westhead and Wright, 2011). Having more experience, habitual entrepreneurs should be more aware of their personal strengths and weaknesses (Politis, 2005), and value stronger teams (Tihula and Huovinen, 2010). Habitual entrepreneurs who have already experienced the start-up process together and forged functioning work and social relationships should be at an advantage (Ensley and Pearce; 2001; Lechler, 2001). Relatively stable teams through repeated venture partnerships might also reduce dysfunctional team turnover due to bad relationships (Francis and Sandberg, 2000). Team members leave mainly due to loss of interest or interpersonal dynamics (Chandler, Honig and Wiklund, 2005). A larger initial team size provides an advantage for new organisations (Chandler, Honig and Wiklund, 2005). Indeed, teams with a diverse range of skills and who enjoy good inter-personal relationships are much more likely to launch successful growth orientated firms (Eisenhardt and Schoonhoven 1990). Such teams make good decisions when they use simple rules or heuristics, and, moreover, balance conflictual decision making with good personal relationships (Eisenhardt, 2013).

However, the assets and liabilities thesis of habitual entrepreneurs warns that existing strong ties can lead to 'staleness' (Starr and Bygrave, 1991). Staleness is likely when entrepreneurs frequently continue to work with partners formed in incubators (Cooper and Dunkelberg, 1986), partners from previous ventures, and with family members who constrain choice (Ruef, Aldrich and Carter, 2003). The closed group effect assures good working relationships, however, it leads to less searching for solutions outside the team, a phenomenon also known as 'group think' (Kirschenhofer and Lechner, 2012); and limits the knowledge that can be assimilated and exploited (Gruber, MacMillan and Thompson, 2013). The advantages that teams possess on founding (such as knowledge of particular markets) are amplified, not dissipated, over time (Eisenhardt and Schoonhoven 1990). Strong teams of entrepreneurs will not always choose the best markets. Founding entrepreneurs typically choose markets they know best (Eisenhardt, 2013). Team composition can limit innovation and restricts entrepreneurs to familiar corridors.

Larger entrepreneurial teams are associated with identifying more opportunities (Gruber, MacMillan and Thompson, 2008; Ucbasaran, Westhead and Wright, 2008). Team experience of previous start-ups enhances both new venture survival and new venture sales. However, the effects are non-linear and decline as the venture ages (Delmar and Shane, 2006). For serial entrepreneurs in the multi-media industry, team diversity has a positive impact on enterprise performance while repeated partnerships have a negative impact (Kirschenhofer and Lechner, 2012).

Portfolio entrepreneurs are more likely to use teams than novices or serial entrepreneurs (Ucbasaran, Westhead and Wright, 2006), and acquirers are more likely to use teams than founders (Ucbasaran, Wright and Westhead, 2003). Gemmell, Boland and Cobb, (2012) found that all their sample of 32 technology entrepreneurs, of whom approximately half were serial (habitual) entrepreneurs, establish a well-seasoned team inner group or circle (de Koning, 2003). Of this small group the serial entrepreneurs commonly described a single 'trusted partner' as their most crucial 'ideational', with the great majority (65%) continuing the relationship in subsequent ventures, with no reports of a later 'divorce'. These relationships probably go beyond strong social ties as conventionally understood in social network theory (Granovetter 1973; 1985), effectively extending entrepreneurial human capital, cognition and learning available to a new venture. Regardless of gender, most entrepreneurs' strong tie networks consist of a few business associates, a few close friends, and one or two family members (Aldrich, Elam and Reece, 1996).

Even if serial founders do not legally share ownership they can be expected to form stable small teams, perhaps supported by professionals, who are recycled and reformed for each subsequent venture. Serial entrepreneurs will exhibit a team formation and management ability. However, venture team stability is likely associated with a narrower corridor of ventures.

4.6.2 Wider Forms of Social Capital

The literature often mentions human and social capital together as essential ingredients to access and organise resources, including opportunities. The corridor principal (Ronstadt, 1988) and real options theory (McGrath, 1996), predict that the potential future direction of serial entrepreneurs is strongly influenced by accumulated social capital derived from being in business. Social capital like prior knowledge is another legacy, inherited or spill-over asset that provides real options for the development of new ventures. It may act as an asset or liability (Starr and Bygrave, 1991). Alike with other resources with path dependent qualities, social capital may 'corridor' serial entrepreneurs within familiar areas. Alternatively, it may provide bridges to innovative opportunities and ventures in new areas.

Social Capital Theory

In social capital theory, networks of extended relationships provide their members with collectively owned capital (Bourdieu, 1986; Coleman, 1990). Network value is a function of social resources, network position, and relationship strength (Lin, 1999). Strong ties create bonds of trust that facilitate rapid diffusion of knowledge within the core social system; weak ties to dissimilar agents provide a social bridge to new knowledge and ideas (Granovetter 1973; 1985). These networks are helpful in: a) finding and realising opportunities (McGrath, 1996; McGrath and MacMillan, 2000), b) obtaining easier access to financial resources (Hsu, 2007), c) recruiting skilled labour (Hellmann and Puri, 2002), and d) developing effective teams (MacMillan, 1986).

4.6.3 Opportunities and Social Capital

Opportunities can arise from social interaction and exchange. Having a business grants automatic membership of business and social networks. Having, (or having had) a business gives preferential access to opportunities arising from the position of the entrepreneur and venture in the social environment; providing resources that are otherwise unavailable (McGrath, 1996; Ronstadt, 1988). Business networks of independent firms linked by social ties, common interests, friendship and trust create opportunities for exchanging goods and services that do not have to rely on formal contracts to enforce (Powell, 1990; Uzzi, 1996). Entrepreneurial networks are opportunity structures whereby entrepreneurs obtain instrumental social capital that helps identify and implement opportunities (Aldrich and Fiol, 1994; Aldrich and Zimmer, 1986). Social capital is related to industry structure. Business communities co-evolve joined by communalistic (within market) and symbiotic (across market) relationships based on common technology, regulatory regime, or other forms of industry or market organisation (Aldrich and Martinez, 2001). It can be inferred that strong ties reinforce existing patterns of behaviour, while weak outward facing ties provide links to new industry corridors.

Social Capital and Entrepreneurship: Evidence

Business contacts present new venture proposals to successful entrepreneurs in the network (Hills and Shrader, 1998). Half of all firms had their business idea suggested by a business associate or family member (Koller, 1998). A large social network with many weak ties is positively associated to idea identification and opportunity recognition (Singh, Hills, Hybels, and Lumpkin, 1999).

Entrepreneurs who had mentors, or were members of high quality formal and informal networks, were most alert to new business opportunities (Ozgen and Baron, 2007). Social capital and social competence together are related to financial success (Baron and Markham, 2000; 2003).

Geographic locations such as residential areas with their embedded social networks influence the perception of entrepreneurial opportunities (Arenius and DeClercq, 2005).

The ability to extend information access and information processing are cognitive aspects of social capital that are perhaps understated in the literature. Idea networking is a behaviour associated with generating novel ideas for innovative new businesses (Dyer, Gregersen and Christensen, 2008). Networks have also been shown to be important for opportunity exploitation (Davidsson and Honig 2003). They give access to resources significant for the gestation and start-up of new ventures (Robson, Akuetteh, Westhead and Wright, 2012a; Samuelsson and Davidsson, 2009). Social capital leverages the productivity of a venture's resource base and provides a durable source of competitive advantage (Florin, Lubatkin and Schulze, 2003). An entrepreneur's ability must include a social capital management dimension. The innate limits to talent and capacity of an individual can be extended through the judicious use of networks.

4.6.4 Social Capital and Habitual Entrepreneurs

Habitual entrepreneurs have had more opportunity to develop and refine their social capital resource (Kolvereid and Bullvag, 1993; McKelvie and Cedere, 2001). Habitual entrepreneurs exchange valuable resources including opportunities (Carter and Ram, 2003). Habitual entrepreneurs have two inherited advantages in forming new networks: the social network ties of the founding team, and the reputation and accomplishments of their previous firms (Hallen, 2008). Strong signals of quality (e.g. successful executives, impressive firm accomplishments) lower the costs of network development and accesses to new resources (Hallen, and Eisenhardt, 2012). New ventures that signal previous high-accomplishment are more likely to form ties with high-status partners (Hallen, 2008). Furthermore, reputation and legitimacy can be used to convince others to reallocate resources in ways counter to existing norms (Shane and Khurana, 2003). Habitual entrepreneurs have specific human capital accumulated from prior independent business ownership, such as leveraging information from business and/or governmental networks that enable them to discover more business opportunities than novices (Westhead, Ucbasaran and Wright, 2005a). Habitual university-based entrepreneurs have broader social networks that bridge the gap between academia and business (Mosley and Wright, 2007). Overall, successful habitual entrepreneurs who possess the valuable social capital of reputation can more easily attract suppliers of capital, labour, goods, and services if suppliers believe there is performance persistence (Gompers, Kovner, Lerner and Scharfstein, 2010).

In recent studies, strong networks are associated with portfolio entrepreneurship, rather than serial entrepreneurship, especially where the network includes bridges to external support agencies (Robson, Akuetteh, Westhead and Wright, 2012; Wiklund and Shepherd, 2008). However, in other studies, portfolio entrepreneurs avoid external professional information sources (Westhead, Ucbasaran, Wright and Binks, 2005); and serial entrepreneurs emphasised making alliances with other organisations (Westhead, Ucbasaran and Wright, 2003). Like teams, networks are more important to habitual acquirers than to habitual starters, because acquirers retain the same professional service providers and maintain good relationships with both business vendors and purchasers (Ucbasaran, Wright and Westhead, 2003).

Social Capital and Liquidity

Entrepreneurs develop new ventures under liquidity constraints (Evans and Jovanovic, 1989). However, in respect of financial resources, serial entrepreneurs are less likely to benefit from the tendency for more experienced entrepreneurs to receive funding through direct social ties (Hsu, 2007). Entrepreneurial experience increases the likelihood of obtaining funding from higher quality and higher status investors, it reduces the time it takes to obtain funding, increases the amount and improves the terms of funding (Hallen and Eisenhardt, 2012, Hsu, 2007, Shane and Stuart, 2002). Many venture capitalists heavily weigh prior experience (Hsu, Haynie, Simmons and McKelvie, 2014). However, set against this, two-thirds of serial entrepreneurs did not even use bank loans as part of their initial capital, and are less likely to use external funding in future ventures (Westhead, Ucbasaran, Wright and Binks, 2005; Wright, Robbie and Ennew, 1997b). Consequently, serial entrepreneurs are not expected to be observed using social capital to raise finance. The lack of access to financial resources may be compensated for in social forms of resource organisation. Serial entrepreneurs with strong tie networks of entrepreneurial families and friends who provide cognitive and psychological support are more persistent entrepreneurs (Stam, Audretsch and Meijaard, 2008).

4.6.5 Summary

Partnering, team formation and wider forms of social capital are positioned as extensions to entrepreneurial human capital, as a means of mobilising additional resources. Team formation is common to all forms and entrepreneurship and habitual entrepreneurs often work with the same team from venture to venture. The requirement for successful teams appears contradictory, needing both team diversity and stable inter-personal dynamics. Stable teams lead to increased

specialisation, and a blinkered view of available options, even in the presence of new information and new opportunities.

Social capital is used to mobilise resources and create real options under conditions of resource shortage and uncertainty. Repeat founders with high quality networks, a reputation and legitimacy are at an advantage in forming ties and exercising influence. However, 'stale' social networks may re-inforce existing patterns of behaviour for subsequent ventures.

For serial entrepreneurs, social networks are less important for raising finance. It is difficult to distinguish between portfolio and serial entrepreneurs in the use of teams and social networks as most evidence relates to the habitual entrepreneurs. There is conflicting evidence on the relative importance of networks to portfolio and serial entrepreneurs. They may be of more importance to portfolios than serials, and more important for acquirers than for starters. Nevertheless, high ability, persistent serial entrepreneurs are expected to demonstrate skills in team and social capital formation and management. Strong tie close personal networks may be more significant for serial entrepreneurs in helping overcome the negative effects of an unsuccessful venture exit.

4.7 Section 7. Venture Exits

Central to this study's research question is how the sequence of starts-up by serial entrepreneurs is influenced by exit from the previous ventures. Exit is very important to the innate talent versus learning debate, and the existence of an entrepreneurial learning curve. If serial entrepreneurs return from failure to start successful enterprises, then they have most likely learned from the failure and augmented their entrepreneurial talent. Selection by talent theorists points to the existence of an elite group of talented serial entrepreneurs for whom 'success breeds success.' They accumulate financial and reputational assets and go on, with the help of VCs to find or create even better opportunities. This group may be complemented by another group who, more often rely on their own resources, can fail, but also learn from failure, recover and re-enter entrepreneurship. It is this form of the process that is perhaps more typical of persistent serial entrepreneurship.

4.7.1 The Importance of Exit

Venture exit is an important entrepreneurial decision and skill set overlooked in the human capital literature. The entrepreneurial process is more than just the creation of a new venture and does not end with creation, it ends with exit (DeTienne, 2010). Economic selection that promotes the division of entrepreneurial labour and utility-maximization explains that the decision to exit is either a sign of entrepreneurial failure, or that the opportunity costs of entrepreneurship compared to waged

labour have become unfavourable. In recent literature, exit is framed more positively as a career choice and the liquidation of a financial investment (Wennberg, Wiklund, DeTienne and Cardon, 2010). There is still, however, a tendency to follow established economic models and associate outright failure with a lack of talent and permanent exit. The existing literature on failure is primarily concerned with the psychological impact of failure on habitual entrepreneurs.

4.7.2 Venture Success or Failure?

The accepted view is that a very small proportion of new ventures are highly successful while most, in contrast, fail (Baron and Henry, 2010). In reality, success and failure may not be such contrasting 'black' or 'white' outcomes. There are a number of reasons for business exit: (1) voluntary exits to acquire a better job or venture, (2) exits due to personal circumstances, (3) exits by selling the firm to harvest wealth or avoid losses and (4) bankruptcy (Birley and Westhead, 1993; Politis, and Gabrielsson, 2007; Wennberg, Wiklund, DeTienne and Cardon, 2010). Failure is most often defined as financial infeasibility or unsustainability (Amaral, Baptista, and Lima 2009; Gimeno, Cooper and Woo, 1997; Headd, 2003). However, research suggests that most terminations are voluntary quits rather than involuntary bankruptcies (Bates, 2005; Taylor, 1999), with approximately one-third of firms profitable at termination (Headd, 2003). Stokes and Blackburn (2002) find that while almost half of closed businesses were ailing, the others were quite evenly split between thriving and simply not growing. Therefore, there is evidence that many outcomes fall into a 'gray-zone' of near-failures and near-successes with different stakeholders having differing views (Rerup, 2006). Business closure is not then merely reacting to financial infeasibility.

Decision Thresholds and Entrepreneurial Persistence

Entrepreneurs have different performance thresholds of actual performance that trigger the decision to terminate their businesses (Gimeno, Folta, Cooper, and Woo, 1997). Evidence shows that persistence is a function of many factors including: a) environmental conditions, b) personal investment, c) previous success and, d) other options available (Staw, 1981). There are mistaken forms of persistence where entrepreneurs fall into cognitive traps. Entrepreneurs may escalate commitment to a losing course of action (DeTienne, Shepherd and DeCastro, 2008). Also, delaying a business failure can help balance the financial and emotional costs of business failure helping the entrepreneur to recover (Shepherd, Wiklund and Haynie, 2009).

4.7.3 Successful vs. Unsuccessful Exits

Exits are clearly an important entrepreneurial and economic activity in the efficient allocation of resources. In addition to matching entrepreneurs to opportunities, exit is required to realise personal wealth. Most of the wealth created by entrepreneurs remains embedded in the firm until harvested (DeTienne, 2010). Failure and success are variously and not always clearly defined in the literature. Official statistics tend to exaggerate exit rates and it is a common practice to assume all discontinuities are failures (Levie, Don and Leleux, 2010). Failure is some legal form of firm mortality, its dissolution through merger, absorption, or outright failure (Gimeno, Cooper and Woo, 1997; Westhead and Wright, 1998a). By implication, through outright failure due to a forced liquidation, the entrepreneur suffers a personal financial loss that is a measure of their innate ability and will cause them to leave entrepreneurship.

Prior research has analysed sales of ventures by habitual entrepreneurs within the reference to the characteristics of the buyer, rather than the motivations of the seller (e.g. Birley and Westhead, 1993). Recently, Wennberg, Wiklund, DeTienne and Cardon (2010) provide the seller's perspective of the exit side of the equation. Their taxonomy classifies possible exit routes for high and low performing businesses. It includes differential levels of failure and success, including exit strategies to avoid outright failure. A successful exit is where a high performing venture is sold as a continuing business, or where the firm is closed and the residual value is distributed to the owner(s). An unsuccessful exit is where there is a distressed sale or liquidation of a low performing venture. However, the exact distinction between successful and unsuccessful can be blurred as an entrepreneur can harvest a business that has limited future prospects to avoid failure.

In a large sample of Swedish new ventures in rapidly growing knowledge intensive industries, Wennberg, Wiklund, DeTienne and Cardon (2010) found successful harvesting exits and unsuccessful distressed exits were roughly equal at 34% and 31% respectively, giving a residual continuation rate of 35%. It is possible to infer from this longitudinal study that in a relatively modern and dynamic sector of the economy the probabilities of continuation, success and failure appear to be roughly equal.

Successful Exits (Business Sales)

The literature on the causes of seriality, (re-entry after exit), confirms the positive impact of a success on the likelihood of return to entrepreneurship. Entrepreneurs who received high average profits from their first venturing spell are disproportionately likely to become serial entrepreneurs (Chen, 2009). Those who exited by selling their ventures are more likely to re-enter using their enhanced financial, social, and human resources and have greater confidence in their own skills

(Amaral, Baptista and Lima, 2011; Ucbasaran, Lockett, Wright and Westhead, 2003; Westhead and Wright, 1998).

Unsuccessful Exit (Failure)

There is both a high level of new venture creation by habitual entrepreneurs, and also high rates of business failure (Headd, 2003; Storey, 1994; Wiklund, Baker, and Shepherd, 2010). Therefore, both portfolio and serial entrepreneurs are likely to have experience of failure. However, serial entrepreneurs on average are more likely to have exited more businesses than portfolio entrepreneurs and have more experience of failure (Ucbasaran, Westhead, Wright and Flores, 2010; Westhead, Ucbasaran, Wright and Binks, 2005). In Germany 18% of serial founders previously founded a firm that went out of business (Wagner, 2003). In a survey of 367 small business exits by Stokes and Blackburn (2002) 33% started another business compared to 38% who retired or returned to employment, leaving 29% who were probably portfolio entrepreneurs who had another existing business with which they could continue.

Some entrepreneurs may have an imperative to learn, or to simply try again. The assumption that entrepreneurs always have a choice between waged work and entrepreneurship is questioned. Many founding entrepreneurs may perceive no other career alternative than to start another company (Starr and Bygrave, 1992). Habitual entrepreneurs are 'misfits' cast off from waged work, and so have no choice but to re-enter (Evans and Leighton, 1989). Age can also prevent an easy return to waged work (Stam, Audretsch and Meijaard, 2008).

It should also be noted that firms do not close at uniform rates. The probability of business failure (a mismatch between the opportunity and the entrepreneur) decreases with the age of the business (Hall, 1995; Holmes and Schmitz, 1995; Nucci, 1999). These studies show: a) closure rates are highest in the first few years after start-up and decline as the venture ages, b) closure rates are highest in smaller firms and c) some specific sectors are more prone to closures than others. However, Wennberg, Wiklund, DeTienne and Cardon (2010) find that firm age is higher for distressed exits, between 4 and 5 years old, than for harvesting exits at between 3 and 3.2 years. This contradictory evidence may again be due to particular variables at play in their dataset drawn from high growth industries.

4.7.4 Negative and Positive Effects of Failure

Following the general theme of the assets and liabilities of habitual entrepreneurship, a great deal of the literature is devoted to assessing the negative and positive effects of failure.

Negative Effects

If the costs of failure (i.e., financial, psychological, social, etc.) are too high entrepreneurs may choose to exit their entrepreneurial careers (Ucbasaran, Shepherd, Lockett and Lyon, 2012).

Returning entrepreneurs then must overcome the consequences of failure. There is evidence from Simmons, Wiklund and Levie (2014) that if stigma is attached to failure, then entrepreneurs are less likely to start new firms autonomously and are more likely to defer their entry, so as to distance themselves from the failure event. While not all entrepreneurs experienced loss of self-esteem and felt grief (Jenkins, Wiklund, Brundin, 2014), it can still be a traumatic experience, that hinders learning and reduces the motivation to try again (Cope, 2011; Hayward, Forster, Sarasvathy, and Frederickson, 2010; Shepherd, 2003). Lost reputation reduces access to capital (Cardon, Stevens, and Potter, 2011). Failure reduces the optimism of habitual entrepreneurs (Ucbasaran, Westhead, Wright and Flores, 2010). If they return to entrepreneurship, habitual entrepreneurs may select less challenging goals and less risky and less innovative opportunities (Ucbasaran, Westhead and Wright, 2009).

Positive Effects

Failure may also stimulate motivation to try again with greater effort. Far from constraining future actions, failure can engender emancipatory learning outcomes (Cope, 2011). A mixture of failures and successes can provide greater cognitive diversity upon which the individual can draw in subsequent activity (Gustafsson, 2006). Successful serial entrepreneurs turn to their past accomplishments for reassurance (Cope, 2011). Behaviours are revalued, some are abandoned, new knowledge is sought and new solutions developed (Ucbasaran, Westhead and Wright, 2009).

Failure may act as a cognitive cure for a variety of mental traps, such as self-serving bias and over confidence (Baron, 1998). Following attribution theory Wiener, (1985), Ucbasaran, Wright, Westhead and Busenitz, (2003) postulate that repetition of the entrepreneurial process is more likely if success and failure are attributed to factors over which they have control, or if beyond their control are regarded as transitory and limited in their effects. They conclude habitual serial entrepreneurs are therefore more likely to be optimistic, adaptable, and resilient in adversity, while maintaining confidence. Indeed Politis and Gabrielsson (2007) provide evidence that experienced entrepreneurs have a more positive attitude toward failure. Confidence creates positive emotions that facilitate entrepreneurial resilience (Hayward, Forster, Sarasvathy, and Fredrickson, 2010).

Ucbasaran, Westhead and Wright, (2009) following the theory of self-definitional goals (Schultheiss and Brunstein, 2000), postulate that failure in a domain highly relevant to an entrepreneur's self-

identity means that they may be highly motivated to try again. Prospect theory (Kahneman and Tversky, 1979) also proposes that negative framing (i.e. attribution of a loss condition) increases the attractiveness of pursuing a risky option of continuing (i.e. re-entry) to win back losses. Hsu, Wiklund and Cotton (2015) provide evidence that negative framing may explain the re-entry intentions of serial entrepreneurs in the face of financial loss.

4.7.5 Failure: Portfolio versus Serial Entrepreneurs

There appears to be a significant difference between portfolio and serial entrepreneurs in their reaction to failure. Portfolio entrepreneurs are less likely to report comparative optimism following failure, while serial entrepreneurs do not appear to adjust their comparative optimism following failure (Ucbasaran, Westhead, Wright and Flores, 2010). A supportive store of social capital of families and friends increases the likelihood of re-entry (i.e. persistence) of serial entrepreneurs who have experienced failure (Stam, Audretsch and Meijaard, 2008).

Comparative performance studies shed little light on the effects of failure. There are no significant performance differences between businesses owned by entrepreneurs who have failed and those who have not (Ucbasaran, Westhead, Wright, 2006). On the other hand there is some evidence from Gompers, Kovner, Lerner and Scharfstein (2010) of venture capital backed ventures where success is measured very narrowly as making an IPO, that failed serial entrepreneurs do not learn from failure as much as successful entrepreneurs learn from success. Perhaps serial entrepreneurs do not learn from failure, or failure is not significant in respect of future performance. The majority return because they have learned enough to do so and/or they have managed to exit and preserve enough resources to start again (Stam, Audretsch and Meijaard, 2008).

Success, Failure and Learning by Serial Entrepreneurs

As entrepreneurship involves trial-and-error experimentation to resolve uncertainty and ambiguity, then failure is likely (McGrath, 1999). Learning from failure augments entrepreneurial talent and facilitates re-entry (Stam, Audretsch and Meijaard, 2008). The intelligent 'effectual' serial entrepreneur learns both from their failures and successes and manages rather than avoids failure (Sarasvathy, 2001). Therefore, career entrepreneurs are not just passive subjects of events (Sarasvathy, Menon, and Kuechle, 2013).

4.7.6 Summary

Serial entrepreneurship requires exit and re-entry into entrepreneurship. Serial entrepreneurs develop human capital in the form of the ability to exit from both successful and unsuccessful

ventures and return to entrepreneurship. Serial entrepreneurs are likely to have exited more businesses than portfolio entrepreneurs and are more likely to have experienced failure. A successful exit liquidates an existing venture at a high premium to book value and finances the re-entry. Nevertheless, many persistent serial entrepreneurs must also be able to recover from failure. Failure is seen as essential for learning as part of a wider system of economic development and innovation by trial and error. The focus on failure and its negative connotations may be taking too narrow a view.

It is difficult to divide exits into successful and unsuccessful. Both the mixture of rents earned over the life of the business and its value on exit have to be taken into account. An unequivocal success is some form of sale as a going concern. An unsuccessful exit is a forced liquidation that results in economic losses. Between these two extremes there are shades of grey, and half of all businesses are still financially viable when closed. Evidence suggests that a new venture in a dynamic sector has an equal chance of a successful or unsuccessful exit. Failure is more likely in the early years of a venture although not all the data agrees.

Academic researchers focus on the emotional and psychological effects of failure. By reducing confidence, reputation and access to capital, failure may delay return, and the returning entrepreneur may be less innovative and select less challenging goals. On the other hand, failure can cause a revaluation of prior knowledge, and depending on how the failure is attributed and framed, stimulate resilience, confidence, adaptability and determination to win back losses. Serial entrepreneurs appear to be more optimistic in the face of failure than portfolios.

Having failed, serials should not pursue similar opportunities, or at least not without making significant changes using what they have learned. If they have succeeded before, they are likely to try to incorporate those elements that brought success into the next venture. Overall, exit is a very important feature as it provides the principal difference between 'cyclical' serial and 'permanent' portfolio entrepreneurship.

4.8 Section 8. Theory of Portfolio Entrepreneurship

This section of the detailed literature review presents a clear divergence in the theory of habitual entrepreneurship between serial and portfolio entrepreneurship. Portfolio entrepreneurship is regarded as better explained by the resource-based theory of the firm than the 'classical' theory of individual entrepreneurship. This division breaks down further the heterogeneity of entrepreneurial behaviour into distinct forms. Furthermore, it provides a useful platform for understanding serial entrepreneurship.

4.8.1 Theory of the Firm and Entrepreneurship

As entrepreneurial opportunities are usually converted into a stream of rents through the start-up of a firm, opportunity based theories of entrepreneurship concentrate on opportunity recognition and the development of a business concept (e.g. Ardichvili, Cardozo and Ray, 2003), and give way to the theories of the firm for pursuit and exploitation.

The resource-based theory of the firm has been used to explain the 'multi-firm-like' behaviour of portfolio entrepreneurs. Portfolio entrepreneurship assumes continuous and simultaneous ownership and control of more than one business firm. Theory predicts and evidence shows their entrepreneurial instincts become confined to a narrow corridor of related diversified firms, owned and controlled in parallel.

The general resource-based view is not exclusive to portfolio entrepreneurship. McGrath (1996) and Gruber, MacMillan, Thompson (2013) use the resource-based theory of the firm harnessed to path dependency and evolution economics to explain Ronstadt's (1998) opportunity and Venkataraman's (1997) knowledge corridors for all types of habitual entrepreneur. The leading researchers in the field, (e.g. Ucbasaran, Westhead and Wright, 2001; Ucbasaran, Wright, Westhead and Busenitz, 2003), adopt Alvarez and Busenitz's (2001) resource theory of entrepreneurship. The resource-based theory of the firm is deployed in a variety of different scenarios, for example by Wiklund and Shepherd (2008) to predict the mode of entry for firm creation used by novice and habitual entrepreneurs.

Resource-Based Theory and Entrepreneurship

In the theory the firm is a set of resources (Penrose, 1959). Resources and products are two sides of the same coin (Wernerfelt, 1984), the equivalent to means and ends in the entrepreneurial opportunity framework. In other words, by describing the resource profile of a firm, it is possible to determine the optimal product-market activities, i.e. the equivalent of actionable entrepreneurial opportunities. Resources that have unique capabilities increase competitive advantage and thereby the long term profit of the firm (Amit and Schoemaker, 1993; Barney, 1991). Researchers seek to identify the means by which new ventures can accumulate and develop resources (e.g. Dierickx and Cool, 1989; Haber and Reichel, 2007; Lichtenstein and Brush, 2001).

The weakness in the theory of the firm is that the individual entrepreneur is absent (Baumol, 1968). In response, resource-based theorists simply include the entrepreneur's specific human resources within the orbit of the firm. These include coordinating knowledge, cognition, and opportunity

discovery (Alvarez and Busenitz, 2001). Entrepreneurship is a 'dynamic capability' (Teece, Pisano and Shuen, 1997). This encompasses firm founding (Eisenhardt and Martin, 2000), and all higher-level competences that integrate, build, and reconfigure internal and external resources (Teece, 2007), including, spotting the next big opportunity (Teece, 2012).

In entrepreneurship theory that predates Smith's (1776) *Wealth of Nations*, the individual entrepreneur not the firm is the central focus. Entrepreneurs may begin with no more resources than themselves and an idea for a future opportunity. It is the entrepreneur who profits from new opportunities as a reward for risk taking and exercise of judgment in the coordination of scarce resources (Casson, 2003). Entrepreneurship is not a minor refinement of the theory of the firm, but represents a radical change, because entrepreneurs exploit differences of perception about information to their own advantage (Casson, 2005). It is the entrepreneur who exercises agency and creates the firm to implement his or her opportunity-vision and choice of means-ends combination.

Economic theory interposes the firm between the individual and the market and 'must' organise a firm to discover their business acumen (Jovanovic, 1982; Lucas, 1978), when in fact the firm exists only because it is more economically efficient to use semi-permanent contracts than rely on fluctuating market prices to organise transactions (Coase, 1937; Williamson, 1981). The transformation of an idea into an organisation requires the entrepreneur to acquire suitable resources (Aldrich and Martinez, 2001). The legal entity of the firm assists the entrepreneur to contract resources to generate rents and also appropriate some rents for themselves (Alvarez and Barney, 2004). These twin tasks of value creation and value appropriation occur under conditions of uncertainty because the economic value of an opportunity is not known; even probabilistically (Alvarez and Barney, 2005). Opportunity exploitation will be more difficult and costly for entrepreneurs with fewer resource endowments (Alvarez and Barney, 2004), and as in human capital theory, greater capital implies higher outputs and higher returns.

In reality, the relationship between the entrepreneur and their firm is synergistic – a partnership. Resources must be reconfigured by the entrepreneur in a value-added manner in order to yield a competitive advantage capable of generating future economic rents (Newbert, 2005).

Entrepreneurs, especially those with prior start-up expertise, must then impose themselves and their visions (Witt, 1998; 2007) on the firms they create, concentrating decision making powers to control all resources (Alvarez and Barney, 2005). Therefore, while dynamic capabilities are thought to be processes executed at the firm level, the 'dynamic capability' of new firm formation is a process executed at the individual level (Newbert, 2005). This is because the entrepreneur retains ownership, control and active involvement of the firm in order to achieve her or his objectives.

In resource theory, firm creation and new entry is considered from the perspective of an established semi-permanent organisation. The firm hires dynamic individuals to coordinate resources on the firm's behalf. It is more concerned with competition between existing firms than the creation of new ones. An example of this viewpoint is Helfat and Lieberman's (2002) influential work that shows that firms only enter markets if they have suitable resources; critical resource gaps are filled using acquisitions, joint ventures, or parent company spin-offs. Within their organisational nomenclature, portfolio entrepreneurs would be viewed as practising a form of parent-company spin-off, and thereby, fit neatly within the resource-based view. Clearly, start-stop-start serial entrepreneurs who liquidate the firm, and therefore are temporarily without a firm, perhaps return to employment for a while, but can still act entrepreneurially, do not fit this pattern.

4.8.2 Theoretical Principles: Path Dependencies, Evolution, Ecology and Resources

Path Dependency Theory

Habitual entrepreneurship involves a sequence of ventures that form a career path or trajectory. Researchers using a resource-based theory of the firm perspective consider the implications of path dependencies arising from inherited resource endowments on a variety of entrepreneurial processes including: opportunity recognition (Alvarez and Barney, 2007), procedural knowledge (West and Noel, 2009) and organisational learning (Dencker, Gruber and Shah, 2009).

Path dependency theory (e.g. Arthur, 1989, 1994; David, 1985) examines self-reinforcing and non-linear economic and technological phenomena over extended periods of time. Resource endowments are a natural trajectory embedded in a firm's resource base (Barney, 1991; Peteraf, 1993). Those that form core competencies are a source of competitive advantage (Prahalad and Hamel, 1990). In evolutionary economics (Nelson and Winter, 1982), routines, processes and other organised activities are also resources with the potential for path dependent effects. Routines are more heavily based on interpretations of the past than on interpretations of the future. Evolution is a form of learning whereby the firm gropes toward more profitable resource combinations (Nelson and Winter, 1982). Path dependency does not require increasing returns to scale, only 'irreversibility', i.e. a substantial cost to undo a previous resource allocation decision (David, 2007). In addition, though not required for path dependency, investments in durable assets where the fixed costs are 'sunk' (i.e. not recoverable) can impact future options and decisions such as inhibiting the factor's exit from a firm (Peteraf, 1993). Even information as an infinitely durable asset (Arrow, 2000) causes micro-level irreversibility which can also give rise to path dependent dynamics (David,

2007). In recent explorations of firm foundation by Gruber (2010) corridors are formed and maintained by path dependent processes.

Evolutionary Economics

Evolutionary economics provides an explanation of how resource heterogeneity arises (Helfat and Peteraf, 2003). Pre-entry knowledge not only has a direct effect on firm survival, it has an indirect and ongoing effect as well. New routines are related to existing ones (Nelson and Winter, 1982) and products, complementary assets and routines are linked and co-evolve together (Helfat and Raubitschek, 2000). Evolutionary economics has clear parallels with other path orientated theories of entrepreneurship, including the corridor principle, real options theory, and prior knowledge corridors. Of further significance, path dependencies can be found elsewhere in relevant theory. In entrepreneurial learning, successful behaviour is reinforced by feedback (Minniti and Bygrave, 2001). In cognition, absorptive capacity (Cohen and Levinthal, 1990) and cognitive templates (Baron, 2006) may also engender irreversibilities. These cognitive path dependencies may explain why economic search is narrowed to familiar channels (Fiet, 1996). While Nelson and Winter (1982) follow Kirzner (1973) and adopt 'diffuse alertness' as an evolutionary force for the discovery of new information, it is argued here that both search and alertness are channelled by prior experience into information corridors (Venkataraman, 1997).

Organisational Ecology

Organisational ecology theorists (Hannan and Freeman, 1984; 1989) also regard initial endowments as strongly path dependent by causing structural inertia and a lack of agility at the firm level. Firm population density in particular industries and market niches increases over time and determines founding and failure rates. Entrepreneurs copy existing business forms when there are strong evolutionary selection and retention forces (Hannan and Carroll, 1992) that have cognitive and socio-political legitimacy (Stinchcombe, 1965). Most entrepreneurs are expected to just replicate and reproduce the structures, competencies, and routines of pre-existing organisations (Aldrich and Martinez, 2001). Both portfolio and serial entrepreneurs will be observed 'following the herd', either replicating existing businesses or founding additional firms in closely related niches.

Resource Bundles

Resources should not be viewed as easily divisible fungible tangible assets. Social capital qualifies as an inimitable resource in being specific to the parties involved, providing a barrier to access by others (McGrath, 1996). Firms are tied to resources and resources to firms. Resource productivity is attributable to the context of the firm. Co-specialised resources (Teece, 1986) are not as productive

outside a particular firm; the firm and the factor are essentially a 'team' (Peteraf, 1993). Resource mobility and resource entry barriers (Rumelt, 1984; 1987) serve to isolate groups of similar firms in an industry. A location can also be an imperfectly imitable physical resource (Barney, 1991) that has isolating and entry prevention properties.

From the intra-firm perspective, resource bundles change as a new venture grows (Brush, Greene and Hart, 2001), and entrepreneurs will concentrate on the reorganisation and reconstruction of 'salient' resources critical for firm health and growth (Lichtenstein and Brush, 2001). Resources and organisational capabilities follow a lifecycle of: entrenchment, renewal, replication, redeployment, recombination and retirement (Helfat and Peteraf, 2003). Changes in the lifecycle stage are triggered by events; these could include new opportunities, new competitors, the loss of resources, exit, or outright failure. Firms may combine exit from one product-market with entry into another via capability redeployment or recombination, thus obtaining inter-temporal economies of scope (Helfat and Eisenhardt, 2002). Replication applies to a different geographic market for the same product or service whereas 'redemption' involves a market for a different, although still closely related product or service (Helfat and Eisenhardt, 2002). In one study, the gradual evolution of salient resources is associated with survival and growth, while discontinuous change is likely to lead to firm failure (Lichtenstein and Brush, 2001).

The resource-based theory of the firm as an explanatory tool has been challenged as conceptually vague in specifying the mechanisms by which resources actually generate competitive advantage (Foss and Knudsen, 2002; Peteraf and Barney, 2003). A sustainable competitive advantage is infrequently achieved in dynamic and high velocity markets (Eisenhardt and Martin, 2000). Part of the problem is that resources are difficult to measure and many are intangible (Barney, Ketchen and Wright, 2011).

Overall, all types of repeat venture creators constrained by resources positions can be expected to show gradual evolutionary change from venture to venture. Radical departures from the current path are likely to be unusual and often unsuccessful.

4.8.3 The Resource-Based View: Portfolio Entrepreneurship

The resource-based theory of the firm is used to explain portfolio entrepreneurship. Diversification or business duality (Perks and Medway, 2012) occurs when one business is developed alongside another. There are two elemental forms of diversification, concentric (related) and conglomerate (unrelated). Concentric related diversification is close to the original business, launching related products or services within the same general industry. Conglomerate diversification involves

completely different activities with a completely different technology, oriented towards different markets. One benefit of unrelated diversification is the spreading of risk as conventionally explained by Samuelson (1967) for investment portfolios (Sarasvathy, Menon, and Kuechle, 2013).

The degree of relatedness or 'coherence' among a firm's products determines the nature and extent of the scope of the firm (Dosi, Teece and Winter, 1992). Although patterns of diversification will vary from industry to industry because of the differences in the possibility of transferring the firm's know-how to related activities, there will be a high degree of coherence (Teece, Rumelt, Dosi, and Teece, 1994). Synergies, complementarities and economies of scale and scope are the most cited reason for why firms diversify. Scale economies arise from lower marginal costs of producing and marketing one product; scope economies arise from producing and marketing a variety of products that can share resources and processes. Synergies arise from a combination of activities and resources that magnify each other's effects.

Following Rumelt (1984), synergies are stressed by Porter (1980; 1985); business units that support and complement each other by sharing resources and transferring skills and expertise can have a value creating effect. However Teece (1980; 1982) states that only if economies of scope are based on specialised and indivisible resources that are used recurrently, is multi-product diversification efficient and value creating. In short, the more related the markets, the larger the profit potential, due to exploitation of economies of scope and the transfer and leveraging of resources across distinct businesses. Peteraf (1993) concludes that since specialized resources also tend to be relatively scarce, the model would predict higher rents for narrow diversifiers.

4.8.4 Portfolio Entrepreneurs: Resource-Based Diversifiers

Recently, the theory of portfolio entrepreneurship has become characterised as a form of diversification (Parker, 2014), where portfolio entrepreneurs recognise and pursue opportunities that diversify their portfolios of businesses. Parker postulates that both related and unrelated diversification affords portfolio entrepreneurship a clear economic advantage over serial entrepreneurship. This view has a solid basis in the literature.

Scott and Rosa (1996) direct attention to the firm as a source of new firms. Rosa (1998) and Rosa and Scott (1999) demonstrate that related entrepreneurial diversification from opportunities arising from existing ventures is routine, associated with growth and based on a corporate managerial strategy. Iacobucci, (2002) and Iacobucci and Rosa, (2005) show that the growth process of entrepreneurial firms is primarily driven by diversification. Their study of small regionally based Italian manufacturers finds that more than half of the firms set-up or acquired after the original one

perform similar activities; i.e. they are the result of the progressive occupation of market segments within the original sector of activity, using horizontal expansion rather than vertical integration.

The portfolio entrepreneur is then an organiser who masters dependencies between ventures rather than someone needing independence (Iacobucci, 2002). The study shows that they are very unlikely to engage in unrelated diversification using conventional corporate strategy. They also present some evidence for a dynamic evolutionary process where the number of companies expands in phases of entrepreneurial activity and contracts to consolidate established businesses (Iacobucci and Rosa, 2004).

The Diversification Strategies of Portfolio Entrepreneurs

Their empirical research also lists the main diversification strategies pursued by portfolio entrepreneurs:

- a) to raise the share of existing products within the same geographic area (market penetration);
- b) to serve new, foreign markets (internationalisation);
- c) to expand in market segments within the same sector (horizontal or vertical differentiation);
- e) to enter into new sectors related to the physical and human resources of the core business (related diversification);
- d) to enter into new sectors supported by government sponsored programmes (diversification);
- e) to enter new sectors as a survival mechanism (diversification).

Interestingly, for this thesis, these studies specifically exclude the phenomenon of serial founders and companies that were set-up but subsequently closed or were sold, i.e. were unsuccessful during the life of the group. Therefore, the theory of portfolio entrepreneurship derived from these studies is not representative of the behaviour of serial entrepreneurs, and only includes successful retained firms.

The Drivers of Venture Relatedness for Portfolio Entrepreneurs

A review of other studies of portfolio entrepreneurs shows that portfolio entrepreneurs make mainly related diversifications, be they small farm businesses (Carter, 1998) or successful 'local hero' Scottish entrepreneurs (Rosa 1998). Potential opportunities for diversification considered by farmers in Finland (Alsos and Kaikkonen, 2004) and Norway (Ljunggren, Pettersen, 2003) were close to the existing farm business.

An important feature of farm businesses is the availability of physical assets in the form of farmland and buildings. These resources are crucial in extending strategic growth options (Carter, 1998). Substantial resource transfers take place of knowledge and organisational and physical resources, mediated both by the resource richness of the farm and the degree of similarity in the activities of the farm and the new venture (Alsos and Carter, 2006). Farm studies illustrate the 'centrifugal force' exerted by significant inherited physical resources, and the specialist industry skills required to operate them. Farm assets are location specific, attached to an industry and culture of farming that goes back generations. Their costs are most likely sunk, and there are considerable psychological and economic switching costs involved in leaving farming. New business ventures are closely related to the farm business, in terms of horizontal or vertical expansion. Similarly, Perks and Medway (2012) show that there is reluctance among UK farmers to go beyond incremental developments and a reluctance to network beyond their existing community for resources.

Unrelated Diversification

Kolveried and Bullvag (1993) and (Iacobucci, 2002; Iacobucci and Rosa, 2005) observe that unrelated diversifications are often a survivalist mechanism. This seems to run counter to the matching principle of the economics of entrepreneurship. In some studies, unrelated businesses are interpreted as transitioning from 'immature' to 'mature' entrepreneurship and the pursuit of better opportunities (Rosa 1998; Schollhammer, 1991). The few examples of unrelated diversifications fully documented in the literature are attributed to government programmes encouraging farm diversification (Alsos and Carter, 2006).

4.8.5 Summary

The resource-based theory of the firm encroaches on habitual entrepreneurship from two separate directions; first by defining all contributions of individual entrepreneurs as resources, and second as the best theory of portfolio entrepreneurship. Portfolio entrepreneurs are best placed to exploit related diversifications. Portfolio entrepreneurs rarely make unrelated diversifications except as a survival mechanism. Overall, studies of portfolio entrepreneurs do not suggest frame-breaking innovation and Schumpeter's creative destruction of industries. Portfolios occupy niches anchored by particular resource combinations.

On the other hand, serial entrepreneurs clearly exhibit a different set of behaviours in selling, liquidating, and in some cases abandoning ventures and the resources they own and control, to start afresh. The resource-based theory of the firm appears not to be as relevant in situations where the serial entrepreneur is between ventures when there is no firm.

4.9 Section 9. Developments in the Theory of Serial Entrepreneurship: Pseudo Diversification and Recycling

The comparison between the developed theory of portfolio entrepreneurship and our knowledge of serial entrepreneurship illustrates theoretical and empirical gaps in our understanding of serial entrepreneurship, and possible future developments.

4.9.1 Pseudo Diversification

However, portfolio entrepreneurs may not have all the advantages of diversification to themselves. The careers of serial entrepreneurs may exhibit a form of pseudo (i.e. ersatz) diversification. Effectuation theory (Sarasvathy, 2001) proposes that experienced entrepreneurs take a prototyping evolutionary approach using currently available resources, namely: who I am, what I know, and whom I know, to develop ventures in the face of uncertainty. The theory's affordable loss principle protects the entrepreneur from over-commitment (Staw, 1981), and allows her or him to bounce back from failure (Dew, Sarasvathy, Read and Wiltbank, 2009). Small-scale entry provides a real option to invest heavily if early returns are promising (Sarasvathy, Menon and Kuechle, 2013). Effectuation deploys experimental and iterative learning techniques, where trial-and-error becomes a natural part of the new venture creation process (Politis, 2008). Sarasvathy, Menon and Kuechle (2013) posit that serial entrepreneurs learn sequentially from experience, transferring the lessons of both success and failure. This intelligent and hence cognitive process puts the individual entrepreneur at the centre of the action to ensure that new ventures incorporate the lessons of previous ventures. The learning and transfer process 'infects' subsequent ventures and there may be more failures to manage before a successful enough formula is developed.

4.9.2 Serial Diversification: Incubation and Recycling

How serial entrepreneurs are affected by resource and evolutionary economics is likely to be different, remaining in the realm of their own human and social capital, combined with a personal ability to recycle resources from previous ventures.

A basis for understanding the process of serial entrepreneurship is incubation, the process by which nascent entrepreneurs are incubated by employers (Cooper, 1985; Cooper and Dunkelberg, 1986; Lamont, 1972). Incubation predicts that the next venture is strongly related to the 'host' incubator. Incubation demonstrates how transfers of real and inimitable resources are made between discrete ventures, including employees and future partners.

In all five case studies of Scottish technology entrepreneurs by Mason and Harrison (2006), the entrepreneurs started businesses in the same sector as their former employer. Two became serial founders of businesses very similar in nature to their first venture. They observed a process they call ‘entrepreneurial recycling’ where a variety of resources were recycled after a previous venture was disbanded. If this is the actual process of ‘pseudo’ diversification, then serial entrepreneurs accumulate learning that is not tied to an existing firm and gives serial entrepreneurs preferential access to known (i.e. de-risked resources) whose costs are largely sunk. These economic advantages for the finding and exploitation of new opportunities may be equivalent to those of portfolio entrepreneurs. Of additional significance, exiting serial entrepreneurs are unencumbered by the liberating or stifling presence of a firm. They can create competitive advantage as an act of imagination embedded in a new opportunity.

4.9.3 Theory of Serial and Portfolio Entrepreneurship: A thematic framework

The review and analysis of the literature suggests a new perspective on the theory of serial and portfolio entrepreneurs. Habitual entrepreneurs are subject to centripetal forces that keep them on a narrow path of venture development. Portfolio entrepreneurs retain some ventures, and are permanently engaged in the ownership and control aspects of entrepreneurship. They are able to find and exploit related opportunities in a low-cost process that seems natural, bounded by the resource positions and real options of current ventures.

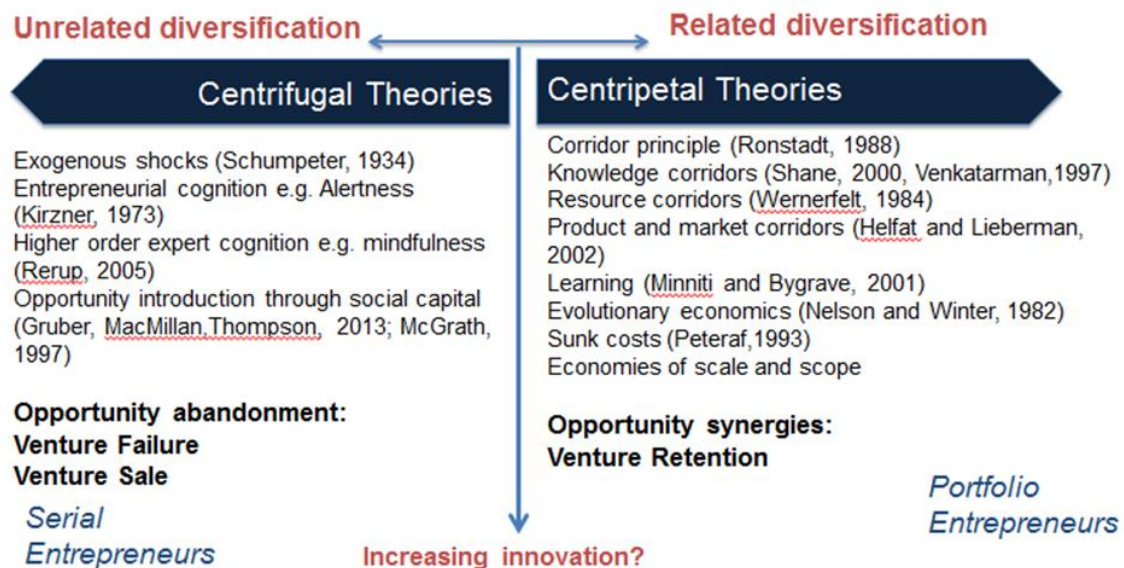


Figure 4.3 Theory of Serial and Portfolio Entrepreneurship: Thematic Framework

In contrast, venture exit and re-entry is the distinguishing feature of serial entrepreneurship. Exit provides a centrifugal force away from existing patterns of behaviour. Serial entrepreneurs exiting

after the sale of a successful venture will have considerable financial resources on hand to find and exploit new opportunities. If innovation and economic value are related, and the matching principle holds, they will seek high quality innovative opportunities of at least similar value to the enterprise just sold. For those who exit after a negative outcome, a closure or legal bankruptcy, they may abandon the opportunity and re-enter via another opportunity with low exploitation (i.e. entry) costs. This synthesis and postulates are depicted in Figure 4.3 above. Overall, serial entrepreneurship requires the exercise of core entrepreneurial abilities to find and exploit new opportunities.

4.9.4 Summary

The advantages of the control of 'ready to hand' resources are not exclusive to portfolio entrepreneurs. Serial entrepreneurs are also able, through recycling of both intangible and tangible resources, to achieve similar advantages of related diversification. It is best to understand that the entrepreneur and the firm have a symbiotic relationship, and that the career of a serial entrepreneur is separate from the path taken by the firm. Of further significance, new firm creation and market entry by returning serial entrepreneurs is different from a diversifying firm or multi-firm portfolio entrepreneur because it is unencumbered by the existence of a firm.

Nevertheless, the theoretical frameworks used throughout entrepreneurial research have path dependencies and predict inertia and only incremental evolutionary change. Existing 'sunk' investments in major assets including an individual's prior knowledge and other cognitive resources are strong economic reasons to expect inertia in the careers of a serial entrepreneur. What seems to be missing from resource centric evolutionary theory is how entrepreneurs connect with new innovative opportunities required to create new forms of wealth. It is proposed here that exit provides an impetus for successful serial entrepreneurs to innovate and unsuccessful serial entrepreneurs to transfer to new opportunities.

4.10 Chapter Summary

While there is a wide variety of theoretical frameworks and empirical evidence pertinent to the study of serial entrepreneurship, much is still to be understood. As demonstrated in chapters 2 and 3 and detailed in this chapter the area is still developing. The results of the literature review are used to generate the detailed research questions in chapter 5.

CHAPTER 5

Research Questions, Constructs and Measurement

This chapter explains the development of the exploratory research questions of the thesis, responding to calls for further research and synthesising key themes in the literature. The chapter defines additional key research constructs and measurement techniques required to investigate venture creation from an opportunity perspective.

5.1 Section 1. Research Themes, Questions and Postulates

A key observation from the literature on habitual entrepreneurship is that there are differences between portfolio and serial entrepreneurs. The collective understanding of portfolio entrepreneurs is much deeper than that of serial entrepreneurs. This imbalance provides the opportunity to address gaps in the literature by exploring the sequence of ventures that form the careers of serial creators of new firms. The exploration is best served by qualitative research that can look behind the aggregate patterns presented in recent quantitative studies and can explore the causal processes at work.

5.1.1 Principal Research Question: Career Trajectories and Transitions

The focus of the research is the career path of serial entrepreneurs. How are the ventures of serial starter entrepreneurs related to one another? How are the 1st, 2nd and nth start-up ventures related?

Since Starr and Bygrave (1992) posed this research question, many other researchers have asked for studies of the life-cycle of all ventures founded by habitual entrepreneurs (e.g. Carter, 1999; Carter and Ram, 2003; Westhead, Ucbasaran, Wright and Binks, 2005; Wright, Robbie and Ennew, 1997a; Ucbasaran, Westhead and Wright, 2006). Many researchers want to understand the processual and contextual elements of habitual entrepreneurship (Ucbasaran, Westhead and Wright, 2001; Zahra and Wright, 2011; Unger, Rauch, Frese and Rosenbusch, 2011).

The literature review provides four main themes that provide further exploratory research questions to be pursued when examining the careers of serial entrepreneurs.

Theme 1. Serial entrepreneurship is a form of economic selection. Serial entrepreneurs will be matched with opportunities that best fit their entrepreneurial human capital. Human capital is their innate talent, and it is not a fixed quantity, it is supplemented by learned abilities that together form what we recognise as expertise. By definition the careers of serial entrepreneurs lack continuity.

For them exit from and re-entry to firm ownership and control reveals the selection and matching process. Failure is considered likely and serial entrepreneurs must have the ability to deal with and learn from both failure and success.

Theme 2. Theory and evidences suggests serial entrepreneurs will follow a relatively narrow path of related ventures. However, from what is commonly known about exit legal agreements and liquidity theory it is postulated that exit may make serial entrepreneurs more likely to change direction and follow an unrelated corridors.

Theme 3. If serial entrepreneurs create a high proportion of new firms then what is their role in developing innovation? Do they follow previous patterns, or copy existing forms or bring genuinely new forms of means-ends combinations into existent? When serial entrepreneurs cross into unrelated corridors it may be to pursue or reuse innovations.

Theme 4. Portfolio entrepreneurship is considered theoretically and empirically an economically superior form of entrepreneurship, compared to both serial and novice entrepreneurship. However, we still need to know more about the economics of serial entrepreneurship.

5.1.2 Theme 1. Selection Theory

The start-ups of serial entrepreneurs can be expected to show the economic matching process at work. Persistent serial entrepreneurs will select progressively better opportunities and exit current ventures and start-up new ventures to exploit them (e.g. Lucas, 1978; Jovanovic, 1982; Holmes and Schmitz, 1995; Plehn-Dujowich, 2010).

Researchers want to see longitudinal qualitative studies to explore transitions from novice into serial or portfolio entrepreneurship (Cater and Ram, 2003; Ucbasaran, Westhead and Wright, 2008; Westhead, Ucbasaran, Wright and Binks, 2005). Transitions into serial and portfolio entrepreneurship as well as into paid employment, and the impact of the number of business failures would represent valuable research opportunities (Ucbasaran, Westhead, Wright and Flores, 2010).

In selection theory, entrepreneurs' attitudes towards failure are a neglected area of inquiry (Politis, 2008). Have prior foundings and disbandings allowed them to learn and re-evaluate their strategies and behaviour (Aldrich and Reuf, 2006, Sarasvathy, Menon and Kuechle, 2013; Westhead, Ucbasaran, Wright and Binks, 2005)? Does failure reduce or impede opportunity recognition among experienced entrepreneurs (Ucbasaran, Westhead and Wright, 2009)? To what extent do their subsequent ventures resemble their failed ventures (Ucbasaran, Shepherd, Lockett and Lyon, 2012)?

Recent thinking posits that business failure is common. Success doesn't lead to success, at least, not straight way. Career success requires cognitively intelligent serial entrepreneurs to learn from both success and failure (Sarasvathy, Menon and Kuechle, 2013). Is venture failure the 'norm', and how do persistent serial entrepreneurs still achieve personal success? To what extent does social capital support serial entrepreneurs when they fail, and facilitate their return to entrepreneurship?

The economic consequences of failure on serial entrepreneurship also need further exploration. Liquidity constrained venture creation is a central economic theory (Evans and Jovanovic, 1989; Stam, Audretsch and Meijaard, 2008). However, the impact of liquidity on the type of opportunity selected in the next start-up has not been studied in-depth. Both successful exits through private sale, private equity investment or IPO, and unsuccessful exits involving unplanned closures, bankruptcy and personal debt, should have profound effects on the timing and mode of re-entry back into serial entrepreneurship. Persistent serial entrepreneurs must be able to manage recovery from failure. On the other hand successfully exiting serial entrepreneurs will have higher liquidity and different options.

Detailed Research Questions

- 1.1 How do future serial entrepreneurs become entrepreneurs?
- 1.2 How do future serial entrepreneurs transition from novice (one time) entrepreneurs to serial entrepreneurs?
- 1.3 What is the impact of failure on venture selection by serial entrepreneurs?
- 1.4 What is the impact of success on venture selection by serial entrepreneurs? E.g. liquidity?
- 1.5 Is venture failure, normal i.e. the 'norm'?
- 1.6 Do serial entrepreneurs learn from failure?
- 1.7 Do cognitively intelligent serial entrepreneurs transfer learning of success and failure to the next venture? i.e. Is there a learning curve, that unpins the development of expertise?

5.1.3 Theme 2. The Nature of Venture Corridors

Following Ronstadt (1986; 1988) there are many calls (Alsos and Kolvereid, 1999, Gruber, 2010; Ucbasaran, Westhead and Wright, 2008) to explore the relationship between prior business ownership experience and new opportunities. What are the origins of opportunities for serial entrepreneurs? Are opportunities given to serial entrepreneurs, or are they initiated by themselves

(Wright Robbie, Ennew 1997a)? Do formal networks (e.g., local enterprise agencies and trusts, accountants, bankers, lawyers, etc.) encourage and support serial entrepreneurs (Westhead, Ucbasaran, Wright and Binks, 2005)?

Early studies (e.g. Schollhammer, 1991; Vesper, 1980) noticed that repeat entrepreneurs were divided into two camps, those who started subsequent businesses in the same industry, and those who did not. The industry relatedness of the start-ups of serial entrepreneurs is rarely a research question, and even less frequently the subject of an explicit study. Portfolio entrepreneurs do on the whole stay within the same industry, making related diversifications, and the resource-based theory of the firm has become the explanatory theory of portfolio entrepreneurship. The review of the relatively few qualitative studies also shows both portfolio and serial entrepreneurs starting businesses in the same or a related industry (e.g. Fiet, 2002; Rosa, 1998).

The evolutionary resource-based theory of the firm explains the related diversifications of portfolio entrepreneurs through theories of the firm's immobile and inimitable resources (e.g. Wernerfelt, 1984; Helfat and Lieberman, 2002; Nelson and Winter, 1982; Peteraf, 1993). Existing resource positions shape the opportunity recognition and pursuit process for the next venture (Alsos, Kolvereid and Isaken, 2006). There are strong theoretical grounds for expecting serial entrepreneurs to create related ventures. Virtually all the main theories of entrepreneurship have either explicit or implicit path dependent qualities, including: learning curves (MacMillan, 1986), the corridor principal (Ronstadt, 1988), knowledge corridors (Shane, 2000; Venkataraman, 1997), real options (McGrath, 1996), economic search (Fiet, 1996), learning through feedback (Minniti and Bygrave, 2001), and cognitive templates (Baron and Ensley, 2006).

Recent empirical evidence indicates that economic selection may also be affected by the division of labour and returns to experience in the same industry (e.g. Chen, 2013; Eesley and Roberts, 2012; Oe and Mitsuhashi, 2013; Toft-Kehler, Wennberg and Kim, 2014). Therefore, most persistent serial entrepreneurs should start subsequent ventures in the same industry. Alternatively, if the early theory of habitual entrepreneurship is correct, there is no consistent pattern, as selection occurs by the contingent interaction of inherited assets and liabilities with situations (e.g. Chandler and Hanks, 1994; Reuber and Fischer, 1994; 1999; Starr and Bygrave, 1991; 1992). There will not be a continuous positive learning curve and returns to experience.

Detailed Research Questions

2.1 Do serial entrepreneurs make closely related diversifications, i.e. stay in the same industry corridor to reuse related prior knowledge and other resources?

- 2.2 How do exit conditions, positive or negative, affect the choice of venture corridor?
- 2.3 What is the source of opportunities?
- 2.4 Do they arise from intentional search or from serendipitous alertness?
- 2.5 What is the role of social capital in this process?

5.1.4 Theme 3. Innovation

Innovation is a central theme in entrepreneurial research, yet the degree of newness has received scant attention in the literature (Dahlqvist and Wiklund, 2012). Individuals with less entrepreneurial ability discover and exploit imitative venture ideas (Samuelsson and Davidsson, 2009). Innovative entrepreneurs recombine new resources to start a new cycle (Schumpeter, 1934). Innovative opportunities are considered to be more valuable (Fiet, 2002; Shane, 2000). However, the array of theories presented above all suggest a sequence of related enterprises. The theory of habitual entrepreneurship lacks those forces that lead to radically new innovative opportunities and new industries as required by entrepreneurship.

While continuous innovation is considered to be the primary competitive advantage of the entrepreneurial firm (Alvarez and Barney, 2001), under the resource-based theory of the firm innovation is likely to be incremental or evolutionary (e.g. Alvarez and Barney, 2010; Hannan and Carroll, 1992; Nelson and Winter, 1982). Some evolutionists conclude that new forms of enterprise can only be accomplished by novice entrepreneurs (Aldrich and Reuf, 2006). Are repeat entrepreneurs able to identify more innovative opportunities (Ucbasaran, Westhead and Wright, 2009)?

We have to rely on exogenous shocks to the system (Schumpeter, 1934), frame-breaking cognitive ability (Kirzner, 1973), systematic economic search (Fiet, 1996), and also the introduction of new opportunities by outside parties (Gruber, MacMillan, Thompson, 2013; McGrath, 1997) to generate innovation by established entrepreneurs. Some researchers into habitual entrepreneurship give prominence to the importance of industry cycles, external contingencies that affect the supply of innovative or imitative opportunities (e.g. Low and Abrahamson, 1997; Low and MacMillan, 1988; Starr and Bygrave, 1992). Different stages of the cycle will affect the type of opportunity selected.

An additional postulate proposed by this thesis is that serial entrepreneurs are more likely to innovate and change corridors following exit. Following selection theory (e.g. Holmes and Schmitz, 1995; Plehn-Dujowich, 2010) serial entrepreneurs abandon poor quality opportunities, or liquidate

good ones to invest in even better ones, in response to changes in the business environment. Both failure and success could be sufficient to overcome the centripetal tendencies to start strongly related ventures and start innovative business in new industries after exit. An assumption of talent theory (e.g. Eesley and Roberts, 2013) is that serial entrepreneurs of high ability are expected to be able to found new ventures in different industries. Do successful serial entrepreneurs confine themselves to markets where they operated before, or are they more successful in new markets (Gompers, Kovner, Lerner and Scharfstein, 2007; Gruber, 2010)?

Detailed Research Questions

- 3.1 Are serial entrepreneurs innovative or imitative?
- 3.2 Are opportunities discovered or created?
- 3.3 Are higher-order cognitive abilities in evidence?

5.1.5 Theme 4. Portfolio vs. Serial Entrepreneurship

Evidence suggests that portfolio and serial entrepreneurship are quite different forms of entrepreneurship. Portfolio entrepreneurs are more interested in wealth creation, while serials are more motivated by independence (Katz, 1994). Portfolios identify more opportunities and plan more businesses (Westhead, Ucbasaran, Wright, 2005b; Westhead, Ucbasaran and Wright, 2009), and are more alert, opportunistic and creative (Rosa, 1998; Westhead, Ucbasaran and Wright, 2005a). Serials appear to fit the craftsmen typology, of specific skills and industry knowledge used to provide solutions for specific problems (Ucbasaran, Wright and Westhead, 2003). Serials have less access to role models, mentoring, social networks and financial resources (Westhead, Ucbasaran, Wright and Binks, 2005). Serials are less likely to have strong networks (Wiklund and Shepherd, 2008). Serials are much less likely to use external finances, even basic bank loans (Westhead, Ucbasaran, Wright and Binks, 2005; Wright, Robbie and Ennew, 1997b). Overall, compared to founders of business clusters, serials are resource poor, likely to be undercapitalised and therefore select smaller start-up opportunities. The firms of portfolio entrepreneurs are larger, grow faster and generate significantly more income than the firms of serial and novice entrepreneurs (Westhead, Ucbasaran, Wright and Binks 2005). Portfolio entrepreneurs are much more likely to engage in exporting than serial entrepreneurs, and to exploit innovative opportunities (Robson, Akuetteh, Westhead and Wright, 2012a; 2012b).

The general superiority of portfolio entrepreneurship over serial entrepreneurship has been posited by Parker (2014). His work has its antecedents in the empirical studies of diversifying farmers (e.g.

Alsos and Kaikkonen, 2004) and small manufacturers (e.g. Iacobucci and Rosa, 2005). Portfolio entrepreneurs are more risk averse than serial entrepreneurs, and exploit synergies through related diversifications. Portfolios are also expected to make unrelated diversifications to reduce the covariance of returns across the whole business group (Parker, 2014). Consequently, portfolio founders are described as less like buccaneering entrepreneurs seeking independence, but as coordinators of dependencies (Iacobucci, 2002). Growth through related diversification is routine for portfolios (Rosa, 1998; Rosa and Scott, 1999b). It may be simply that by interpreting the evidence (e.g. Alsos and Kaikkonen, 2004; Rosa, 1998) they discover closely related low implementation cost opportunities very easily.

These differences require further exploration. For example, do serials as Parker posits take on increasingly risky opportunities? Serials have some economic advantages. Once established, successful serials can use funds received on exiting from their last venture to fund the next (Westhead and Wright, 1998b), and there are no comparative studies of the impact of funds raised from a successful exit on personal wealth and on the subsequent choice of opportunity and venture.

This thesis has postulates an alternative economic theory of serial entrepreneurship, that combines pseudo diversification (Sarasvathy, Menon and Kuechle, 2013), incubation (Cooper, 1985), and entrepreneurial recycling (Mason and Harrison, 2006). Together these factors may counter the proposed economic advantages of business groups for wealth creation. It could be that portfolio entrepreneurs do not sell businesses due to their motivations or their aversion to risk (Parker, 2014). Alternatively, posited in this thesis, they only start related businesses, that are not on their own valuable enough as single ventures to attract the attention of external buyers, but still provide growth.

Detailed Research Questions

- 4.1 Why do entrepreneurs transition to become portfolio entrepreneurs?
- 4.2 What are the economics of serial entrepreneurship?
- 4.3 Do serial entrepreneurs benefit from some form of pseudo diversification, supported by recycling?
- 4.4 Do serial entrepreneurs take on increasingly risky opportunities?

5.2 Section 2. Key Constructs and Measurement Techniques

This section completes the discussion and selection of constructs introduced in Chapter 3. Here additional constructs required for the methodology, including the detailed measures adopted to address the research questions, are explained in detail to support the study's claims for construct validity.

5.2.1 Serial Entrepreneurship, Opportunities and Firms

This study emphasises the interplay of the opportunity, the entrepreneur, the firm and resources that can describe and explain the behaviour of serial entrepreneurs. This study is firmly positioned within the opportunity-based framework of entrepreneurship. Here entrepreneurship is the nexus of two phenomena: the presence of lucrative opportunities, and the presence of enterprising individuals (Venkataraman, 1997; Shane and Venkataraman, 2000; Shane, 2003). As discussed in Chapter 4, this process or system orientated framework has been extended for the study of habitual entrepreneurship by Ucbasaran, Westhead and Wright (2006) to include human capital inputs to and venture outcomes from the process (see figure 4.1). The central position of opportunity requires the use of opportunity related theoretical concepts.

Innovative and Imitative Opportunities

Firms are founded by entrepreneurs to exploit recognised opportunities. The exercise of entrepreneurial judgment or ability requires a subjective cognitive synthesis of public and private information (Casson, 2005) rooted in human capital. Here the mind is an economic resource (Simon, 1978) where different entrepreneurs exploit their comparative advantage in information costs (Casson, 2003; Casson and Wadeson, 2007). Selection theory (e.g. Holmes and Schmitz, 1990; 1995) predicts that high human capital, high ability, serial entrepreneurs will be matched to high quality opportunities. However, there are returns to specialisation in one industry corridor. Serial entrepreneurs are likely to follow a narrow path and imitate past ventures or the ventures of others. Furthermore, innovation is likely to follow an evolutionary and narrow path. Nevertheless, the most talented entrepreneurs are thought to have transferable abilities that are not dependent on experience derived expertise. Therefore, some serial entrepreneurs can be expected to be observed moving between corridors in pursuit of higher quality opportunities.

Innovative Entrepreneurship: Frame-breaking

Entrepreneurship can be both disequilibrium creating through innovation, and also equilibrium creating through competition and straightforward mimicry of existing opportunities. Innovative

serial entrepreneurs embrace uncertainty beyond available information. Despite the power of the market (Hayek, 1945) it cannot include the effects of new technologies on means-ends combinations (Eckhardt and Shane, 2003). Even if future prices are reflected in current bids, future markets and the translation from future to current is highly imperfect (Arrow, 1974). Both Schumpeter (1934; 1942) and Kirzner (1973) emphasise frame-breaking opportunities. The modern definition of opportunity includes only innovative opportunities that develop new means, new ends, or new ends-means relationships (Eckhardt and Shane, 2003). Consequently, researchers are generally dismissive of incremental and imitative opportunities (e.g. Samuelsson and Davidsson, 2009). The novelty of new venture creation remains very important to all future entrepreneurial research (Zahra and Wright, 2011), though few ventures are actually entrepreneurial by this definition.

Imitative Entrepreneurship: Cloning and Replication

Imitation and adaptation of existing opportunities by entrepreneurs in new ventures also provides an important equilibrium creating economic function. The information asymmetry that created the opportunity is diffused by the act of exploitation by imitative competitors who recognise an existing opportunity (Eckhardt and Shane, 2003). The industry life-cycle is characterised by different entrepreneurs joining at different times. The most innovative start 'movements', others join 'bandwagons', or later still make 'clones' (Low and Abrahamson, 1997). Imitation and replication of existing products and acquisition of existing income streams are typical modes of entry for entrepreneurs (Chandler, Douglas, and DeTienne, 2005). It follows that opportunities have their own independent existence (Holcombe, 2003) and life-cycle (Eckhardt and Shane, 2003). Prior entrepreneurial activity does not use up an entrepreneurial opportunity. New opportunities exploit a previously discovered opportunity (Plummer, Haynie and Godesiabois, 2007). Consequently, there are mutually supporting waves of creativity and discovery over time (Zahra, 2008).

The Opportunity Construct

An entrepreneurial opportunity is then more accurately defined as a feasible, profit-seeking potential venture that innovates a new product, improves on an existing product, or imitates or replicates a product in a less-than saturated market (Singh 2001). We should expect the careers of serial entrepreneurs to include firm founding that exploits both imitative and innovative opportunities.

5.2.2 Sources of Opportunities: Objective Discovery vs. Subjective Construction

Any framework that researches the origins and exploitation of opportunities in new business creation must recognise that the ontology of the opportunity construct is the subject of an extensive and long running academic debate (e.g. Alvarez and Barney, 2007; McMullan and Shepherd, 2006; Sarason, Dean and Dillard, 2006; 2010), and through the work of Alsos, and Kaikkonen (2005) is a feature of habitual entrepreneurship research. Are opportunities cognitively discovered as objective, exogenous objects 'out there' waiting to be discovered, or alternatively are they cognitively 'in there' created endogenously through a form of creative subjective perception? Discovery is more likely to result in imitative ventures, while subjective perception will result in more creative and innovative opportunities.

One option is to avoid the ontological controversy. Samuelsson and Davidsson (2009) replace opportunity with the constructs of 'venture idea' and 'emerging venture', where ventures are either imitative or innovative. The ontology of imitative opportunities is straight forward; they are objectively 'out-there' (Mole and Mole, 2010). This pragmatic approach follows other thinkers such as Weick (1979) and Kirzner (1973) where only opportunities that are actually pursued and exploited and brought into an objective reality are therefore 'real'.

Another option is to have a continuum between objectively real and subjectively imagined opportunities. Objective opportunities are visible (in the sense of their information) to a knowledgeable or attuned entrepreneur, while the subjective or socially constructed opportunity is inseparable from the individual (McMullen, Plummer and Arcs, 2007; McMullan and Shepherd, 2006). The most innovative are likely to have the highest degree of uncertainty because they lack objective information in the here and now to support their valuation. Opportunities are conjectures similar to scientific hypotheses which are then investigated (Shepherd, Haynie and McMullen, 2011). Innovation arises from subjectively constructed opportunities or endogenous 'thought experiments' (Alvarez and Barney, 2008). They are more likely to exist in emergent industries close to the firm's technological base (Zahra, 2008).

A Pragmatic View of Opportunity Ontology

Casson and Wadeson (2007) propose resolution to the discovery versus creation question by taking an economic activity view of the process where a project is the unit of analysis. A set of projects is objective and exogenous, i.e. they use resources and have costs. A set of opportunities is subjective and endogenous because it reflects an individual entrepreneur's perceptions. Opportunity perception and development is then an evolutionary economic process that resolves differences

between objective information and subjective perceptions (Berglund, 2007; Renko, Rodney, Shrader and Simon, 2012). Serial entrepreneurs who draw on a broader set of knowledge and experience endowments will be in a better position to develop novel solutions (Grégoire, Barr, and Shepherd, 2010; Gruber, 2010).

Evolution of opportunities occurs within projects because initial perceptions of opportunities are basic and rudimentary, and development continues influenced by prior knowledge, resources and context (Sanz-Velasco, 2006; Sanz-Velasco and Magnusson, 2004). Even a cursory look at a revolutionary invention such as Marconi's wireless reveals a creative assemblage of pre-existing components combined and arranged in a new way. Some entrepreneurs launch new products on a small scale trial basis to gather more information (McKelvie, Haynie and Gustavsson, 2011). The current opportunity may need adaptation, and during the life of the firm new opportunities will also arise (Plummer, Haynie and Godesiabois, 2007). As in the incubation and spin-out literature (e.g. Lamont, 1972), serial entrepreneurs can be expected to pick up on projects conceived in previous ventures.

Pragmatic or continuum models of opportunity ontology that combine objective realism with subjective perception have been positioned with the multi-level ontology of critical realism by evolutionary realist theorists (e.g. Alvarez and Barney, 2007; 2010; Alvarez, Barney and Young, 2010). Evolutionists (e.g. Aldrich and Kenworthy, 1999; Aldrich and Ruef, 2006) emphasise trial and error adaptations and blind or myopic variations, where selection depends on the business environment. Again, in line with the view of strong corridor effects, evolutionists predict that serial entrepreneurs may be too closely tied to prior industries to create new industries (Alvarez, Barney and Young, 2010). However, the same article posits an alternative. Serial entrepreneurs may repeat a creative and innovative process in one industry at the start of another.

Construct Measurement

The literature is not clear on how to define discovered or created in a way that guarantees construct validity. In this qualitative study through semi-structured interviews following Berglund (2007), the entrepreneurs were simply asked to describe the source of their opportunities and the degree to which they were discovered and/or created.

5.2.3 Sources of Opportunities: Serendipitous Alertness and Economic Search

The opportunity-centric process of entrepreneurship requires cognitive information processing and decision making by the serial entrepreneur for each venture start-up decision. In information

theory, opportunities are discovered either through economic search (e.g. Fiet, 1996) or alertness (Kirzner, 1973). In the economic information theory of entrepreneurship, the need for information is driven by uncertainty (Knight, 1921). Entrepreneurs can be radically ignorant when they are unaware of what they do not know (Kirzner, 1973). Uncertainty can be reduced by economic investments in appropriate risk-reducing information (Arrow, 1973; Casson, 1982; Fiet, 1996; Stigler, 1961).

Search

The most valuable information is information specific to an opportunity (Casson, 1982; Fiet and Samuelson, 2000). Non-specific general information like that associated with imitative opportunities is usually easily available at low cost and is unlikely to be a source of a profitable opportunity because it is well known (Fiet, Piskounov, and Patel, 2005). To increase the chances of profit, entrepreneurs will attempt to establish monopolistic control over commercially valuable information related to an opportunity (Casson, 1982; Fiet, Clouse and Norton, 2004). Entrepreneurs must optimise the trade-off between investing too much or too little in uncertainty reducing information (Fiet, 1996).

Alertness

Kirzner (1973, 1985, 1997) integrates previous economic theories that reject simple probabilistic decision making (e.g. Hayek 1945; Mises, 1949; Shackle, 1955) to propose that valuable information pertaining to opportunities is discovered by a serendipitous process called 'alertness'. Kirzner (1973) defines alertness as a 'gift' to notice previously unnoticed opportunities for profit. Alertness is free to the extent that it utilises information that was not sought and is available in an inexhaustible quantity, as it is the basis of all human action (Kirzner, 1973). Alertness is also used in situations where no information is yet available (Kirzner, 1985) and in anticipation of future innovations (Kirzner, 1999; 2009).

Evidence

There is strong evidence that entrepreneurs use a variety of information sources (e.g. Cooper, Folta, and Woo, 1995). The limited evidence from just two studies that specifically research alertness vs. search, and other qualitative studies of entrepreneurs, suggests that entrepreneurs do not rely solely on alertness to make discoveries (Bailey, 1986; Bhave, 1994; Fiet, Clouse and Norton, 2004; Hills and Shrader, 1998; Koller, 1988; Smith, Matthews, and Schenkelet, 2009).

Once entrepreneurs have the object of search in mind, they go to information sources based on prior knowledge in 'one's own backyard', searching familiar information channels even when there is no opportunity in sight (Fiet, Clouse and Norton, 2004). In experimental research, systematic search leads to more potentially wealth generating discoveries than alertness (Fiet and Patel, 2008). However, search does not seem to be associated with new corridors, and searching using the same channels results in related opportunities. In Fiet's (2008) cross industry sample of 12 repeatedly successful entrepreneurs, all but one founded all their businesses in the same industry. Koller (1988) found that there was an equal split between finding opportunities through social networks and individually using prior knowledge.

Opportunity Acquisition Both Search and Alertness

The most widely referenced evidence for alertness (Kaish and Gilad, 1991) defines alertness as the 'search', the broad undirected scanning of the horizon for unknown opportunities. Kirzner (1997) also defines alertness as scanning. For Kirzner (1973) search and alertness can coexist, but only alertness is the mechanism for discovery. Long and McMullan (1984) found that the path to opportunity recognition could stem from search or serendipity. It is difficult not to agree with Singh's (2000) summation that each mode is internally consistent, only the difference between them remains ambiguous.

Search Alertness and Prior Knowledge

Alsos and Kaikkonen (2004) made an empirical study of the opportunity taxonomy of experienced portfolio entrepreneurs, using the constructs of alertness and search, and also of objective discovery vs. subjective creation. They found that discovered opportunities were strongly related to existing resources and existing social networks. More recent laboratory studies by Arentz, Sautet and Storr (2013) also found that alertness is influenced by prior experience in a testable way.

It is possible to combine search and alertness as different forms of information gathering and learning, where both can be constrained by Shane's (2000) types of prior knowledge (see Figure 5.1 below).

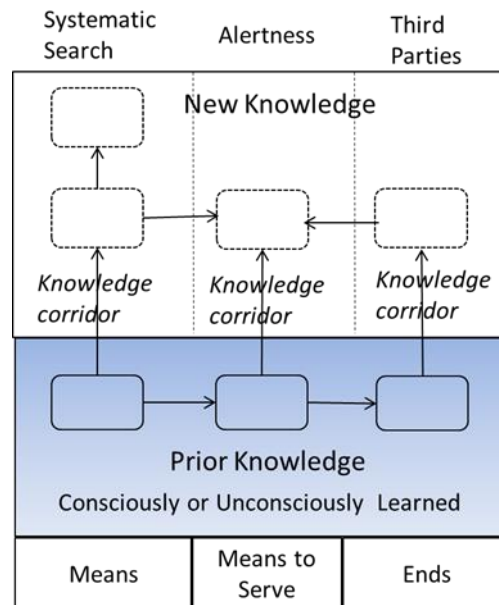


Figure 5.1 Sources of New Information

The framework assumes deliberate or serendipitous alert information gathering or the introduction of new information by third parties to change direction. Information gathering in an existing or new corridor is assumed to be strongly affected by prior knowledge and proceeding along Venkataraman's (1997) information corridors.

Search and Alertness and Corridor Effects

Combining information search and alertness with alternative corridors and path creation, Gruber (2010) suggests three possible paths for habitual entrepreneurs:

1. Path dependence on a restricting corridor. Restricted search and alertness.
2. Path creation and path breaking from deliberate path search and action. Economic search.
3. Unintentional or random emergence of a path or path breaking. Serendipitous alertness.

Construct Measurement

As the discussion of the relevant literature revealed, clearly differentiating between the constructs of search and alertness has its difficulties but both constructs, particularly search, appear in many studies of habitual entrepreneurship. In this study, as with the question on discovery or creation, entrepreneurs were asked to describe the source of information for each exploited opportunity.

5.2.4 Corridor and Path Dependency Constructs

Venture Similarity

Venture similarity is a measure of conformity to a particular corridor. Chandler's (1996) constructs of context (industry) and content (task) similarity measure the extent to which accumulated human capital is likely to be useful. They are listed here below:

1. Products
2. Customers
3. Competition
4. Suppliers
5. Technology
6. Managerial skills
7. Technical skills

Reuse of Prior Knowledge

The reuse of prior knowledge can also be used to measure corridor effects. Entrepreneurs follow idiosyncratic information corridors (Venkataraman, 1997) such that prior knowledge and education is regarded by Shane (2000) as the source of all opportunities, and prior knowledge allows the recognition of deeper opportunities (Grégoire, Barr and Shepherd, 2010; Gruber, MacMillan and Thompson, 2013).

Shane's model provides three types of influence stemming from prior information:

1. Prior knowledge of markets will influence which markets to enter.
2. Prior knowledge about how to serve markets will influence the resources (means) chosen to serve.
3. Prior knowledge of customer problems (ends) will influence their discovery of products and services to exploit a new technology.

In Shane's model, knowledge of a new technology (means) is not enough on its own. Lack of knowledge of a viable strategy or customer needs will lead to solutions not finding matching

problems. Shane's 'means to serve' is conceptually similar to the construct of a business model. A business model is a firm configuration for the enactment of a specific opportunity (George and Bock, 2011). Opportunity viability requires a value structure that creates and captures some minimal value to replenish the firm's resource base (George and Bock, 2011). The inclusion of the means to serve/business model provides a direct link to opportunity enactment and firm foundation.

Innovation

Industry Stage

Many researchers emphasise the importance of contingent exogenous factors such as industry stage (e.g. Ucbasaran, Westhead and Wright, 2001; Zahra and Wright, 2011). The newness of the industry in which a serial entrepreneur chooses to start-up may also be a measure of innovation or imitation. Within the research framework, new ventures are categorised by industry stage using a synthesis of constructs used by Starr and Bygrave (1992) and Low and Abrahamson (1997).

1. Early: Pre-emergent Addressing new often pre-venture incipient customer needs
2. Early: Emergent New product-customer combinations attracting new entrants
3. Growth Rapid growth of both demand and supply
4. Mature Slow growing or saturated markets

New Product Development

For the research framework, measures of innovation are drawn from the extant literature. Most sets of constructs for innovation emphasise the degree of newness (Fiet, 2002; Helfat and Lieberman, 2002; Dahlqvist and Wiklund, 2012; DeTienne and Chandler, 2004; Manimala, 1992; Ucbasaran, Westhead and Wright, 2009) which are condensed here into four categories.

- a) New to the world industry Fundamentally new product
- b) New to market New to country, similar products in existence
- c) New market segment Modification of an existing product or new product to serve new customer segment in an established market
- d) Additional supply Entry into established product market in which the firm does not currently participate

Diversification

Individual corridor effects need to be isolated. Whether the next venture is in the same industry and is a related diversification is one measure. An industry is formed of firms producing close substitutes or complementary goods to meet similar customer needs (Porter, 1980). Related diversification occurs in the same industry through entry into market segments that are horizontal or vertical expansions of the same product-customer market (Iacobucci, 2002).

Degree of Innovation

Venkataraman and Sarasavathy (2001) propose a model of opportunities that suggests three types of opportunity recognition process: 1) Recognition. Where both means and ends, already exist. Recognition is equivalent to imitation and cloning. 2) Discovery. Here one of either means or ends exists, and the other element has to be recognised. Depending on the degree of innovation required, it could feasibly be a combination of recognition, discovery and creation. 3) Creation. Here neither means nor ends exist, and a very high level of creativity and innovation is required.

Combined with the additional implementation element of the means to serve/business model derived from Shane, (2000) and George and Bock, (2011) the degree of innovation or imitation can be judged in respect of all three elements.

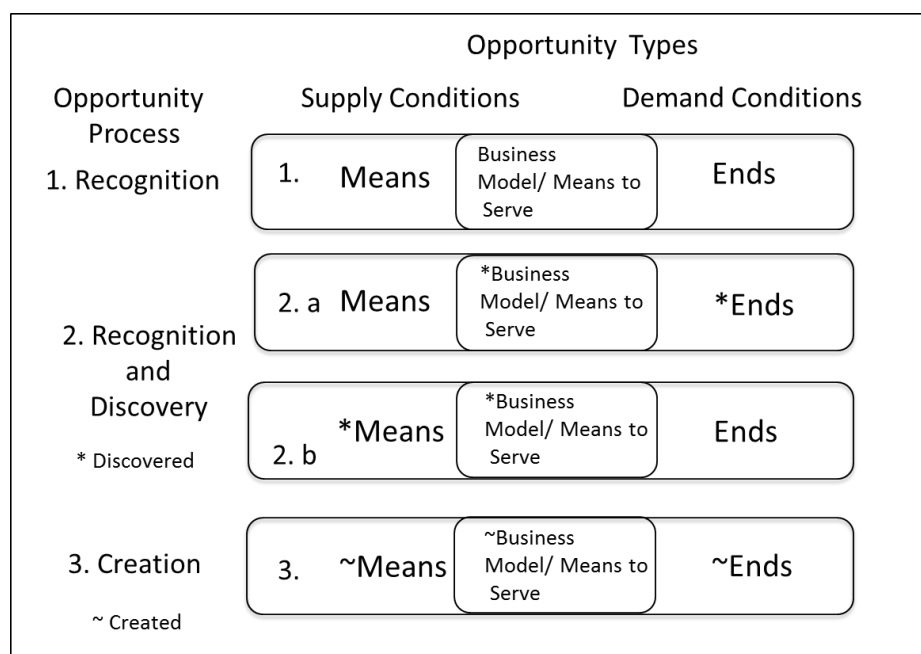


Figure 5.2 Extended Opportunity Framework

5.3 Chapter Summary

In this chapter we have returned to the literature of entrepreneurship to select conceptual frameworks, tools and constructs that are likely to assist in the exploration of the careers of serial entrepreneurs. The framework is used to explore the 'why', 'how' and 'when' of the relationship between the ventures of serial founder entrepreneurs.

The next chapter details the development and application of the research methodology.

CHAPTER 6

Research Methodology

Chapter 5 developed the detailed research questions. This chapter explains the methodological approach used to address the research questions. The objective of this chapter is to show that the research employed a pragmatic and scientific approach, including an assessment of the reliability and validity of the study.

6.1 Section 1. Research Paradigm

Consideration of the research philosophy, or paradigm, is beneficial in that it enables a more informed decision about the research design. Methods should be selected that are practical, communicable, not self-deluding and reliable (Miles and Huberman, 1994). The correct paradigm enables the selection of research strategies that will work effectively and enable adaptation of the research design in the face of constraints that may arise (Easterby-Smith, Thorpe and Lowe, 2015).

Social scientists continue to debate how best to conduct research, based on their assumptions about the nature of the social world. This study adopts an open philosophy and a pragmatic approach (Cherryholmes, 1992; Patton, 2002; Tashakkori and Teddlie, 1998) to empirical research drawing on existing theory, but also deduces theory from the patterns that are perceived in the new data. The method gives voice to serial entrepreneurs to reveal how they view and construct their world.

6.1.1 Alternative Research Paradigms

The research paradigm is the basic belief system that guides the investigation covering not only ontology, the nature of truth, but also epistemology, how to go about researching truth (Guba and Lincoln, 1994; Lincoln, Lynham and Guba, 2011). Robson (2011) suggests that close attention to the research paradigm will enable the researcher to be more flexible, confident and reflective and also capable of reinvention and evolution of research.

Traditionally the debate is presented as being between two fundamentally different and competing inquiry paradigms: (1) the logical-positivist paradigm that employs quantitative and experimental methods to test hypothetical generalizations using deductive reasoning, and (2) the phenomenological-interpretivist paradigm that prefers qualitative and naturalistic approaches using inductive reasoning to understand experience in context-specific settings (Patton, 2002).

Logical-positivists treat the social world as an objective reality, where universal laws explain and govern the reality being observed (Burrell and Morgan, 1979; Creswell, 2013). In contrast, phenomenological-interpretivists treat social reality as a subjective experience, and the object of research is to understand the way in which an individual creates and interprets the world (Burrell and Morgan, 1979).

Positivism

Positivism derives from the philosophical stance of the natural scientists and utilises a highly structured methodology to analyse quantifiable data (Gill and Johnson, 2010; Saunders, Lewis and Thornhill, 2015). Positivism is underpinned by the ontological assumption of realism where reality exists independent of human thoughts and beliefs. A logical-positivist approach requires research to be undertaken independently in a value-free way, neither affecting nor affected by the subject of the research (Saunders, Lewis and Thornhill, 2015). However, the logical-positivist paradigm is not value free. Personal choices still have to be made by the researcher as to what hypotheses to construct, which variables to measure and how to construct and record them. For example, an objective statistic such as the Consumer Price Index is made up of subjective decisions about what it should contain (Patton, 2002). Nevertheless, the logical-positivist approach to research is the most commonly used in entrepreneurial research, as evidenced by the large number of human capital and venture performance studies cited in the literature review.

Interpretism and Interaction

However, to paraphrase Bygrave, (1989) disjointed, discontinuous, non-linear entrepreneurial processes cannot be studied successfully with quantitative methods developed for examining smooth, continuous, linear and repeatable processes. In an interpretivist philosophy priority is given to the meaning entrepreneurs and other social actors attach to their situations as they go about their activities in conjunction with others (Prus, 1996). To understand the 'how' and 'why' of events they must be examined directly through the eyes of those involved (Mintzberg, 1979). There is a qualitative requirement to study things in their natural settings, also to make sense of and interpret phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 2011). Social actors are affected by contingency factors that provide a context to their social behaviour (Bryman and Bell, 2015). Founding and exiting firms are a social phenomenon. In interpretivist phenomenological research it is the participants' perceptions, feelings and lived experiences that are paramount and the object of study (Guest, MacQueen and Namey, 2012).

In reality, research into the process of sequential venture start-up, exit and return to start-up is suitable for both logical-positivist and interpretivist approaches using both qualitative and quantitative data. A pragmatic starting point for the choice of methodology is calls for additional insights, best perceived using exploratory interpretivist methods.

Calls for Phenomenological-Interpretivist Research

Despite contributing a minority of studies, those taking the phenomenological-interpretivist paradigm have made a significant contribution to the study of habitual entrepreneurship (e.g. MacMillan, 1968; Starr and Bygrave, 1991; Rosa, 1968; Mason and Harrison, 2006). Positivist researchers also call for more in-depth, phenomenological studies to explore the processual and contextual relationships of habitual behaviour, using longitudinal ethnographic case studies to explore and build theory (e.g. Aldrich, 1990; Chandler, 1996; Bygrave, 1989; Rosa, 1998; Rosa and Scott, 1999a; Starr and Bygrave 1992; Westhead and Wright, 1998; Ucbasaran, Wright and Westhead, 2003).

Interpretivist methods may be better at unlocking causal relationships. Cause and effect can be extracted using longitudinal research that reconstructs event histories ex-post (Rosa, 1998; Ucbasaran, Alsos, Westhead, Wright, 2008; Parker, 2013). Phenomenological studies explore the 'how' and 'why' questions of the relationship between the habitual entrepreneur and opportunities (Westhead, Ucbasaran and Wright, 2009). Case studies provide rich contextual evidence of the process (Chandler, 1996), and probe more deeply into the 'quality' rather than the 'quantity' of prior entrepreneurial experience and learning (Reuber and Fischer, 1999; Ucbasaran, Westhead and Wright, 2008; Westhead, Ucbasaran, Wright and Binks, 2005).

6.1.2 Post-positivism, Pragmatism and Critical Realism

In post-positivism it is possible to blend a positivist outlook on reality and recognise the subjective nature of perception by both the observed and the observer. Post-positivists remain realists in the sense that they believe in an external reality separate from our own descriptions of it, and seek to provide explanations for it (Robson, 2011). Post-positivism holds a critical realist position concerning reality and its perception (Lincoln, Lynham and Guba, 2011). There also is an acceptance by post-positivists of interaction between researcher and the researched (Tashakkori and Teddlie, 1998). Theories, hypotheses, background knowledge and the values of the researcher can influence what is observed (Reichardt and Rallis, 1994).

In a pragmatic research paradigm, it is the research questions that determine the epistemology and ontology to be adopted (Saunders, Lewis and Thornhill, 2015). Pragmatists pick and choose what to research and how to do it, and all 'real world' research takes place in the field, rather than in the laboratory (Cherryholmes, 1992). Consequently, a pragmatic post-positivist research philosophy relies on multiple methods (qualitative and quantitative) as a way of capturing as much of reality as possible, to verify existing theories and discover new ones (Denzin and Lincoln, 2011). Internal and external validity remain important, and qualitative procedures can lend themselves to structured sometimes numerical analysis. These include frequency counts, tabulations, and low-level statistical analyses (Denzin and Lincoln, 2011). In pragmatism, truth is what works best at the time (Saunders, Lewis and Thornhill, 2015).

Critical Realism: Processes and Contextualisation

Critical realism is appealing to pragmatists as it can accommodate a variety of methodological choices to develop causal explanations of complex events in specific contexts (Easton, 2010) as required for studies of the careers of serial entrepreneurs. Critical realism assumes a stratified ontology comprised of mechanisms, structures, events, experiences and emergent powers, all operating within an open systems perspective (Archer, 1995; Bhaskar, 1975). The paradigm can transcend a number of inconsistencies between positivism and interpretivism (Wynn and Williams, 2012), bridging those two extreme viewpoints (Easterby-Smith, Thorpe and Lowe, 2015), and thereby overcoming problems encountered in purely positivist or relativist accounts (Robson, 2011).

Epistemology is concerned with the notion of what counts as acceptable truth by specifying the source, characteristics, and assessment of truth claims (Chua, 1986). Critical realism seeks to posit descriptions of reality based on an analysis of the experiences observed and interpreted by the participants, along (pragmatically) with other types of data (Wynn and Williams, 2012). Since a particular object of research may well have different characteristics, it is likely that a mixed-method research strategy will be necessary (Mingers, Mutch and Willcocks, 2013). Critical realism facilitates a more pragmatic approach and therefore its principles are adopted in this thesis.

Critical Realism: A Pragmatic Multi-Level Ontology

Whereas the logical-positivist paradigm reduces reality to a conjunction of cause with effect (Bhaskar, 1975), critical realism stratifies reality into three nested domains. The empirical domain is those events which we are able to experience via perception or measurement (Wynn and Williams, 2012). Lee (1991) describes the workings of such a three level framework. The first level is the subjective level of the entrepreneur where common sense and everyday meanings explain

behaviour. This perspective can be captured through a discursive interview process. In the second level the researcher deploys a subjective interpretation similar to Interpretative Phenomenological Analysis (IPA) (Smith, 1996), but can also draw pragmatically on other techniques.

IPA has been used in entrepreneurship research by Berglund (2007). Here the respondent's speech and actions do not mirror phenomena directly as argued by positivists, nor are they assumed to constitute the phenomena as argued by social constructionists. Instead, the researcher must interpret the subjects' responses in order to glean their relevance for the phenomena under investigation (Berglund, 2007).

In the third level the researcher uses positivist scientific theory to postulate the existence of objects and relationships which may or may not be directly observable in particular cognitive processes and social relationships of the entrepreneur. Consequently, the socially constructed view of reality held by a given actor, such as an entrepreneur, may be incorrect with respect to the domain of an independent reality (Wynn and Williams, 2012). Nevertheless, the research still applies the tenets of positivism such as falsifiability, logical consistency, relative explanatory power, and survivability (Lee, 1991).

In addition, critical realism also adopts a view of reality as an open system (Bhaskar, 1998; Mingers, 2006) that is beyond our ability to control directly, and which is typical of frameworks proposed for entrepreneurship research that stress the temporal, open and dynamic nature of entrepreneurship (e.g. Bygrave, 1989; Hindle 2004; Zahra and Wright, 2011). This thesis is a field study designed to capture the reality of an open system. It captures real opportunities enacted in firms during often long and varied careers.

Therefore, in following the tenets of critical realism the methodology blends the subjectivity of the entrepreneur and the subjectivity of the researcher from which reliable and valid postulates are constructed for further research.

Critical Realism and Entrepreneurship

Entrepreneurship scholars who research the discovery of opportunities draw directly on this critical realist perspective (e.g. McMullen and Shepherd, 2006; Mole and Mole, 2010) because it blends objective discovery and subjective creation of opportunities. Internal thought-objects, in the mind, such as our beliefs, theories, and concepts about reality are ontologically real, yet distinct from the objects that are out-there (Wynn and Williams, 2012). Nevertheless, the research of entrepreneurial opportunities remains an area of considerable debate and pragmatists need to be open to new perspectives. For example, as discussed above, Alvarez and Barney (2010) assign opportunity

discovery theory to the critical realist 'hegemony'. The alternative creation perspective is positioned as 'evolutionary realism' combining subjective constructionism with evolutionary theory.

Axiology: Values of the Researcher

Another driver for the choice of paradigm is the personal values that guide the enquiry (Heron, 1996). In discovery, personal, cultural, moral, or political values cannot be eliminated. However, researchers need to strive to be value-free in the presentation phase (Denzin and Lincoln, 2011).

Axiology can be demonstrated by writing a personal statement of values in relation to the topic and articulating those values when making judgements about the research (Saunders, Lewis and Thornhill, 2015).

Personal Statement

This study follows a pragmatic functionalist paradigm; it is non-radical and regulatory in its values or axiology (Burrell and Morgan, 1979; Saunders, Lewis and Thornhill, 2015). It provides explanations of the status quo, social order, social integration, consensus, economic need satisfaction, and rational choice. Behaviour can be understood through both exploratory research questions using deductive reasoning starting from established theory, and inductive theory building from new evidence. The research is concerned with how the affairs of serial entrepreneurs are regulated and how they might be improved within the existing framework of free enterprise. It assumes rationality and offers rational solutions for rational problems within the current structure. The research is empathic to the individual's view point in terms of their subjective experience of the process of serial entrepreneurship, but does not necessarily accept that the entrepreneur's responses always reflect phenomena directly. It is both deductive and inductive.

The Chosen Paradigm: Pragmatism

Consequently, this thesis takes a pragmatic view, i.e. following Weick's (1995) pragmatic observation that people in everyday life couldn't care less about ontology, and Berglund (2007) whose empirical study using IPA concludes that opportunities are a blend of the objective and the subjective. It is also influenced by positivist realists Samuelsson and Davidsson (2009) who focus exclusively on the objective fact of venture creation. Even in the fierce debates on critical realism vs. research structuration theory in entrepreneurial opportunity research, there are calls for qualitative and quantitative methods to be complementary (e.g. Mole and Mole, 2010; Sarason, Dillard and Dean, 2010).

Summary

The research paradigm employed is that of pragmatism. This is driven by the exploratory nature of the research questions and the human entrepreneurs to be researched, requiring openness to new data and theoretical constructs, while recognising the presence of previous research. The method calls for more interpretive longitudinal research into the careers of serial entrepreneurs. The research uses a pragmatic approach to complement the subjective explanations of serial entrepreneurs with numeric data, exploring existing postulates and developing new ones. The extensive debate concerning the ontology of entrepreneurial opportunities suggests both subjective and objective views and qualitative and quantitative forms of data are valid for the study of entrepreneurship.

6.2 Section 2. Methodology: The Logic of Enquiry

This section introduces the pragmatic combination of techniques used in the research method to address the research questions. The research method uses semi-structured interviews within an exploratory case-based framework. The interviews form a partial 'life history' in which the serial entrepreneur recalls the circumstances surrounding the start-up, development and exit of businesses over their career. Data analysis combines pre-coded themes reflecting extant theory combined with the induction of new theory.

6.2.1 Entrepreneurial Career History Case Studies

The principal research question is: How are the ventures of serial starter entrepreneurs related to one another? This required a shortened form of life history analysis focussed on the critical incidents (Chell, 2004) associated with venture founding and exit. Individual life histories, or more accurately career histories, are by their nature case studies par excellence (Palmer, 2010). Case studies (Yin, 1981) focus on the interrelationships that constitute the contextual factors of a specific entity (e.g. a firm, person, organisation, event, or phenomenon) with the explicit purpose of generating theory or contributing to extant theory (Mills, Durepos, and Wiebe, 2010). A key informant approach (Kumar, Stern and Anderson, 1993) was adopted to understand an individual's attitudes and experiences in a given situation (Blumberg, Cooper and Schindler, 2005). In addition, life history case studies provide: a) insights into the social and cultural milieu, b) the sense-making mechanisms deployed by the key informant, and c) information about the larger group to which they belong (Palmer, 2010).

Case Study

A case is a study of a phenomenon occurring in a bounded context (Miles and Huberman, 1994). The phenomenon and context are intertwined (Yin, 1981). The case study method can be used pragmatically because it does not imply the use of a particular type or source of evidence (Easton, 2010). Case study can use qualitative or quantitative evidence (Yin, 1981). Case study is useful for complex phenomena, where there are many more variables than data points that require triangulation to detect patterns (Yin, 2014). Both theory-building and theory-testing case studies are valid and both require precise and measurable constructs as the foundation of powerful theory (Eisenhardt, 1989). Rigorously designed case studies produce 'reliable' knowledge in the form of analytic as opposed to statistical generalisations (Yin, 2014). The case study provides access to processes not revealed through more formalised quantitative methods, such as surveys (Eisenhardt, 1989). Indeed, case studies of entrepreneurial life histories are also more likely to be accurate than questionnaires (McKenzie, 2007).

Positivism and Qualitative Case Study

Critical realists and pragmatists have identified the case study method to explore the interaction of structure, events, actions, and context to identify causal mechanisms (e.g. Easton 2010; Lee 1981; 1989; Miles and Huberman, 1994; Mingers, 2004). Pragmatists must be open to ways to improve their research, and Lee (1989) suggests five ways that qualitative researchers can improve the scientific strength of their research: 1) Including other theoretical explanations for the observations and testing them against the evidence. 2) Utilising natural control variables, such as focussing on a single person in varying circumstances. As Lee illustrates, astronomers and biologists use natural controls when unable to conduct laboratory experiments. 3) Remembering that strong general logical deductions do not require mathematics and statistics. 4) While replicability in qualitative studies is not feasible, the same theories can be tested across different cases with varying sets of initial conditions. 5) Increasing generalisability by additional experiments. The core principles of generalisation that apply to scientific experiments also apply to qualitative methods (Patton, 2002; Shadish, 1995).

Multiple Case Studies

Multiple case studies, by increasing the size of the sample, strengthen the scientific or positivist validity of qualitative research (Lee, 1989). In multiple case study design, while each individual case study is regarded as a complete study, further analysis across-cases provides convergent or divergent evidence regarding the facts and conclusions sought (Yin, 2014). Each case may be similar

or dissimilar, as the aim is to provide either replication of results or differing results for predictable reasons (Stake, 2005; Yin, 2014). Multiple case studies appeal to pragmatists because, as Eisenhardt and Graebner (2007) state, with its emphasis on constructs and testable theoretical propositions it is a bridge from qualitative evidence to mainstream deductive research.

Multiple cases are a powerful means to create theory, because they permit replication and extension among individual cases. Replication means that individual cases are viewed as a series of experiments used to corroborate propositions or inferences drawn from other cases. This helps researchers to perceive patterns more easily and to eliminate chance associations (Yin, 2014). Extension uses multiple cases to develop more elaborate theory (Eisenhardt, 1989). The researcher can also use purposeful or scientific sampling rather than random sampling to test theoretical similarities and differences within and between groups of cases, as an aid to the development of substantive theory (Yin, 2011). Nevertheless, important or instrumental cases have explanatory power that throw light on phenomena, issues and processes beyond the cases themselves (Stake, 2005) because the logic of explanation is not based on statistical generalisations, but on analytical generalisations about the phenomena and processes identified within a specific context (Gomm, Hammersley and Foster, 2000; Yin, 2014).

This study also uses an embedded case study design, i.e., analysis at multiple levels including individual, group, firm and industry. This improves the likelihood of inducting richer and more reliable models (Yin, 1994). Comparative within and across-case study at multiple levels is especially appropriate for gaining insight into organisational phenomena over time (Eisenhardt, 1989). Entrepreneurial life history cases have been used by entrepreneurship researchers with good effect in longitudinal studies. Of particular note are Rosa's (1998) study of the development of business clusters, Ucbasaran, Wright and Westhead's (2003) study of differences between habitual entrepreneurs, and Mason and Harrison's (2006) discovery of entrepreneurial recycling by habitual entrepreneurs.

Other studies are listed here below in Table 6.1.

Researcher (s)	Qualitative Data Sources
Vesper (1980)	Unspecified number of interviews
MacMillan (1986)	1 anonymous contributor
Starr and Bygrave (1991)	5 case studies drawn from public sources
Wright, Robbie and Ennew (1997a)	13 interviews
Rosa (1998)	23 interviews including 3 extended case studies
Ucbasaran, Wright and Westhead (2003)	8 case studies
Mason and Harrison (2006)	5 case studies
Mosley and Wright (2007)	5 case studies
Gemmell, Boland and Kolb (2012)	26 interviews (1 hour each)

Table 6.1 Qualitative Studies of Habitual Entrepreneurs

Multiple Case Surveys

Inductive theory-building using cases addresses ‘why’ and ‘how’, but it is not equipped to address ‘how often’ or ‘how many’ (Eisenhardt and Graebner, 2007). Nevertheless, multiple-case research designs involving case comparison allow the pragmatic researcher to introduce positivist techniques such as descriptive statistics. Case survey requires the isolation of factors worthy of further attention and a sufficient number of case studies to warrant cross-case tabulations (Yin, 1981). This study collected and analysed the business genealogies (Rosa, 1998) of 116 ventures (112 start-ups) that provide a rich picture of many factors pertinent to the research questions, such as duration of venture, venture outcome, nature of opportunity, etc.

The research design uses a combination of case comparison and case survey, within and across cases. The thesis explores similarities and differences between serial entrepreneurs using a combination of longitudinal and cross-sectional analysis that combines the entrepreneur’s commentary with basic counts and statistics to discern patterns. In retrospect, the quantitative data about the characteristics of the entrepreneurs and their ventures proved useful in: a) expanding and triangulating the commentary of each informant, b) aiding the researcher’s interpretation of the data, c) helping establish the validity and reliability of the study, and d) positioning the study in the literature alongside related studies.

6.2.2 Data Capture and Analysis

The pragmatic comparative within and across-case research design combines a semi-structured and pre-coded thematic template (Guest, MacQueen and Namey, 2012; Flick, 2009) reflecting extant theory with the induction of new theory using the constant comparative method of data collection and analysis (Glaser and Strauss, 1967).

Grounded Theory

One feature of the qualitative tradition of research is the induction of theory from data. Data is analysed through an inductive, ongoing and evolving process of identifying themes (Miles and Huberman, 1994). The technique builds a complex, holistic picture from the analysis of words gathered in a natural setting (Creswell, 2013). In grounded theory, research strategy, data collection, analysis, and theory generation work together in close relationship to one another (Strauss and Corbin, 1998). Grounded theory uses the constant comparative method of analysis (Glaser and Strauss, 1967). Here, data is coded into categories that emerge from the analysis. Data collection continues and previous data is re-analysed until the categories that have emerged become saturated. Researchers constantly compare theory and data and iterate toward a theory which closely fits the data. Furthermore, the overlap of data generation and data collection also allows for pragmatic adjustment in the design strategy as themes emerge in each new case study (Eisenhardt, 1989).

Pragmatism: Extant vs. Grounded Theory

In the pragmatic research design the research questions drive the research method (Saunders, Lewis and Thornhill, 2015). Therefore, unlike pure forms of grounded theory, the researcher does not enter the field with a completely blank slate (Patton, 2002). Codes and categories may arise from different sources including: research objectives, the literature review, the researcher's values and prior experiences, and the researcher's theoretical orientation (Miles and Huberman, 1994). Without a theoretical focus, it would not be possible to recognise the field being studied; qualitative research reflects the interplay between theory, concepts and data (Silverman, 2010).

Theory Concept Maps and Templates

Concept maps (Novak and Gowin, 1984) and templates (Crabtree and Miller, 1999) are devices for representing theoretical concepts when organising and conducting research. These techniques have emerged from subjective qualitative techniques such as IPA (King and Horrocks, 2010). King (2004) advocates three alternative types of template: 1) pre-define a priori codes based on the theoretical

position of the research, or 2) develop codes after some initial exploration of the data, or 3) take a pragmatic half-way position. The latter technique takes some initial codes from the research questions, and then uses the interview questions and exploration of the data to refine the codes further. The half way position accords with Yin (1981) who recommends that narrative accounts are organized around the substantive propositions, questions, or activities, with flexibility provided for modifying these topics as analysis progresses.

The pragmatic approach adopted supports both deductive and inductive data analysis led by the research questions. The research instrument (see Appendix I) of semi-structured questions focuses on the key events of start-up, exit and re-entry required of selection theory. The life history and venture genealogy themes are sufficiently broad to include the investigation of a wide variety of existing postulates such as corridors, pseudo diversification, and innovation drawn from the literature review. Additional themes drawn from theory were included explicitly in the interview questions. Of most note, following Berglund (2007), the interview included questions designed to elicit a phenomenological response to the ontological debate on the origins of opportunities. Only once the data had been collected and analysed did new themes centred on firm founding and exit behaviour emerge inductively. The themes suggested new postulates for further testing.

Summary

The research method uses semi-structured interviews to gather partial 'life history' and business history data within an exploratory case based framework. The multiple case study methodology used is inherently pragmatic and does not imply the use of a particular type of evidence. Qualitative and quantitative data is collected using case survey, and used for within and across-case analysis using multi-stage thematic coding. The method explores existing postulates deductively and also searches for new patterns to build new theory inductively. The size of the study is comparable with other case based studies of habitual entrepreneurship.

6.3 Section 3. Sampling and Data Capture

The following section discusses the actual data collection process. The research process followed an accepted code of ethics throughout consisting of: a) informed consent, b) honesty and no deception, c) privacy and confidentiality, and d) accuracy (Denzin and Lincoln, 2011). This section documents the reflexive nature of the research process, in particular the actions taken to avoid bias.

6.3.1 Sampling

Sample Population of Interest

The population of interest is serial founder entrepreneurs starting at least two businesses including the exit of at least one of those enterprises regardless of whether it was a successful (positive) or unsuccessful (negative) exit. 'Career' is used to encapsulate not only spells as entrepreneurs, but also conventional forms of employment and education, before and between start-ups. All were successful in the sense of being persistent, i.e. still currently engaged in their latest start-up irrespective of past venture outcomes.

Sampling Strategy

The sampling strategy follows the maxim that more cases create more robust theory, because the propositions are more deeply grounded in varied empirical evidence (Eisenhardt and Graebner, 2007). Following Creswell (2013), a purposeful sampling strategy was used to generate a homogenous sample of serial founder entrepreneurs. Purposeful or theoretical sampling occurs where the researcher manipulates sampling activities interactively to a much greater extent than in statistical sampling (Mason, 2002). Efforts were made to select cases at an early stage in the research project, so as not to bias the sampling procedure to reflect prior beliefs, and to maintain the exploratory nature of the research. Some commentators (e.g. Mason, 2002) recommend seeking out negative instances as defined by the theory with which you are working. Others that extremes or 'polar types' (Eisenhardt and Graebner, 2007) are purposely sought. However, from the comparative lack of qualitative research of serial entrepreneurs, it was assumed that this group would be hard to engage in case study research and seeking out particular types of cases would consume limited research resources.

In practice, a relatively high number of repeat entrepreneurs participated in the study, including two polar cases of entrepreneurs founding seven or more ventures. The difficulty of selecting entrepreneurs in the population of interest from the available UK specific sample frames actually improved the research sample. It led to several useful 'negative' cases. Three cases of portfolio entrepreneurs, i.e. parallel founders, a case of a serial acquirer turned starter, and an exiting inheritor turned acquirer. These cases were used for case comparison with serial founders.

Sampling Process

Heterogeneity and the potential for generalisability and transferability by other researchers was achieved by sampling from any industry (as determined by the industry of their current venture),

avoiding the practice of industry specific sampling often used in entrepreneurship research. The sampling frames were not detailed, and the actual number, variety, and outcome of ventures started over their career were not known in advance of the invitation to participate. Although the research has no gender specific research questions, efforts were made to find and invite entrepreneurs of both genders. Of those invited, approximately 40% agreed to participate. One entrepreneur cancelled on the day of the interview and withdrew from the study. Others required several approaches before agreeing to participate. This confirmed the assumption that this population is not easy to access for extended qualitative academic studies. Gaining access is a common problem. Managers, especially those in senior positions, tend to be powerful and busy people, and are unlikely to allow access to a researcher unless they can see a personal or commercial advantage (Easterby-Smith, Thorpe and Lowe, 2015). The letter of invitation (see Appendix I) appealed to their sense of community to provide insights relevant to nascent and novice entrepreneurs.

Sampling Frame

There are no readily available sampling frames for serial founder entrepreneurs likely to be willing to participate in case study research. One sampling frame was built with the help of journalists and some press articles in the public domain. It contained several well-known but not famous UK entrepreneurs. Another frame consisted of entrepreneurs who were clients of local and regional enterprise consultancies, who support entrepreneurs not yet in the public eye. It was not a 'snowball' sample, because while entrepreneurs tend to know other entrepreneurs, in practice they are rarely serial entrepreneurs. As a case in point, one entrepreneur referred by one of the participants turned out to be a serial acquirer turned founder.

The serial entrepreneurs came from a variety of industries and market sectors and all had thriving current ventures, having been entrepreneurially active from 5 to 42 years. An unexpected feature of the sample was the number who had not acted alone, but in partnership with at least one other person. This resulted in a change to the study and questions to gather more information about the entrepreneurial team. In two case studies both partners were interviewed separately to check for consistency. As no significant differences were detected between data collected by the two interviews it was concluded that lead entrepreneurs would be reliable informants, and not to press for additional interviews in other case studies.

Sample Characteristics

All the case studies are of persistent, and in 2014 when the data was gathered, active entrepreneurs, i.e. there are no retirees or former entrepreneurs. Persistent entrepreneurs are subject to survivor

bias (Wiklund and Shepherd, 2003). The sample can also be accused of a common bias in the entrepreneurship literature of only investigating successful cases after completion (Davidsson, 2004). However, the sample is not restricted to surviving businesses. The study sample includes a significant number of cases of closed ventures (23%) and outright failures with significant losses (17%). The great majority of serial entrepreneurs interviewed are males, 8% are female. The average age is 51 years, the youngest is 27, and several entrepreneurs are in their 60's, close to retirement age. The average total entrepreneurial experience is 24 years with most founding their first venture in their early twenties. All but one entrepreneur is British born and the majority of ventures are British enterprises serving home markets.

Summary

Following Yin's (2014) and Lee's (1989) pragmatic approach that blends qualitative and quantitative approaches and techniques, the methodology resulted in 21 individual cases of the careers of serial entrepreneurs, each with several sub-cases of venture start-up, totalling 112 occurrences of venture start-up. In addition, there were 3 cases of portfolio founders, and 2 mixed cases that included acquisitions. The study is comparable with other studies of habitual entrepreneurs.

6.3.2 Data Capture: Interviewing the Entrepreneurs

The Research Instrument

The interview preparatory letter contained nineteen questions organised in four sections, and following Kvale and Brinkmann (2009), used a variety of question types including introductory, structuring, probing, specifying, direct, indirect and interpreting questions. Care was taken in the practice and test interviews to use different wordings, to add questions, to build rapport and change pace (Berg and Lune, 2011). Pre-testing of questions is normally associated with quantitative surveys. Nevertheless, to ensure that the data collection method was valid and feasible, two trial interviews were conducted to test the complete process. The list of prepared questions was found to be too long. A shortened version was used in later interviews, and participants were asked for additional information by email. The time and location of the interview was decided by the entrepreneur. The test interview participants were re-interviewed toward the end of the data capture phase to ensure the consistency of interview quality.

Preparation by Researcher

Rapport between researcher and informant can make a considerable difference to the quality of data capture. By its very nature a focused interview requires selection of questions by the

interviewer to suit the research agenda (Rosa, 1998). The researcher must put him or herself in the role of respondent and not impose the world of academia and preconception upon the interviewee (Fontana and Frey, 1998). Each serial entrepreneur was invited using the same standard letter to participate in the research by way of a confidential interview (see Appendix 1). Neither the entrepreneurs nor their ventures could be easily identified. This was especially important to those serial entrepreneurs who were well known. The letter explained that the research would be used in aggregate for academic research and teaching purposes only.

On acceptance and confirmation of the date and time of interview, the serial entrepreneur was sent a list of the topics and the specific questions to be covered if time allowed. This demonstrated that the researcher was both open and professional, and the interview would be unlike a press interview. The subjects were told not to over prepare, but were invited to write down in advance of the interview to save time their ventures with dates and also some general descriptive statistics, such as number of employees. In the event, most had only glanced at the questions before hand; none had prepared answers except for the list of ventures.

Like the participant, the researcher did not over prepare, to ensure that the interview was not consciously or unconsciously the confirmation of previously held views or conclusions drawn from other sources. For serial entrepreneurs who had been interviewed before by a journalist, the article and other information available in the public domain were reviewed for basic facts as preparatory work. This basic preparation was used to build rapport and also triangulate some of the responses to interview questions. None of the relatively short press articles or other information available addressed any of the research questions of this study.

Semi Structured In-depth Interviews

The chosen research method is the semi-structured qualitative interview lasting an average of one hour forty-five minutes. The entrepreneurs were all interviewed in their own setting of an active and at that time successful venture. In total, over 50 hours of recorded interview material was collected and transcribed. Informants reflected on a series of actual opportunities they had initiated including the current venture. There were no hypothetical or unrealistic situations to generate false data, such as ideas for opportunities that did not result in new ventures.

Qualitative interviewing is useful for accessing individual's attitudes and values that cannot necessarily be observed or accommodated in a formal questionnaire (Byrne, 2004). Moreover, semi-structured interviews produce a session where most of the informant's responses cannot be predicted, and the interviewer has to improvise in response to what is said (Wengraf, 2001).

Improvisation assists in obtaining in-depth responses that explore experiences and meanings. In-depth interviews vary from more structured forms of qualitative interviews that focus on pre-designed questions that test hypotheses and evaluate theory (Seidman, 2006). Successful semi-structured interviews require preparation, discipline and creativity during the interview, and also more time for analysis afterwards (Wengraf, 2001). In this type of interview, validity and reliability depend not upon the repeated use of exactly the same words each time the question is used, but upon conveying equivalence of meaning (Denzin and Lincoln, 2011).

The usefulness of essentially a shortened life history of a career elicited through semi-structured interviews is open to several criticisms. Rosa's (1998) seminal study uses entrepreneurial life history data as the primary means of information capture. Rosa advises that properties of the technique are fully recognized by the researcher in both analysis and interpretation. In particular, the goals of the entrepreneur, his or her life experiences, and the context in which the interview is given and conducted, can have a significant effect on what and how things are reported. They may deliberately deceive or self-deceive, and their willingness to divulge sensitive information may vary (Rosa, 1998). Also, and of importance for this study, the interview may provide opportunities for the entrepreneur to rationalize success or failure, through retrospective sense-making. Of course, many of the critical events recounted occurred many years in the past. Data gathering by interviews is open to the claim that the data is biased by impression management (Eisenhardt and Graebner, 2007). Timmons (1999) suggests that successful entrepreneurs may take responsibility to renew and perpetuate the system that has treated them well. The letter of invitation which said that contributions would assist new entrepreneurs was designed to be neutral and elicit both positive and negative advice. Despite the potential for bias, practicing entrepreneurs are able to report reasonably accurate assessments of their own activities, Ozgen and Baron (2007), and key informants can provide reliable information about the organizational characteristics of their firms (DeTienne and Koberg, 2002). In retrospect, the confidential and academic nature of the interviews was key to the quality of the contributions.

6.3.3 Conduct of the Interview

Only through rapport and careful management of the interview process could sources of bias be identified and where possible reduced. Using two sample frames provided a balance of entrepreneurs with different experiences of being interviewed. Clearly, the serial entrepreneurs who had given press interviews had experience in responding to questions about their current venture, their entrepreneurial philosophy and their life history. None had previously been asked to reflect upon previous ventures in any depth. Even with the promise of confidentiality some were

guarded in their comments until rapport and trust was established. Most were very candid about problems that typically do not feature in press articles, such as mental and physical health issues, family issues, and the fraudulent behaviour of former partners and trusted employees. A few had very strong personalities and wanted to communicate their own philosophy of entrepreneurship. The researcher, having some relevant business experience, was able to bring the discussion back to the semi-structured format. The serial entrepreneurs were not asked very detailed questions about the financial performance of their ventures in case they became defensive or suspicious. If this information was not revealed in the natural course of the interview it was asked for later by email. However, not all entrepreneurs were prepared to volunteer all financial information. The study's research questions or the areas of academic debate were not revealed prior to or during the interview. The researcher declared that he had an open mind and wanted to capture the subject's authentic experience. This ensured the interviewee did not debate the validity of the research questions nor try to answer them directly.

Conduct of the Interview

The main determinant of the length of the interview was the number of ventures initiated by the serial entrepreneur. If the entrepreneur made statements that seemed to contradict other information given in the interview these responses were challenged. It was important to show the participant that the researcher was listening and would not necessarily wait until later to iron out any inconsistencies in the interview. Comparative questions, such as those focussed on similarities and differences between start-ups and exits, were used to encourage the entrepreneur to reflect more deeply. One of the most interesting aspects of the interview was the responses to the questions on the origins of opportunities and sources of information where the entrepreneur was unaware of the academic debates surrounding this topic. Overall, the researcher was struck by the modesty of the serial entrepreneurs, most not thinking they had done anything especially unusual or exceptional.

Process Analysis vs. Critical Incidents

Critical incident analysis of start-ups, exits and other important events was used to improve the data gathering method. Critical incident analysis (Chell, 2004) investigates significant occurrences (events, incidents, processes or issues) identified by the respondent, the way they are managed, and the outcomes in terms of perceived effects from the perspective of the individual. Chell (2015) considers the critical incident technique to be more powerful than the interview and can be used for both positivist and interpretivist research. Venture start-ups and successful or unsuccessful exits,

decisions to return, and the break-up of relationships are all critical incidents. This technique has been used in entrepreneurship to investigate learning (Cope, 2003; 2005), learning from failure (Cope, 2011) and opportunity recognition (Chell, 2015). The use of critical incident interviewing allows the researcher to ask probing questions to fully examine these incidents. The critical incident format of the questioning was designed to reveal the process of opportunity recognition and exploitation through venture initiation, development and exit. The fact that both the founding and exit of ventures are 'critical' incidents means that subjects usually have very good recall, and if full and precise details are given, it can usually be assumed that this information is accurate (Chell, 2004).

It was anticipated that there would not be enough time to identify and discuss many specific elements of each venture. Instead, a mixture of direct and indirect comparative questioning was used to reveal how each venture was structured and managed operationally, focussing on two different functions, marketing and finance. Questions aimed at identifying the principal stakeholders involved and what they did, allowed both the researcher and participant to find similarities and differences between the ventures without resorting to direct survey-like questioning. To maintain rapport and engagement with the data gathering process, the researcher respected the subject's time. When the participant was showing signs of fatigue some of the more general questions were omitted. This and other slight changes in the research design are reflective of the nature of qualitative inquiry, which is understood to be flexible and emergent (Patton, 2002). A number of the serial entrepreneurs remarked in the wrap-up after the interview that they had not been questioned in this way before and how it had made them think about their experience in a different way.

Respondent and Researcher Bias

The challenge of interview data is best mitigated by data collection approaches that limit bias (Eisenhardt and Graebner, 2007). The researcher reflected on the subject of respondent bias. One entrepreneur wanted to emphasise his academic knowledge of entrepreneurship and exhibited some defensiveness in respect of the researcher's line of enquiry. Later the data analysis confirmed that this entrepreneur's responses were consistent with the overall sample. As Prus (1996) pointed out, any attempt to put pre-existing notions in suspension in order to maximise openness is still guided by aspects of the interviewer's pre-conceptualisation. Overall the researcher is confident that while the process is imperfect no substantial bias occurred. Of great assistance here was the factual quantitative data gathered about each venture, often before the interview, that provided the longitudinal spine of the data gathering process, enabling entries to be matched with exits using

dates, generating many comparative and descriptive questions unique to each interview. Much of this data could be triangulated using public sources of information. There was no incentive to embellish this data, and it was only in the area of business failure that the researcher felt participants may have been holding back. Not all unsuccessful ventures were reported immediately, some arose from discussion about the sequence of ventures.

Summary

The population of interest is serial founder entrepreneurs starting at least two businesses, exiting at least one. Purposeful sampling strategy was used using two unrelated frames to widen the sample characteristics. Critical incident analysis focussed on start-ups and exits was used to enhance the interview process. The semi-structured interview was tested and modified and much care taken to build rapport during the process. Confidentiality was important in obtaining engagement in the process and establishing rapport. The risks of bias in the process were documented and managed proactively using a combination of testing, previous experience, indirect and comparative questioning, and triangulation. Only in the area of business failure and financial information was information withheld.

6.4 Section 5. Data Analysis

6.4.1 Data Analysis Techniques

Miles and Huberman (1994) define qualitative data analysis as consisting of three concurrent flows of activity: a) data reduction, b) data display, and c) conclusion drawing and verification. Data reduction selects, simplifies, abstracts and transforms the data that appears in interview transcriptions and other data sources. Data reduction is not separate from analysis. It occurs continuously even before the data is collected. Anticipatory data reduction occurs when the researcher chooses the research questions, the conceptual framework, and the type of cases to include. The data reduction process continues until a final report is completed (Miles and Huberman, 1994).

With qualitative research, it is impossible to provide the full evidence in a manner that is immediately accessible to the reader (Goulding, 2000). Display compresses information to permit conclusion drawing. In this study, across-case analysis is a major goal of the research. Yin (1981) recommends that such a study might consist of brief summaries of individual cases, followed by across-case analysis. Display is not separate from but part of analysis (Miles and Huberman, 1994). Drawing conclusions and verifying them requires the noting of patterns, explanations, causal flows

and propositions where the competent researcher holds these conclusions lightly (Miles and Huberman, 1994). What is included is selective, but still presented in such a way as to create a meaningful picture. Lists and diagrams are used to illustrate the emergence of key findings and theory supported by case examples at critical junctures in the development of insights (Yin, 1981).

6.4.2 The Data Analysis Process

As previously noted, over 50 hours of interviews were recorded with the researcher also making notes during the interviews. Once transcribed, following Creswell, (2009) the interviews were read several times to develop a frame of reference and sense of the overall data. The data analysis method was a mixture of activities using grounded theory and the constant comparative method of analysis (Glaser and Strauss, 1967; Strauss and Corbin, 1998). The activities included: 1) gathering descriptive statistics concerning the entrepreneur and their ventures, 2) analysing the transcripts for common cross-venture elements that formed the coding scheme, 3) visualising the venture sequences to address the research questions, 4) categorising, tabulating, and recombining evidence to group and cluster ventures according to their venture creation strategies and tactics. The data analysis revealed many findings not anticipated in the original research design, including patterns in the sequence of ventures, and the impact of breaks and interludes between start-ups. It was not until later in the data display that the researcher showed the tendency described by Yin (2014) to build new and general explanations that fit each of the individual cases, even though the cases vary in their details.

Coding

This research design was led by semi-structured thematic pre-coding using the research questions, interview questions and assumptions in conjunction with a flexible and emergent inductive approach to data analysis recommended by Yin (2014). Following Smith and McKeever (2015) the process was in three stages: 1) combining pre- and open-coding to find a consistent story within the interview fragments, 2) axial coding for comparing interviews and identifying conceptual patterns, and 3) triangulating by comparing sources from emerging categories. The coding scheme soon deviated from the original research design and the analysis developed into a multi-stage thematic analysis (Flick, 2009) across and within cases. Reliability was established through a common case study protocol and a case study database (Yin, 2014). The case study information database kept all the voice files, transcripts and other sources of data. The analysis used a spreadsheet to construct a matrix or 'table shells' (Miles and Huberman, 1984) to record and distil data. These outlines ensured that the data collection was focused on the process of opportunity recognition, venture creation and

exit over each career. The interviewees were sent a copy of the transcript and requests for clarification by email. No changes were requested.

Computer aided qualitative data analysis software (e.g. NVivo) was not used, as the linkages between businesses are not always evident in the transcripts and mix of data types used. Following King (2004), the researcher immersed himself in the data so as not to miss a key part of the analysis and interpretive process. Summaries and quotes from the transcripts were transferred to a spreadsheet for sorting and comparison. The rows were the codes and sub-codes from the interview structure. A set of columns was set aside for each case interview to facilitate across-case comparison. The interviews were entered in the order that they were made. Within the set, the entrepreneur's ventures occupied the columns arranged in chronological order, earliest venture first. Each passage of text was coded according to the questions and sub-questions in the interview schedule to compare within-case and across-case passages. Further codes were added when interview data could not be coded with the existing coding structure. When complete, each code was examined across all ventures in all cases to derive summary findings. The summary findings were written up and then cross-checked to the coded spreadsheet and when necessary for further clarification to the interview transcripts.

In the next stage of thematic analysis, summary information about the 26 entrepreneurs and 116 ventures was extracted and compressed into a second set of spreadsheets for display and further analysis. This analysis used the established quantitative counts and descriptive statistics about each venture from duration to innovativeness, providing a positivist contextual framework within which to place the entrepreneur's oral history. Thus the analysis presented is a mutually supporting blend of qualitative and quantitative, positivist and interpretivist information.

As previously explained, construct validity was established by using multiple sources of evidence using techniques selected from the relevant literature (e.g. Chandler, 1998; Chandler, Douglas and DeTienne, 2005; Shane, 2003; Venkataraman and Sarasavathy, 2001) to create a chain of evidence. These spreadsheets facilitated within case and across-case analysis of all first ventures, all failed ventures, type and stage of industry development, and the similarity of preceding with subsequent ventures. Summary descriptive statistics were produced and data analysed to check the veracity of the postulates.

Modes of Venture Creation

In the next stage, modes of venture creation were induced. The individual cases were grouped into types (Flick, 2009), using the constructs of habitual entrepreneurship defined in the literature review. The ventures were clustered and grouped independently using the origins and relatedness of start-ups to previous ventures. In some ways similar to the 'entry wedges' of Vesper (1980) they were also inspired by the constructs of Low and Abrahamson (1997) and Chandler, Douglas and DeTienne (2005). These included clones, replications and adaptations of other enterprises in the serial entrepreneur's career. These clusters of venture types are those made in the subjective judgement of the researcher. Further contributions to knowledge were induced by plotting the relationship between types and previous venture exit conditions, either success or failure. Postulates of existing theory such as related diversification were checked deductively against the sequence of ventures, and also the induced venture types to generate further insights.

The pieces of information were also compared to alternative propositions to determine the degree to which they were consistent with alternative explanations. Outcomes due to pure chance and serendipitous luck have a strong tradition in the entrepreneurial literature (e.g. Baron and Ward, 2004; Fiet, 1996; Kirzner, 1973). Conclusions were formulated and checked using Booth, Colomb, and Williams' (1995) argument formation and warranting methodology. The analysis conveys patterns that are supported by the evidence and could be tested by other studies. The process continued through to the writing up-phase. The modes of venture creation are a major finding of this study. Accordingly, further exposition of the data coding, cross tabulations and analysis process used to derive these and other findings is given at Appendix III.

Summary

Over 50 hours of interviews were recorded and the transcripts were fed back and additional data gathered by email. Both cases and sub-cases of the genealogy, development and outcomes of each venture are used for case comparison and survey, both longitudinally and in cross-section to isolate critical events and data points in respect of venture initiation and exit. The results were analysed using a constant comparative method once all the transcripts had been analysed. Additional codes were developed through a matrix of all cases held in a spreadsheet. There were two basic stages; breaking each case into different components, and then displaying all entrepreneur and venture sub-case analysis. The qualitative and quantitative data were used together and were mutually supporting. Constructs used were drawn from the literature, some modified and others invented

(induced) during the analysis process. The structuring and discussion of the results continued throughout the write-up stage.

6.5 Section 6. Credibility: Validity and Reliability

Validity and Reliability

Validity is the extent to which researchers are able to use their method to study what they had sought to study and reliability requires repeatability in a process to obtain very similar results. Together validity and reliability form the overall credibility of the research.

Derived from Patton (2002) the following table compares alternative sets of criteria for judging the credibility of research.

Logical-positivist Paradigm	Phenomenological-interpretivist Paradigm
Internal Validity	Credibility (of sample and researcher)
External Validity	Transferability
Reliability	Dependability (Systematic process) Authenticity (Reflexive consciousness and fairness)
Objectivity	Confirmability
Overall Rigour	Overall Trustworthiness

Table 6.2 Credibility of Research Process Criteria

6.5.1 Validity

Validity is the extent to which researchers are able to use their method to study what they had sought to study rather than studying something else (Gummesson, 2000). Validity addresses whether you are observing, identifying, and measuring what you intended (Mason, 2002). Yin (2014) stresses the importance of internal validity of case study research in order to increase the rigor of the approach. He also emphasises the importance of external validity which is especially relevant for multiple case studies through replication and extension.

In Patton's framework, external validity is replaced by transferability. Transferability is the degree to which the results of qualitative research can be generalized or transferred to other contexts or

settings. Transferability is enhanced by accurately describing the research context. The researcher making the transfer of the results to a different context is then responsible for making the judgment.

Effort was made to define valid constructs in Chapters 2 and 5 with which to conduct the research. Internal validity is protected by taking a longitudinal rather than a cross-sectional approach, having high quality interviewing skills, and immersion in the field of habitual entrepreneurship prior to data gathering and triangulation (Yin, 2014). The study used proven methods and constructs. Data was closely linked to findings to ensure that others could make a similar study. Reliability is supported by having a clear audit trail and a detailed account of the research paradigm, method, data gathering and analysis.

Internal validity is also related to the credibility of the sample and the trustworthiness and competence of the researcher, even though they have limited time with their subjects (Patton, 2002).

Credibility of Sample

The sample size of serial entrepreneurs is comparable with other published qualitative studies of habitual entrepreneurs. The sample of 26 cases is the same as the largest study of this kind, which gathered one hour interviews compared to an average interview length for this study of 1.75 hours. The 112 sub-cases of start-up ventures exceed other qualitative studies of all types of habitual entrepreneur. The variety of industries represented and the variety of career lengths and start-up experience all indicate a sound and credible sample that avoids documented issues with self-employment data. The sample also includes cases that have been removed as outliers or duplicates in quantitative research studies. The summary statistics indicate that the ventures are in line with, and therefore the sample may be representative of, small sized venture creation activity in the UK.

Skills of the Researcher

Credibility assumes that the researcher has the skills and ability to conduct a rigorous study. The researcher has conducted field research in the past, and has extensive interviewing experience. The researcher has worked in senior executive teams, with angel investors and entrepreneurs, has started two businesses and has taught entrepreneurship to undergraduate and postgraduate students. Moreover, the researcher has worked in the software industry with a number of entrepreneurs in the start-up and development phases of new ventures.

Actions Taken to Improve Validity

To limit the threats to internal validity in this research study, the following actions were taken:

1. The interview transcripts were sent to each of the twenty-six participants, asking for verification of their accuracy and for any additional comments on their opportunity recognition experiences and the interpretation of the information (Creswell, 2009; Strauss and Corbin, 1998).
2. Preparatory and follow-up questions were sent by and replied to by email and added to the transcripts.
3. All cases were analysed, including five cases outside the sampling parameters for serial entrepreneurs. Therefore, disconfirming information (Mason, 2002) and negative cases (Patton, 2002) have been included in the narrative of this study. The five cases of other forms of habitual entrepreneurship were analysed to the same extent as those of serial entrepreneurs and the results compared to those of serial entrepreneurs.
4. The conclusions show a number of different classifications of serial ventures. Where there are exceptions to these broad categories alternative explanations are offered. Tentative findings that could not be assessed from the evidence were noted, and all topics for further research are clearly indicated.
5. To check for accuracy, the outcomes were compared to the published literature (Strauss and Corbin, 1998), and rival explanations were analysed (Yin, 2014). In general the results are explicable by current theoretical and empirical predictions. However, the study adds to the habitual entrepreneurship literature in respect of the specific and distinct sub-group of serial entrepreneurs and the importance of either successful or unsuccessful exit on venture choice. The only rival explanation would be that the patterns discerned are the result of another as yet unknown or random process.
6. Triangulation was achieved combining multiple cases, observers, theories, methods and data sources, to overcome the intrinsic bias that comes from single methods, single observer and single theory studies (Patton, 2002).

In this exploratory research a multiple theoretical and analytical approach was employed. The results are a mixture of qualitative and descriptive quantitative data from the same source. The research relies in the main on individual 'lead' entrepreneurs as informants. In approximately 25% of the cases alternative perspectives were obtained. Two entrepreneurs were interviewed twice. In two other cases partners were interviewed separately.

Five anonymised transcripts were given to entrepreneurship students to analyse and assess the degree to which ventures were related. They reached similar conclusions about the data, but without a similar knowledge of the literature were unable to confirm the study findings. Interviews were checked against other public documents, including press articles and company web-sites. A review of the key findings by three of the participants was held while maintaining confidentiality and anonymity.

7. The sample was checked for purposeful sampling issues (Patton, 2002).

Selected entrepreneurs who did not respond to the first mailing were mailed again to ensure they did not want to participate. For those who contacted the researcher but still did not participate, either other commitments or the estimated length of the interview at over an hour and a half were the reasons given. There is no evidence that the non-participants affected the representativeness of the sample.

8. The process was reviewed for research bias and reactions of the participants. For example, information given to outsiders is not the whole truth (Rosa, 1998; Silverman, 2010; Timmons, 1999). The researcher both listened and engaged by checking subjects' answers, revealing interpretations neutrally and seeking agreement and disagreement. There is some evidence that the researcher established good rapport and trust as some entrepreneurs disclosed very private and personal information.

9. The process was also reviewed for predispositions, selective perceptions and bias of the inquirer (Patton, 2002) and also the subject. The researcher wrote up impressions of the participant entrepreneurs after each interview. The combination of qualitative and quantitative information compensated somewhat for potential bias emanating from a single type of data. However, the analysis and interpretation of the data to form conclusions remain largely that of the researcher.

6.5.2 Reliability

Reliability, in qualitative research, requires that two or more researchers studying the same phenomenon with similar purposes should reach approximately the same results (Gummesson, 2000). The threats to reliability in this study were addressed in the following manner:

1. A complete and accurate account has been prepared of the study procedures and exactly how the researcher's positions, assumptions, bias and values influenced the selection of the sample, the data generated, and data analysed (Creswell, 2009; Mason, 2002).

2. To substantiate the trustworthiness and rigour of the data analysis, a review of the study was organised for independent academics and PhD students. A summary of the study and its results was presented in papers to two academic conferences in entrepreneurship in May and November 2015.

Summary

Together validity and reliability form the overall credibility of the research. The study has a large and wide sample of serial founder entrepreneurs and new start-up ventures compared to other qualitative studies. The sample contains several cases of other types of habitual entrepreneurship which strengthen the comparative aspects of the analysis. The summary statistics indicate that the ventures may be representative of the UK small enterprise sector. The data and findings could be representative of serial entrepreneurship such that the new postulates and calls for further research are valid and worthy of further research. The methodology is fully documented and repeatable. The analysis contains the subjective analysis of both the researcher and the researched, supported by descriptive statistics of the entrepreneurs and their ventures. Other researchers are invited to repeat the methodology, test and extend these postulates.

6.6 Chapter Summary

The research paradigm and methodology reflect the literature's calls for more qualitative longitudinal studies in the interpretivist tradition. This exploratory study of serial entrepreneurs employs a pragmatic approach to answer the research question in the critical realist tradition. The method combines qualitative and quantitative types of data and positivist and interpretivist techniques. Serial founder entrepreneurs were considered to be a hard to reach group that would necessitate a low sample size. Against this there was determination to collect, not only the subjective views, but also positivist data about serial entrepreneurs and their ventures. Accordingly, the method uses a pragmatic case study approach to analyse the careers of a heterogeneous sample of serial entrepreneurs and a small number of other cases of habitual entrepreneurs. Data collection was primarily through semi-structured interviews and the data was analysed manually in spreadsheets using the constant comparative method. It recognises that the researcher and the researched interact. The interpretive contribution is both supported and held in check by the quantitative data of a sizeable sample, demonstrating the benefits of mixed methods. Overall, following Robson (2011), the method was prosecuted systematically, sceptically and ethically in the pursuit of new and useful knowledge.

Chapter 7 provides the data analysis and research findings, and overall outcomes of the study.

CHAPTER 7

Data Analysis and Research Findings

This chapter presents both the analysis and findings of the exploration of 21 cases of serial entrepreneurship, supplemented by 3 cases of portfolio entrepreneurs and 2 additional cases of habitual entrepreneurs who have a mixture of repetitive entrepreneurial experience including acquisitions. The research outputs are discussed, interpreted and conclusions drawn.

The principal research question is: How are the ventures of serial starter entrepreneurs related to one another? The detailed review of the literature suggests four themes and a set of more detailed research questions are important in addressing the larger question. These themes and detailed research questions are set out in Chapter 5 and the research methodology in Chapter 6. These four themes signpost and structure the research findings.

Theme 1. Serial entrepreneurship is a form of economic selection. Serials are unique in their frequent exit from the firms they founded. How are serial entrepreneurs matched with opportunities that best fit their entrepreneurial human capital? Failure is considered likely. Why does it occur and how do serial entrepreneurs deal with its consequences, learning from both failure and success.

Theme 2. Theory and evidence suggests that serial entrepreneurs will follow a relatively narrow path of related ventures. However, exit may make serial entrepreneurs more likely to change direction and follow unrelated corridors.

Theme 3. If serial entrepreneurs create a high proportion of new firms then how, when and why do they found innovative ventures?

Theme 4. Portfolio entrepreneurship is considered an economically superior form of entrepreneurship. Are serials always at an economic disadvantage? More can be learned from comparing examples of portfolio with serial founding.

Chapter Structure

Part 1 - Examines the nature of the sample and the important distinguishing feature of serial entrepreneurship – venture exit (Theme 1).

Part 2 - Answers the principal research question using constant comparison of case material (Themes 1-4).

Part 3 - Examines the applicability of corridor theory (Theme 2).

Part 4 - Explores the nature of innovation (Theme 3).

Part 5 - Debates the differences and similarities of serial and portfolio entrepreneurship (Theme 4).

Chapter 7 concludes with the main contributions of the thesis.

7.1 Part 1. Section 1. Key Characteristics of the Sample

7.1.1 Persistence, Career Success and Venture Failure

Persistent and Currently Active

This thesis is a study of the careers and ventures of surviving 'persistent' serial founder entrepreneurs still active and exercising ownership and control of a then current business in 2014. To qualify for the study all had to be currently active in entrepreneurship and have owned and controlled at least two businesses and experienced at least one exit. Therefore, there are no retirees or former entrepreneurs who have exited permanently from entrepreneurship in the sample. Consequently, the sample is subject to survivor bias (Wiklund and Shepherd, 2003) where generalisations can thus only be made about similar groups of persistent serial entrepreneurs.

Successful

By dint of their persistence, experience and having a current healthy business, they considered themselves as both successful people and to a greater or lesser extent expert. Therefore, the study may also be accused of a common bias in the entrepreneurship literature of only investigating successful cases after completion (Davidsson, 2004).

Venture Failure and Successful Careers

Notwithstanding the assessment that the sample of entrepreneurs had up to the time of the study successfully constructed successful careers, it is essential to note that this study is not restricted only to surviving ventures. It includes a significant number of closed ventures (25%) and outright failures (15%). Even in the few cases where serial entrepreneurs had experienced venture closure or failure but not yet a successful exit (Cases 1, 3, 8, 15, 16, 18), all had achieved profitable and growing businesses at the time of the study.

Entrepreneurial Expertise: Founding Experience

The number of start-ups is a very specific form of entrepreneurial human capital (Stuart and Abetti, 1990). If founding three or more businesses is an accepted standard to achieve expert status (e.g. Baron, 2006, Baron and Ensley, 2006), then over 80% of the entrepreneurs in this study can be classified as expert entrepreneurs. Half the sample founded four or more ventures, nearly 40% six or more ventures (see Table 7.1). This compares favourably to Schollhammer's (1991) seminal study in which 14% of multiple entrepreneurs founded four or more ventures. The most experienced founder (Case 1) started 10 separate enterprises over 42 continuous years in entrepreneurship.

As covered in the discussion of the literature, simply counting the number of start-ups measures just one aspect of entrepreneurial expertise. In this study, the four cases of serial entrepreneurs founding the minimum of just two enterprises (Cases 3, 8, 14, 25) and exiting just one, possessed an average of 33 years experience.

Founding Frequency	Number of Entrepreneurs
7 or more	2 (8%)
6	7 (29%)
5	3 (12%)
4	4 (17%)
3	4 (17%)
2	4 (17%)
Total	24

Table 7.1 Distribution of Founding Experience

Being a relatively rich sample from the perspective of start-up expertise, the across-case analysis benefits from having a number of ventures in each stage or sequence in a career (see Table 7.2). Of course the number of start-ups at each stage declines in step with the count of entrepreneurs with progressively higher levels of business creation experience.

Venture Sequence	Number of Start-ups
1 st	24 (21%)
2 nd	24 (21%)
3 rd	21 (19%)
4 th	17 (15%)
5 th	12 (11%)
6 th	9 (8%)
7 th and above	5 (4%)
Total	112 (100%)

Table 7.2 Distribution of Founded Ventures

7.1.2 Actual vs. Planned Sample of Serial Founders

While this thesis is principally a study of serial starter (founder) entrepreneurs, a number of other sub-types of habitual entrepreneurship were sampled inadvertently. Three founders who were initially thought to be serial entrepreneurs were found at interview to have built and managed portfolios of ventures. Furthermore, two entrepreneurs with multiple firms of which only one was founded are also referenced in this study.

While not intended, the contribution of the five other cases of habitual entrepreneurship proved invaluable in improving the internal validity of the study. The inclusion of portfolio entrepreneurs resulted in a useful addition to our knowledge and an ability to contribute empirically and theoretically to the discussion of the economics of serial vs. portfolio entrepreneurship (e.g. Iacobucci and Rosa, 2005; Parker, 2014).

In aggregate then, the study sample consists of 26 separate career histories and venture genealogies of habitual entrepreneurs working as individuals or in small teams of full-time owner/managers. The sample size exceeds most other case studies of habitual entrepreneurs.

7.1.3 The Sample Ventures: Characteristics

It was in the interview process that the entrepreneurs alone identified their ventures in which, as the interview question asked, they had “acted entrepreneurially, either alone or with other entrepreneurs” i.e. in small teams. To maintain consistency in the case analysis, some relatively minor childhood ventures and short-term property investment businesses and periods of self-

employment were all excluded from the analysis of their ventures. In addition, other career ventures were excluded where the entrepreneur was employed as the Chief Executive Officer (CEO) in a business already established and trading for over one year. Though having a minority stake, these ventures were not founded by the individual and they joined after the start-up phase. All senior managerial roles of this type were classified as employment for the purpose of the analysis. Therefore, of 125 business ventures identified by the entrepreneurs, 116 are analysed. All the ventures analysed were legally formed firms with several employees. Of these 112 were start-ups.

The entire sample of entrepreneurs and their ventures studied is illustrated below.

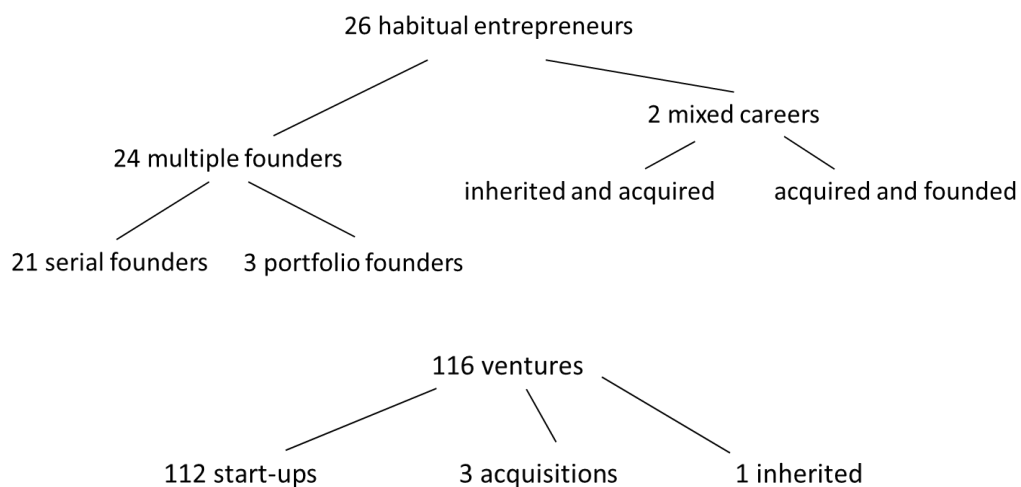


Figure 7.1 Habitual Entrepreneurs and their Ventures

In addition, for reference purposes, a thumbnail sketch of each case is given in Appendix II.

Venture Size: Employment and Turnover

The literature frequently cites the economic importance of habitual entrepreneurship. In total the enterprises analysed created around 4000 jobs, an average of 36 employees per venture with a wide range from just 1 or 2 employees to over 100 employees at their peak. Peak reported venture turnover averaged £7.5 million, again with a wide range. Both averages of turnover and employment are in the middle range of the then current EU definition of small medium sized enterprises (SMEs), above micro but below medium sized enterprises. This suggests that the case studies cover a range of enterprises that may be representative of small businesses in the UK.

Venture Age and Quality

The mean age of all ventures as measured by the length of time owned and controlled by the entrepreneur, including the then currently active (un-exited) ventures, is just over 7 years. Nearly all

of the ventures sold as going concerns were still in existence in 2015, indicating that the ventures exited by sale were of high quality as predicted by Holmes and Schmitz (1990; 1995).

Industry Sectors

An important feature of this study is the range of industries represented in the study. Many studies of habitual entrepreneurship referenced in the literature review are confined to a specific industry, with high growth and high technology sectors been favoured by researchers. Using Gompers, Kovner, Lerner and Scharfstein’s (2010) classification, the ventures analysed operated in the industry sectors shown below.

Industry	% of Businesses
Consumer	30%
Business Services	40%
Internet and Computers	25%
Other	5%

Table 7.3 Distribution of Founded Ventures by Industry Sector

Nevertheless, these broad classifications do not convey the wide variety of businesses represented in the study. Enterprises range from executive recruitment, software and mobile app development, fast food, alternative energy, music publishing and ‘big data’ IT solutions. A wide range of business models are represented including: manufacturing, licensing, franchising, distribution, brokerage, internet intermediation and dis-intermediation, software as a service and cloud computing services. In accordance with the discussion of definitions and the appropriate unit of analysis in Chapter 3, professional services such as accountants and lawyers were excluded. By the nature of their vocational training and qualifications the professions are not usually associated with the recognition and pursuit of new opportunities through multiple start-ups and exits.

The ventures are 60% business to business and 40% business to consumer in market orientation, although a number of enterprises served both classifications of purchaser. Interestingly, in relation to the corridor principal (Ronstadt,1986; 1988), the type of purchaser does not appear to have a strong impact on venture choice. 75% of serial entrepreneurs started ventures in both business and end-consumer markets, with the remaining 25% ventured exclusively in business to business markets throughout their entrepreneurial careers.

Geography

The geographic scope of markets served is UK centric but also includes the analysis and discussion of new international ventures founded to serve markets in Europe, USA and Australia.

Environmental Conditions

Another key aspect of this study is the longitudinal nature of the case analysis so frequently called for by the extant literature. From an historical perspective the aggregate genealogy of the ventures spans the period 1972 to 2014. The mean and median start years are 1998 and 2000 respectively. The years 2000 and 2008 are the years most frequently cited for venture start-up. The earliest exit is 1974; the mean and median exit years are 2000 and 2002 respectively. The years 2000 and 2008 are the modal years for exit. The small positive skew in the age range of the venture reflects a tendency in the sample toward more recent and hence younger start-ups as is consistent with a sample of still active multiple entrepreneurs.

The entrepreneurial literature emphasises the importance of exogenous contingent factors on entrepreneurial activity and decisions (e.g. Schumpeter, 1934; Low and Abrahamson, 1997). This period of economic, business and social change includes a number of exogenous trends and shocks recounted by the entrepreneurs in their interviews. The mean start and mean exit years coincide with the height of the 'dotcom boom' and the soon following 'dotcom bust', a factor mentioned by many entrepreneurs even when they did not have internet related start-ups and exits. Given below are the salient environmental conditions mentioned by the entrepreneurs.

1.	Integrated computer processor design and manufacture.
2.	Mainframe to mini computing and associated software development.
3.	Mini to micro computing and associated software development.
4.	Convergence of analogue voice with digital data networks.
5.	Computer Numerical Control (CNC) manufacture.
6.	Computer aided design and manufacture (CAD/CAM).
7.	Document scanning and other forms of digitisation.
8.	Multi-media publications e.g. CD-ROM and webpages.
9.	Internet marketing, e-commerce and on-line retailing.
10.	Digitisation of retail products e.g. music downloads, books, etc.
11.	Mobile telephony and associated software (app) development.
12.	Software as a service and cloud computing and data storage.

Table 7.4 Technical Trends

1.	Transition from the European Common Market to the European Union.
2.	The rise of brands and the decline of the small independent retailer.
3.	East Asia for low cost manufacturing.
4.	Rising energy costs.
5.	Ergonomic job design and health and safety for Western workforces.
6.	Aging population.
7.	Global warming and carbon reduction targets.

Table 7.5 Business and Socio-Economic Trends

7.1.4 Sample Entrepreneurs: Demographics

Gender, Age, Culture and Experience

The great majority of serial entrepreneurs interviewed are males, only 8% are female. The average age is 51 years old. The youngest is 27 and several entrepreneurs are in their 60's with only one contemplating retirement. Their total entrepreneurial experience averages 24 years, including interludes between ventures. The range is 5 to 42 years of experience, with the great majority founding their first venture in their early twenties. All but one entrepreneur is British born, and the majority of ventures are British enterprises serving home markets. In one case study the founder is EU born, founding a British business and several pan-European ventures.

Family Background and Upbringing

Researchers report that serial entrepreneurs may have less access to role models, mentoring, social networks and financial resources (e.g. Westhead, Ucbasaran, Wright and Binks, 2005). This study found no specific evidence to support this postulate. Several serial entrepreneurs started one or more ventures during childhood. Many received an early experiential education in entrepreneurship from entrepreneurial parents or siblings. Three were employed in family businesses. Others recounted being strongly influenced toward entrepreneurship by non-entrepreneurial parents. Of this group (50% of cases), many planned their entrepreneurial career in early adulthood and most shared the same sentiment of one who said, "I wanted to show the family I could do it".

Interestingly, all with this formative exposure to entrepreneurship through family members later felt the need to employ formal external mentors to assist them during their careers. Presumably they had learned enough or were more independent minded than other serial entrepreneurs. Further research is required to determine the actual reason.

Those without an early vocation or support for entrepreneurial ambitions judged entrepreneurship as a superior choice to waged employment. Two spoke of being driven by a "fear of poverty".

Several possessed no particular ambition to become an entrepreneur. These were all recruited to entrepreneurship as junior partners with a minority stake by the lead entrepreneur of their first start-up. One such employee turned entrepreneur was approached by a supplier, "Why don't you come and join me and set that up? So that is how I got into XYZ. And as the business grew, I ended up owning 10%."

Education

Wiklund and Shepherd's (2008) thesis is that general human capital will be positively associated with portfolio entrepreneurship, while specific human capital will be related to serial entrepreneurship. In this sample both the serial entrepreneurs and the much smaller number of other habitual entrepreneurs were on the whole well educated, with 70% having undergraduate or postgraduate degrees and/or professional qualifications. Further education tended to be in areas directly relevant to their entrepreneurial careers: engineering, economics, mathematics, accountancy and law. There is not enough evidence in the sample to support a contribution to the long running generalist vs. specialist human capital debate (e.g. Smith, 1967). As is detailed in the section on entry to entrepreneurship, the great majority started their entrepreneurial careers utilising specific human capital developed in employment or through personal interests.

7.1.5 The Use of Entrepreneurial Teams

There is increasing recognition in the literature that entrepreneurship is not always carried out by a lone individual (e.g. Westhead and Wright, 2011). Both ventures formed by teams and individuals are represented in the sample. There was a small majority of entrepreneurial teams over sole entrepreneurs. 44% of start-ups were led by individual owner managers, 56% by entrepreneurial teams.

Furthermore, 35% of start-ups were led by equal or near equal partnerships, including a small number of husband and wife partnerships. 15% of ventures were owned and managed by three or more entrepreneurs and 6% by four or more partners. Within partnerships and larger teams, roles were distributed among the members.

Interestingly, the general pattern was for serial entrepreneurs to keep the same form of ownership and control, individual or team, throughout their sequence of starts-up. When there were two or more owner managers, 70% of start-ups retained either exactly the same or a very similar team. This finding is consistent with Gemmill, Boland and Kolb (2012) who found that the majority of habitual entrepreneurs worked with the same trusted partner in multiple start-up ventures.

The case studies show a more nuanced view of the use of different patterns of ownership. Some entrepreneurs started with a partner and then bought out their share, maintaining the new pattern of sole ownership and control throughout their ensuing career (Cases, 2, 8, 15, 22). A technology entrepreneur was continually unsuccessful, but remained committed to the same equal partner. After realising his partner's shortcomings, commenting "I had an epiphany, I suddenly realised he wasn't offering anything," he dissolved the partnership, later finding success with a new partner.

Partnerships stem from a variety of antecedents. They could be siblings in a family business, friends who met when young at school or in the early stages of their career, through a mutual hobby, sharing accommodation, or other accidental social ties. The cases suggest that the strength of the partnership is founded on mutual dependence, each possessing complementary but different knowledge and other resources. In the most typical partnerships, two individuals would specialise in either the product development (the means) or in business development through marketing and sales (the ends). Sole entrepreneurs acting without equity partners had with one exception specialist knowledge of both means and ends. In the exception to this pattern (Case 11) the serial entrepreneur struggled to achieve success.

From the small sample of portfolio builders (Cases 9, 13, 24) repeated patterns of behaviour are again in evidence. One starter of parallel ventures always formed a collective composed of small groups of equal partners. Each venture had a different team composition but with some members in common. Whether intentional or not, in this way he built a complex web of shared interests that helped tie the portfolio of strongly related ventures together. Teams do not suit all serial entrepreneurs; in one exceptional case (Case 1) the entrepreneur left or changed teams in nearly every venture, until finally starting out on his own. In addition, if the founder had to work alongside managers put in place by VCs, or managers of the acquiring company, these arrangements also often had limited life spans (Cases 4, 7, 17).

7.1.6 Summary and Key Findings

- 1) The majority (80%) are expert entrepreneurs starting-up three or more businesses.
- 2) The sample of 26 case studies is multi-industry, longitudinal and broadly representative of UK small business serial entrepreneurship for the period 1972-2014.
- 3) There is not enough evidence in the sample to contribute to the generalist vs. specialist human capital debate. The sample entrepreneurs were in general well educated and all made use of specific education.

4) The comparative numbers of ventures formed by individuals, compared with partnerships/small teams are similar.

5) The stability of partnerships between ventures is consistent with the findings of Gemmill, Boland and Kolb (2012).

7.2 Part 1. Section 2. Serial Entrepreneurship: Venture Exit and Outcome

In this section, we look further into the entire sample using the lens of venture exit. The large sample of data is analysed using a pragmatic blend of positivist case study and interpretivist grounded theory. Serial entrepreneurship is fundamentally different from novice and portfolio entrepreneurship due to its repeating pattern of entry, exit and re-entry to firm ownership and leadership.

In this section analysis also contributes findings relevant to Theme 1. The entrepreneurial process does not end with start-up; it ends in exit (DeTienne, 2010). Following Holmes and Schmitz (1990; 1995), high ability entrepreneurs are expected to be observed starting high quality ventures that are likely to be innovative and acquired for high prices. In addition, low quality firms will be shut down to pursue superior opportunities (Plehn-Dujowich, 2010). The effects of outright failure are ambiguously treated in established economic theory, and following Jovanovic (1982), permanent exit from entrepreneurship is a very likely outcome.

7.2.1 Serial Entrepreneurship: Exit and Re-entry - Unsuccessful Exits

Research question 1.2 asks: How do future serial entrepreneurs transition from novice to serial entrepreneurs? The serial founder entrepreneurs, at least in this study, did not plan to become serial entrepreneurs at the outset of their careers. Serial entrepreneurship is an unplanned consequence of exiting the first novice venture.

Of course, none foresaw at start-up the outcome as an unsuccessful exit – a closure or an outright failure with significant economic loss. Nevertheless, a striking feature of this study is that overall the number of unsuccessful exits outweighs the number of successful exits by a ratio of 2:1 (Table 7.7). Even for successful careers failure of some form is a common experience.

Research question 1.5 asks: Is venture failure normal, i.e. the 'norm'? On the basis of this evidence it is. Furthermore, the general assumption that outright failure results in permanent exit is questioned. In this study, serial entrepreneurs can experience several negative exits in a successful career.

As can be seen from Table 7.6 below only a minority of founders have escaped some form of unsuccessful exit in their careers so far. The majority (80%) experienced some form of unsuccessful exit. Close to half (46%) experienced more than one unsuccessful firm.

Unsuccessful Exit Frequency	Number of Entrepreneurs
5 or more	1 (4%)
4	3 (13%)
3	2 (8%)
2	5 (21%)
1	8 (33%)
0	5 (21%)
Total	24

Table 7.6 Frequency of Unsuccessful Exit Experience

Research question 1.6 asks: Do serial entrepreneurs learn from failure? The answer must be yes. Because these careers also have successes, we can go further and also say yes in answer to question 1.7; it is correct that cognitively intelligent serial entrepreneurs transfer learning of success and failure to the next venture.

There is then prima facie evidence for a learning curve underpinning the development of the specific expertise of serial entrepreneurs. The process of recovery and learning from failure is an underappreciated entrepreneurial talent by the standards of (Lucas, 1978) and (Jovanovic, 1982). This finding runs directly counter to the ‘success breeds success’ conceptualisation of serial entrepreneurship, and its static view of innate talent (e.g. Chen, 2013; Eesley and Roberts, 2012; Gompers, Kovner, Lerner and Scharfstein, 2010). It provides compelling evidence for theories of entrepreneurial learning, especially learning from failure (e.g. Cope, 2011; McGrath, 1995; 1999; Sarasvathy and Menon and Kuechle, 2013; Stam, Audretsch and Meijaard, 2008).

The aggregate view of the sample of the serial entrepreneurs’ ventures and their status or outcome at the time of the study is given in Table 7.7 below.

Venture Sequence	Current (a)	Closed (b)	Failed (c)	Un-Successful Exit (b) + (c)	Successful Exit
1 st	4%	40%	16%	56%	40%
2 nd	28%	16%	16%	32%	40%
3 rd	29%	33%	10%	35%	29%
4 th	65%	18%	18%	36%	
5 th	55%	9%	36%	45%	
6 th	88%	12%		12%	
Total (100%)	37%	25%	15%	40%	23%

Table 7.7 Sample Start-Up Venture Outcomes

Learning from Unsuccessful Ventures

Table 7.7 shows that the majority, just over half (56%) of first ventures were unsuccessful. Early ventures, particularly the first novice venture are most problematic for future serial entrepreneurs 'to be'. This is to be expected as venture experience is least. In second ventures while failure rates are the same as novice firms, more second businesses survive to continue as current going concerns, whose ultimate fate is yet to be decided. There is then *ceteris paribus* evidence of learning from the first novice business.

This raises the important supplementary qualitative question as to what serial entrepreneurs actually learn from unsuccessful and successful ventures. This chapter provides a very detailed response to this question.

In aggregate, third businesses are similar to second businesses in their outcomes with a third being unsuccessful. This could be construed as indicating that learning flattens out. However, when the career of each entrepreneur is inspected, the frequency of outright failure tends to reduce as a career unfolds, while the level of ambition is at least constant. Qualitative patterns like this did not lend themselves to a clear statistical correlation (see Figure 7.3). Career paths are very idiosyncratic, and the sample is of different careers at different stages with a low number of data points for longer careers. Overall the evidence of a learning curve is not surprising. It is entirely consistent with the characteristics of a sample of persistent, surviving and still active entrepreneurs.

Toft-Kehler, Wennberg and Kim, (2014) find a declining then rising U shaped relationship between the venture sequence and venture performance, and postulate a lack of learning between the first

and second ventures. Here, in this study, it is the first novice venture that is most likely to have an unsuccessful exit. A possible reason is that the researchers decided to exclude similar businesses. They have been captured in this study as venture creation by internal replication, also labelled 'clones' or 'reboots'.

Unsuccessful Exit Classification: Outright Failure vs. Managed Closure

While 40% of start-up ventures ended in some form of unsuccessful exit, 25% of all start-ups were closed down in a managed way with either a manageable loss or at break-even. This latter category could be equated to Saravathy's (2001) construct of affordable loss. 15% were outright failures involving receivership (Cases 1, 3, 4, 6, 11, 15, 16, 18, 19, 20, 22, 23, 26), and for some personal bankruptcy. Businesses closed down in a managed way lasted on average 3.6 years. Failed businesses failed relatively quickly, on average 2.5 years from start-up. These statistics are consistent with Holmes and Schmitz's (1995) findings on failure and business age.

Under-Reporting of Failed Business

The number of failed businesses reported in the case studies may be less than the actual number in reality. Failed ventures were often not mentioned until the end of the interview when rapport had been established (Cases 1, 4, 18, 19, 23). International diversifications and new product related start-ups that ended in considerable losses were not reported initially as separate ventures. In some cases the ventures had been scaled down and put on a "back burner" but not yet formally closed.

Reasons for Unsuccessful Ventures

A small number of failed ventures (2%) were abandoned by one serial entrepreneur (Case 1) giving up his shares to the remaining partners following several personal disputes. This individual had small minority stakes compared to the other founding team members. From the conversations about disputes and team members quitting, it is in the first or second ventures that serial entrepreneurs are on a steep learning curve about the dynamics of partnerships and teams. Of all failed firms, a significant minority (32%) were caused by some form of fraudulent or dishonest behaviour by another partner or trusted employee (Cases 1, 4, 6). It should be noted that exit due to fraud had a more negative effect on entrepreneurs than other more normal causes of failure. Entrepreneurs expressed a great deal of remorse at exposing themselves and their employees to this type of event. One lamented, "It all closed down, ended up with a bloody mess. I was technically the owner of the business at the time, but this didn't do any good."

As the detailed analysis reveals, closure or outright failure is associated with unrelated diversifications where the entrepreneur was disadvantaged, lacking prior knowledge and other relevant resources at start-up. In 67% of failed and 60% of closed enterprises, the entrepreneur was missing at least one of Shane's (2000) types of prior knowledge: markets, means to serve and customer solutions (see Table 7.9). In other cases, the original opportunity or method of exploitation is fundamentally flawed. Due to a lack of information and business acumen, for one serial entrepreneur (Case, 15) several separate start-ups were required before these flaws became apparent to the entrepreneur.

International ventures were very prone to failure (Cases 18, 23). One of the three portfolio entrepreneurs in the study (Case 13) was especially prone to starting unrelated ventures, encouraged or led by external third parties pursuing their own objectives. This finding reflects prior research by Alsos and Carter (2006) and Iacobucci and Rosa (2004) where unrelated diversifications are attributed to government programmes.

Other research suggests that most terminations are voluntary quits rather than involuntary bankruptcies with many firms still profitable at termination (e.g. Bates, 2005; Headd, 2003; Levie, Don and Leleux; 2010; Taylor, 1999). However, in this sample of serial entrepreneurs, exits due to failure or closure were clear cut cases of financial infeasibility with little evidence for Rerup's (2005) 'gray' zone, except for business sold on to employees at book value when a new and superior opportunity was recognised. Serial entrepreneurs are more clear-cut in their decisions to exit.

Response to Failure

All the entrepreneurs affected said that outright failure is always extremely stressful and damaging to self-confidence, often terminal to many social and business relationships and damaging to their reputation. Two serial entrepreneurs disclosed that they had suffered severe mental health problems following failure. Financial losses had a very negative impact on their standard of living, self-esteem and personal relationships, and were a financial barrier to starting again. For example, "Most of the mates from the past, once they realised things weren't going very well, they disappeared" (Case 1). Nevertheless, all responded by simply starting another venture, often on shoestring budgets. The study captured two cases of serial entrepreneurs who exited from entrepreneurship and returned to employment for a while to recover emotionally, socially and financially before returning again to found another venture (Cases 15, 16). Failure can have positive aspects. A lack of liquidity following failure can stimulate entrepreneurial instincts. For example, "I

didn't have the capital to go and buy vehicles, but at least if we did leasing, the leasing company paid the dealer, and then I would have a commission from the finance company" (Case 1).

The effects of an outright failure are always serious. "It was personally and financially devastating". "My first venture 15 years ago lost 90% of our start-up capital" (Case 20). Despite complex factors surrounding a failure most took personal responsibility for the failure as the decision maker. "There were clear external circumstances but I held myself responsible. I knew it could have been a success if different decisions had been taken" (Case 3).

Research question 1.6 asks: Do serial entrepreneurs learn from failure? Serial entrepreneurs were unanimous about learning from failure. In some cases very successful relationships between business partners were forged when an initial venture failed. "We used it as a means to reduce the size of our founding team and to focus on a better, wider opportunity" (Case 20). "It taught my co-founder and I a lot about timing" (Case 26). "When starting again I was determined to learn from the previous mistakes, and I did" (Case 3). Many were able to reflect deeply upon it even several years after. "I think acceptance is a good word that supports failure, and as I would say in my case that the causes of failure are generally a mixture of responsibilities, external, internal and not managing risks" (Case 16). "Certainly the more time that passes since the event the easier it is to see a business failure in its right context" (Case 26). In one case external factors were critical; the government reversed policy and withdrew support to a fledgling renewable energy industry, a consequence of "Having too many eggs in the renewables basket" (Case 24). This vital lesson learned would not be repeated in future.

Learning from the critical event (Chell, 2004), especially outright failure appears not to be merely evolutionary or marginal, but causes transformational learning (e.g. Cope, 2011), a fundamental revision and reevaluation of previously held information about practices, assumptions and theories.

Response to Multiple Failures

Cases of multiple failure of successive business are rarely found in the literature. A contribution of this study is to explore the consequences of these sequences of ventures. From this study, two consecutive closures or failures are likely to cause serial entrepreneurs to exit entrepreneurship temporarily for an extended period of at least one year to recover (Cases 15, 16).

In one case study (15), a serial entrepreneur launched a third similar venture with some adaptations, only to fail yet again. Severely affected, this individual exited entrepreneurship to complete a long postponed undergraduate degree. Through retrospective analysis he realised that he and his partner lacked the necessary entrepreneurial ability/business acumen. Each of the three iterations

was an attempt to find a market, replicating and adapting various components from venture to venture.

Ultimately, the serial entrepreneur with a new partner capitalised on his hard won knowledge and technical skills in his fifth venture to start a highly successful international internet business in the same industry domain as the unsuccessful start-ups. His experience would doubtless 'knock-out' many other individuals. His passion for his chosen technology and his low need for income lowered his exit threshold (Gimeno, Cooper and Woo, 1997). Therefore, some serial entrepreneurs e.g. technophiles, with a low need for financial returns and a high level of persistence can eventually learn business acumen.

Implications for Entrepreneurial Learning

A significant finding is that persistent career serial entrepreneurs learn from failure, and recover from the serious consequences of failure. This study supports and adds to existing theory and evidence that failure is an important learning experience (e.g. Cope, 2011; McGrath, 1995; 1999; Sarasvathy and Menon and Kuechle, 2013; Stam, Audretsch and Meijaard, 2008). All the persistent serial entrepreneurs in this study learned from closure and failure.

Implications for Selection Theory: Recovering from Failure

This study's detection and examination of cases of multiple failures provides evidence for Plehn-Dujowich's (2010) extension to economic selection theory where serial entrepreneurs can return after an unsuccessful exit. Theoretically, orderly shut-downs of unsuccessful ventures allow serial entrepreneurs to return practically immediately to entrepreneurship. Therefore, in existing effectual theory, those serial entrepreneurs sustaining an 'affordable' loss (Sarasvathy, 2001) can return immediately. However, this study shows that outright failure is not an orderly shutting down but often a disorderly, damaging and high cost process that is unaffordable. In some instances (Cases 15,26) a return after one failure was facilitated by the finance providers (banks and angel investors) writing-off previous commitments including 'unaffordable' charges on the family home and providing further finance to pursue the same opportunity. Furthermore, this study shows that it is possible to recover economically from repeated failures and closures by taking employment in a related area. During this period serial entrepreneurs reflect upon the reasons for repeated failure and undergo transformational learning. To return, they must use this period to overcome a comparative disadvantage in start-up costs and access to start-up capital arising from an unsuccessful exit.

The extension to selection and matching theory to include the process of recovery from failure and the phenomenon of 'recoverable failure' is illustrated below.

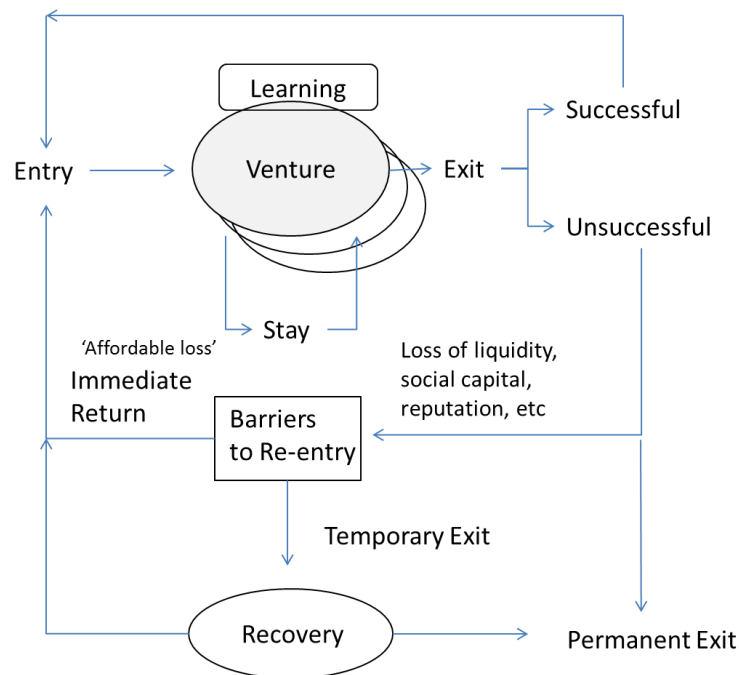


Figure 7.2 Extension to Selection Theory: Recovery from Failure

Unsuccessful Exit and the Re-entry Decision

By definition, for a persistent serial founder entrepreneur, closure or failure is not an obstacle to starting again. Over half (54%) of the entrepreneurs experienced at least one outright failure. In two cases they failed in their first two businesses, yet still went on to start and develop high quality enterprises (Cases 1, 15). It was postulated in the literature review that following the matching principal a closure or failure results from an economic mis-match between the entrepreneur and the opportunity. Unsuitable opportunities should be abandoned as the entrepreneur seeks new ventures fitting her or his business acumen. The analysis of re-entry decisions reveals a significant finding that after a negative exit a serial founder is more likely simply to try again with the same or a closely related opportunity. This phenomenon is explained in much greater detail in the section on venture creation.

7.2.2 Serial Entrepreneurship: Exit and Re-entry - Successful Exits

Referring again to Table 7.7 and the 2:1 ratio of unsuccessful to successful, just 23% of all start-up ventures assessed were classified as successful exits. Nevertheless, the great majority of the entrepreneurs studied were judged to be successful in earning a living much greater than in waged employment. In addition, some serial founders had achieved great personal wealth (Cases 2, 4, 7,

11, 14, 17, 21, 23) principally by selling one or more innovative ventures. Two start-ups grew to achieve listings on the main UK Stock Exchange (Cases 17, 21). While the total proceeds from venture sales are not available, disclosed values sum to £165 million. In the most financially successful case study of a start-up (Case 17), several years after the founding the serial entrepreneur had sold their remaining shares to VCs, the enterprise was listed at a total value of £1.5bn.

As can be seen from Table 7.8, two-thirds of the sample of persistent multiple founders have achieved a successful exit. In three cases (7, 21, 24) entrepreneurs achieved three or more successful exits. From Table 7.7, despite the prevalence of failed novice ventures, 40% of first ventures are still exited successfully. This outcome is maintained for second ventures when there are many more founded ventures that are still current. Again, this supports the earlier conclusion that serial entrepreneurs learn from experience, both positive and negative.

Successful Exit Frequency	Number of Entrepreneurs
3 or more	3 (13%)
2	5 (21%)
1	8 (33%)
0	8 (33%)
Total	24

Table 7.8 Frequency of Successful Exit Experience

The serial founder entrepreneurs in this study did not plan at start-up to ‘harvest’ and exit their venture by sale. Positive exits occurred only when they were either approached by a buyer, or when they came across a superior opportunity and wanted to sell-on their current business.

All those who achieved considerable personal wealth by selling their first novice business as going concerns, selling shares to attract investment or achieving an IPO, returned to create another business from scratch. When reflecting on the ‘habitus’ of habitual entrepreneurship (Wright, Westhead, and Sohl, 1998) it appears that the challenge and stimulus of starting and developing a new enterprise persists even after achieving more than enough wealth with which to retire. In one case (Case 4) both partners gave up the proceeds of a sale controlled through earn-out clauses to re-start again as serial entrepreneurs. Therefore, while the resource-based theory of the firm includes dynamic resource capabilities (Teece, Pisano and Shuen, 1997) they are difficult to secure from independent minded entrepreneurs.

Successful Exit Classification: Sale at Premium vs. Sale at Book Value

Successful exits can be classified into two sub-categories a) sales of all or part of a high quality business at a clear premium to book value at a high multiple of earnings. Such sales generate personal wealth and liquidity, and b) sales of a going concern at close to book value. There are four instances of selling on a business at close to book value (Cases 16, 19, 24, 25). Here established enterprises were sold to former employees, when the serial entrepreneur found a new more profitable opportunity.

It should be noted that successful exits in this study did not conform strictly to Wennberg, Wiklund, DeTienne and Cardon's (2010) taxonomy. There was no sense of an intention to 'harvest' investments as approaches were made by third parties, and 'liquidation' was not used by high performing firms in the sample. Selling a business on at book value to exploit a new opportunity is not a sign of distress. In addition, there are other cases that do not fit this taxonomy. Raising VC funds is a type of sale where the entrepreneur stands to gain even more in the future. Exiting entrepreneurs may not realise the true value of their firm. The founding entrepreneur is gradually 'edged-out' of a high quality business when VCs put in their own managers, and earn-out agreements breakdown for similar reasons (Cases 4, 7, 11, 17).

Reasons for Successful Exits

Successful high premium exits were not only in high growth often high technology sectors, such as IT and internet related, but also in fast food and professional services in new growth areas. Whether serial entrepreneurs start innovative ventures or imitative ventures that jump on bandwagons or copy previous businesses is the subject of a separate theme and discussed in much more detail in this chapter.

Learning from Success

A key focus of this study is the repeated pattern of entry and exit that makes serial entrepreneurs unique. Their particular learning from experience is a constant theme throughout the case analysis. In aggregate the thesis has already reported that success doesn't always lead to success due to the prevalence of unsuccessful firms. Like a business closure or outright failure a successful exit is also a critical event and is a source of transformational learning that is under-reported in the literature. As will be demonstrated, successful serial entrepreneurs do learn from prior success by replicating and transferring previous behaviours to new start-ups. They also learn about the process of successful exit and what it means for their careers.

The Exit Decision

While not planning to sell, serial entrepreneurs appeared to rationalise the sale ex-post as a reward and vindication of their decision to start-up. “I sold as I thought it was a good time to crystallise the company's value. I wanted to take my winnings and leave the game, so to speak” (Case 26). It (the exit) helps to crystallise your success. “Most entrepreneurs are not driven by money, but the value that you create in a business is ultimately a measure of success and hence reputation” (Case 20). An interpretation of this rationalisation is that while a sale is not planned or sought, the experience may encourage some serial entrepreneurs to start again but this time being open to the possibility of a sale.

Some recognise that the decision to exit is not always the optimal financial decision and selling is a specialist and learned skill. “The sensible entrepreneur is not too greedy. If you wait for the mega-bucks you may never sell” (Case 24). “I would not wish to exit again unless it is a much bigger amount. My counterparts who stayed on with the business post-acquisition made a great deal more money than I did” (Case 16). “In my case selling my first business was a fluke and I needed to do it a second time to prove myself to myself” (Case 11). We like the challenge. We love the competition of beating the competition. We like the thrill of the exit” (Case 23). For some it’s the money but for most it’s a game” (Case 23). “After a period of R&R (rest and relaxation), I needed new projects/new stimulation. So I did what I had experience of.” “When you sell your business a huge hole opens up in your life, you have all this time and have no idea what to do with it.” “We get bored and as entrepreneurs we are always looking for that new opportunity” (Case 11).

Making a successful exit is something that is learned, and serial entrepreneurs can become more skilful when negotiating from a position of strength. “Selling a business is very complex and has its own terminology and rules that aren't obvious. It is easier to sell a business second time because the process is familiar. After your first exit it becomes less critical and less significant to get the deal over the line, so as a vendor you are inevitably more relaxed” (Case 23).

Successful Exit and the Re-entry Decision

Broadly consistent with the literature (e.g. Stam, Audretsch and Meijaard, 2008), for this sample of persistent entrepreneurs all successful exits were followed by re-entry to entrepreneurship, in most cases with interludes varying in length and the activities undertaken, where the enhanced liquidity from the exit provides a flexible resource to support the next cycle of entrepreneurial activity. As postulated in the literature, successfully exiting entrepreneurs are subject to centrifugal legal and economic forces that require them to find new opportunities. Contracts of sale were accompanied

by non-competition clauses and/or it didn't make business sense to start a copy-cat venture in an effort to replicate a previous success (Cases 4, 11, 14 17, 22, 23).

7.2.3 Evidence of a Learning Curve for Serial Founders

The average age of successfully exited ventures is 10.5 years, reflecting their relative maturity and quality at the time of sale. Once ventures have survived their initial years, the so-called 'valley of death', where the liabilities of newness and smallness (Stinchcombe, 1965) they have an increasing chance of surviving, gaining the potential for outright sale or further equity investment through a partial sale. Overall the evidence is consistent with economic selection theory and the matching principle (Holmes and Schmitz, 1990; 1995; Plehn-Dujowich, 2010), that serial entrepreneurs will exit to seek better opportunities until one is found, and mature high quality ventures fetch the highest sales prices.

Venture Outcome: Venture Maturity and Start-Up Experience

In an effort to reveal a learning effect for successful exits, the relationship between the outcome of each venture and the experience of the entrepreneur was plotted. The quality of the enterprise was rated 1 to 10, where 1 is failure, 2 closure, 3 low employment and revenues, up to 10 which is an exit by sale at a significant premium over book value. Experience is measured by adding the age of the business in years to the start-up experience of the entrepreneur. This gives a scatterplot of business quality vs. maturity of the venture plus the experience of the serial entrepreneur given in Figure 7.3 below. Overall the combined age of the business and the serial entrepreneur's previous experience of start-up had a positive correlation with successful outcomes.

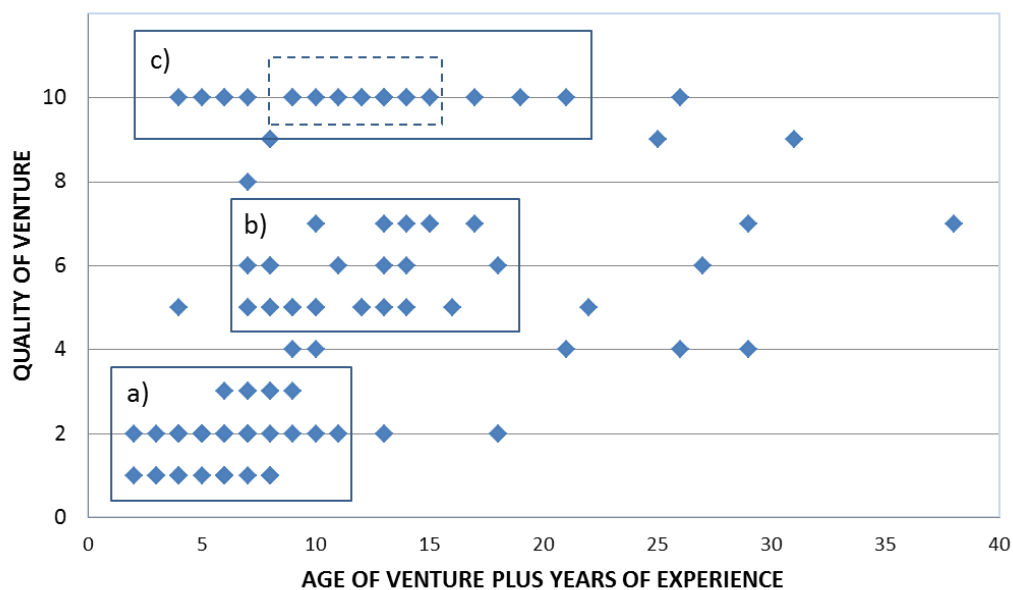


Figure 7.3 Venture Quality vs. Age of Venture and Experience

The Pearson product moment correlation coefficient statistic is 0.43386 giving a low positive correlation between the two variables. It is indicative of a learning curve. There are three clusters of interest. Cluster a) shows that failed, closed and quitted ventures are short-lived and occur when entrepreneurs have less start-up experience. Cluster b) is of middle ranking quality ventures associated with medium levels of combined age and experience. Cluster c) is of the most successful exits, where these occur after a minimum period of time to grow. There is a sub-cluster of successful exits with medium level combinations of venture longevity and start-up experience. This cluster suggests that the actual quality of the opportunity is also important. In other words, a good quality opportunity, i.e. an innovative opportunity in a growth industry sector such as CAD/CAM software (Case 16), on-line advertising rewards (Case 21), and internet retailing (Case 17) is more important than experience,

7.2.4 Overall Career Ratio of Successes to Failures

It is important to remember that despite the longitudinal nature of the study it is still a snapshot of career trajectories still in motion. Over a third (37%) of the ventures studied were continuing and their final status is not yet known. Therefore, the overall ratio of negative and positive outcomes once a career has been completed may well be different from the 2:1 ratio for the sample. To determine the total career ratio of positive 'hits' to negatives 'misses' the careers of these serial entrepreneurs would need to be followed to their retirement.

Notwithstanding that the sample is a snapshot, it can be argued that while we do not know the aggregate career ratio of positive and negative outcomes, negative outcomes occur more frequently earlier in careers. The most long lived current venture was 36 years old. The group of current ventures is just above the average age of all ventures with 12 ventures in this group older than the average age of a successful exit. Furthermore, the data from this study is consistent with selection and matching theory (Holmes and Schmitz (1990; 1995) that predicts that once a venture reaches maturity it is unlikely to close down and even more unlikely to fail with financial losses. Therefore, if the pattern in the study has some general validity, in two to three years' time a number of these currently active enterprises will have transformed into successful exits improving the overall success ratio for serial founder entrepreneurs. If all of the 37% of the currently active enterprises become successful exits the ratio is transformed into 2:3 in favour of successful firms.

From the work of Wennberg, Wiklund, DeTienne and Cardon (2010), it was inferred that in a relatively modern and dynamic sector of the economy the probability of continuation, success and

failure are all about equal. The Swedish study is of a high growth sector that was neither in recession nor boom. This study spans a number of industries and several economic cycles in the UK, including the dotcom boom and bust, and the financial crisis with its after effects. Therefore, with further follow-up research of this sample it could provide an answer to questions concerning the overall success rate of serial entrepreneurs. Of course, an appropriate method will need to be devised, as a number of ventures may be passed on to family members and escape a market test of their value. This could prove a superior method or complement those used in other performance studies (e.g. Toft-Kehler, Wennberg and Kim, 2014). If there is a learning curve for persistent and ultimately successful serial entrepreneurs we would expect economic returns to outweigh losses with most (though not all) failures occurring early in careers.

7.2.5 Summary and Key Findings

1. No entrepreneur in this study said that they set out to become a serial entrepreneur by planning to sell their first venture and start-up again.
2. Unsuccessful ventures with a negative exit are endemic to serial entrepreneurship. 80% of the entrepreneurs experienced some form of unsuccessful exit. As 80% also meet the 'expert' criteria, it could be said that a serial entrepreneur starting three or more ventures is very likely to experience at least one business closure or outright failure with losses. Nevertheless, persistent serial entrepreneurs are able to recover from a negative venture experience.
3. Negative exits occur most frequently in the first novice venture. This can be expected as experience is lacking. After the first venture the reduced frequency of negative outcomes is evidence for learning, though the pattern remains idiosyncratic.
4. Unsuccessful exits were clear cut, not 'gray' (Rerup, 2006) or marginal decisions. The entrepreneurs described these as negative experiences. Outright failures are not 'affordable' (Sarasvathy, 2001). Two successive negative exits in this study are followed by a break from entrepreneurship and a period to recover.
5. The serious consequences of losses lead to valuable transformational learning (e.g. Cope, 2011).
6. Exits (successful and unsuccessful) should be added to measures of entrepreneurial human capital and also of venture performance to improve research techniques. Managing an exit is a form of entrepreneurial capital that is learned.

7. Evidence supports and tempers aspects of an emerging theory of serial entrepreneurship. Failures do outweigh successes for serial entrepreneurs, but in the early phase of a career. The postulate of the transfer/spill-over of learning of both success and failure to subsequent ventures is confirmed.

8. However, this learning and transfer is highly idiosyncratic because it is contingent on the judgement and decisions of the individual entrepreneur in relation to opportunity selection and implementation.

9. The evidence supports the current theory of the economic selection and matching process. However, the theory of selection requires an extension to include a period of recovery where persistent serial entrepreneurs recover from the negative effects of several negative exits occurring in sequence.

10. The process of recovery and learning from failure runs directly counter to the 'success breeds success' conceptualisation of serial entrepreneurship, and its static view of innate talent.

11. One negative exit is recoverable especially if financiers facilitate an immediate return through debt relief and fresh finance.

12. There is no support for other evidence that second ventures are more problematic, though it should be noted that this thesis is not strictly comparable with quantitative venture performance research.

13. The age of a venture is indicative of its quality and age combined with start-up experience is positively associated with venture outcome.

14. Post-sale it is difficult for some successful serial entrepreneurs to see out earn-out clauses. They prefer to start another venture than stay as an employee, even if it means forgoing proceeds of the sale. The resource-based theory of the firm with dynamic capabilities (Teece, Pisano and Shuen, 1997) should not assume that they can be acquired by purchase of an entrepreneurial firm.

7.3 Part 2. Section 1. Serial Entrepreneurship: Venture Creation

Having examined the whole sample from the perspective of exits, the analysis now focusses on venture creation. In part 2, the principal research question is addressed directly using constant comparison of cases (entrepreneurs) and sub-cases (founded ventures). Ventures are classified into common modes or means of founding. A longitudinal perspective is taken starting with the origins of the first novice venture, then the second venture, third, fourth, fifth etc. The findings contribute

to all four of the principal exploratory research themes of this study. The modes of founding provide insights in the what, how, when and why of serial entrepreneurship.

7.3.1 Origins of First Venture Start-Up

Research Question 1.1 asks: How do future serial entrepreneurs become entrepreneurs? The qualitative analysis of the relationships between a serial entrepreneur's first and nth venture begins with an examination of the origins of the first (novice) business.

7.3.2 Modes of Founding: Transition to Novice Entrepreneurship

A mode of founding is a new construct induced from the analysis. It is inspired by the work on typologies by Low and Abrahamson (1997) and Chandler, Douglas and DeTienne (2005).

The majority of the alternative modes of venture creation and entry into entrepreneurship for novices who later go on to create careers as serial entrepreneurs are strongly related to prior employment. Novice ventures are incubated by employers or have their origins in other relevant prior experience. Alternatively, employees are recruited into entrepreneurship by other lead entrepreneurs. Other first ventures are replications of existing incumbent businesses or are innovations. Interestingly, innovative first ventures may or may not draw upon prior experience, providing some support for Aldrich and Reuf's (2006) emphasis on novices as the primary source of innovative enterprises.

Figure 7.4 provides a summary listing of each novice mode of new venture founding. The nature and origins of each mode are explained in detail.

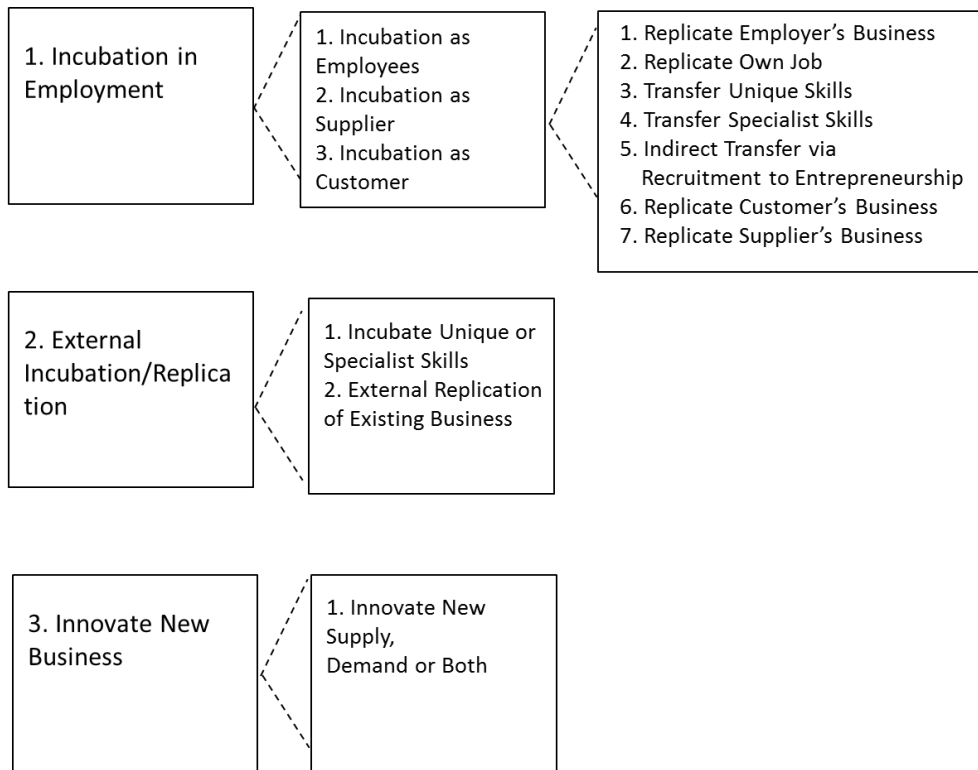


Figure 7.4 Modes of Founding: Transition to Novice Entrepreneurship

7.3.3 1. Incubation of Entrepreneurs in Employment

A clear majority of serial entrepreneurs founding firms did so following a career in salaried employment. Employers and employment incubate (Cooper, 1985) first ventures. Of those employed, most (70%) started a first business that was related to their employment experience.

None of the first start-ups in this study were direct transfers or ‘spin outs’ of technology from an employer. They were conscious copies of the employer’s business or replications of key aspects of their employer’s enterprise. Employers unwittingly incubate future serial entrepreneurs. Nascent entrepreneurs deliberately used employment to learn how to start a similar if not identical venture. In all these cases the nascent entrepreneur, very often with a clear plan, learned how to move up the value chain from waged employment to founding their own business by learning from an incumbent ‘host’.

Incubation as Employees

- Replicate Employer’s Business

Of those motivated to become entrepreneurs from an early age, four made a clear plan to learn about starting their own business through employment (Cases 6, 8, 11, 18, 26). They all make very

similar statements about learning and the benefits of “making mistakes on someone else’s payroll”. They used employment to learn about their own strengths and weaknesses. One talked about developing the confidence to go it alone because, “In small business you get to learn most of the functions in the business” (Case 11). They learned which products and services could be sold profitably and how to organise resources through an effective business model. Most developed lasting social capital including ties to future customers and suppliers, taking one or two of their employer’s customers, suppliers and employees with them, despite the contract of employment having specific clauses designed to stop these resource transfers. It is clear that this is replication (e.g. Chandler, Douglas and DeTienne, 2005) but from the inside. It is a conscious, mindful, step by step process of active learning by doing. Replication as a construct is similar to Low and Abrahamson’s (1997) cloning. However, as will be shown in other cases true cloning should be restricted to another type or mode of start-up strategy that occurs in second ventures.

Incubation as Employees

- Replicate Own Job as Self-Employment

A common form of incubation is to move from employed to self-employed contractor status as a transition stage to founding a new firm. The case studies detail a number of instances of transitional periods of self-employment in roles virtually identical to those held before in waged employment (Cases 6, 11, 19). Redundancy pushed one unwilling and unprepared individual into self-employment and then starting his own company. He said “I got made redundant from XYZ industry. I went back to the MD of a previous company and rather than being employed I went back as a self-employed contractor. That kind of really sparked in my mind at that point, when my back was against the wall because I had no other options, and so I first thought about starting my own company” (Case 19). Other future serial entrepreneurs knowingly took the interim step of self-employment before launching a new enterprise. One possessed highly valued skills developed in the public sector that were the basis of self-employment in the private sector. Some planned transitions involved small trial businesses. Though sometimes tangential to the first significant start-up, e.g. selling spare parts or second hand computers, they provide relatively safe and low risk learning opportunities to build new skills and accumulate funds. One individual was an IT contractor while searching for the right opportunity, “I worked in a wide range of big, medium sized and small companies, learning different things each time” (Case 11). Self-employment positioned individuals closer to their source of start-up opportunity, facilitated the accumulation of financial resources and gave time for searching, planning and developing the maiden start-up enterprise.

Incubation as Employees

- Transfer Unique Skills

In some cases, the link between the new entrepreneur's start-up and previous employment appears tenuous. On closer examination, very unique skills are being incubated in employment that are used to recognise and realise opportunities in other industries. One serial entrepreneur (Case 14) occupied a unique position to acquire private and specific information on opportunities to integrate disparate technologies. He related "I was the first person to get a word processor, the first to get a desktop computer, probably in the whole of the UK. We were the first to do on-line insurance broking but using telex machines, the first to connect radios in vans to mainframes computers, a kind of early form of mobile computer. So we did a lot of leading edge stuff." His subject knowledge was supported by extensive experience of large scale system integration. The relevant prior knowledge could only have been acquired in employment in that particular time and place, and the new firm exploited an opportunity in a new industry that few, if any, had the knowledge to both recognise and exploit.

Incubation as Employees

- Transfer Specialist Skills

In one of the case study exceptions (Case 12), the serial acquirer and founder entrepreneur, an accountant with specialist knowledge and experience in company bankruptcy and receivership, developed a conceptual model and a set of criteria (cognitive template) to search for suitable acquisition targets. The model was an amalgam of knowledge learned in professional education and from learning from doing. The accountant also utilised social capital in the form of strong ties to deploy leveraged finance expertise to overcome liquidity constraints to the purchase his ideal business.

This case of a career involving both acquisitions and start-ups reveals that acquirers and venture founders are attracted to different types of opportunity. The acquisition of an existing revenue stream was made on the basis of the degree of fit between available firms and prior knowledge. Prior learned knowledge was condensed into a theory (Casson, 1982), and used a cognitive heuristic (Tversky and Kahneman, 1974) and exemplar template (Baron, 2006) to facilitate reasoning by analogy (Fiske and Taylor, 1991). The entrepreneur described how to filter target firms to find those who could be swiftly reorganised to generate more profit. The serial acquirer said "It didn't really matter what the product was, but what was behind the business". This is in contrast to novice (future serial founder) entrepreneurs who most often founded businesses similar in products,

customers, industries etc., to those they already knew. This shows that a more nuanced fine grained approach to the study of habitual entrepreneurship can distinguish more clearly between different types of behaviour.

Incubation as Employees

- Indirect Transfer via Recruitment to Entrepreneurship (Specialist Skills)

In several cases (1, 4, 16) future serial entrepreneurs were recruited into their first start-up team for their specialist skills by a lead entrepreneur. For example, "I was the only person that he knew that knew anything about computers at all." These 'apprentice' entrepreneurs later took on the role of lead entrepreneur in subsequent serial careers. Being part of the lead entrepreneur's social network meant that private and detailed information about their experience was available at relatively low cost. Future serial entrepreneurs recruited to the start-up team invariably fulfilled an important role in marketing and sales or operational management. In return they were rewarded with a minority share in the new enterprise.

Rosa (1998) detected non-entrepreneurial habitual founders, whose success arose from being attached to a partner who was the true driving entrepreneur. It is very difficult to judge retrospectively if these individuals already had innate entrepreneurial talents or only subsequently learned them from actual experience of start-up; and this could be the subject for further research. For example, in some cases, it wasn't always clear who discovered the opportunity and who was responsible for developing it. Most recruits who became serial entrepreneurs in their own right had senior sales backgrounds and therefore had proven talent in identifying and exploiting revenue streams. Others recruited for operational roles also transitioned to lead entrepreneur. All had relevant industry and management experience. A serial entrepreneur described the recruitment process. "A (the lead entrepreneur) had just won a large account and they wanted to launch a sales force in the UK. Why don't you come and join me and set that up? A asked me. So that is how I got into ABC business." "And as the business grew, I ended up owning 10% of it, B ended up owning 25% of it, and A ended up owning the rest (Case 4). One serial entrepreneur said, "I don't really know how I got involved, but I hated accountancy." "This person was a friend of a friend, so it was just a pure coincidence" (Case 1).

Not all individuals recruited in this way do go on to become lead entrepreneurs. Partners who filled very specialist technical roles used to develop new products invariably stayed as partners to the lead entrepreneur in subsequent ventures (Case 2, 20). This suggests that human capital studies should

include specific task and context functional roles in their analyses recommended by some researchers (e.g. Unger, Rauch, Frese and Rosenbusch, 2011).

Incubation as Supplier

- Replicate Customer's Business

Contractors as suppliers of labour services are very similar to employees, but have a more arms-length relationship. Suppliers of other goods and services can also learn to start a very similar business to those of their customers and move up the industry value chain.

Two brothers employed in small firms supplying specialist services to the same industry started their own company simply by replicating their customer's business (Case 7). They realised that it was completely undifferentiated, commenting that "It would not raise money on Dragon's Den." However, starting up moved them from waged employment to business owners in the industry they knew very well.

Similarly, a semi-skilled building labourer employed on a short-term day wage basis launched a first venture two steps up the value chain by buying and renovating residential property (Case 10). In the process he acquired specialist knowledge in mortgage backed bank finance to leverage his start-up. This knowledge and skill proved vital to the development of subsequent related ventures.

In another case, a father brought home an imported machine tool he had difficulty selling that stimulated a new innovative opportunity (Case 13). His son, with no knowledge of engineering, combined his father's knowledge with experience gained from starting several small businesses in his youth, to reengineer the machine tool and target new customer needs. He recounted, "One mad weekend in my final year at university I mocked up a tool to sell for £100 each. I went to (one of my father's customers) and came away with an order for 500." With further help from his father to secure successful trials of the prototype, the son started his own machine tool business supplying the exact same customers as his father's employer.

Incubation as Customers

- Replicate Supplier's Business

Two employees responsible for sales in a completely new industry noticed that there was a gap in the market (Case 2). The new industry was not being provided with specialist advertising and other marketing services. As the serial entrepreneur recounted, "My entry into entrepreneurship started with a friend and I. I was 25 years old. We wanted to set up our own business basically doing

advertising for technology companies. It was our vision. We both came from a technology background; we worked in the same company, which was a quite entrepreneurial organisation.” Despite being informed consumers of such services (ends) they still needed to acquire (replicate) knowledge of the means. Completing this side of the equation was achieved by making a joint venture with an established advertising agency. The joint venture served as an accelerated form of incubation, providing the missing knowledge, skills and experience. The novice entrepreneurs rapidly acquired specific entrepreneurial capital and when a dispute occurred they dissolved the joint venture and formed their own firm. In a two-step process they moved up the value chain from informed consumers to sole suppliers to a completely new market segment.

7.3.4 2. External Incubation/Replication

- Incubate Unique or Specialist Skills (Vocational and Personal Interests)

Similar to employees who gain access to privileged information from their employers, novice entrepreneurs can follow their deep knowledge and passion for a particular subject, such as dance, photography and music pursued by entrepreneurs in this study (Cases 9, 15, 25). While other individuals pursue vocational or other special interests by seeking employment, these started their own businesses. One such entrepreneur said, “I set up a dance school in a church hall. That was the beginnings of me having a business. I didn’t have enough money to start a business. I didn’t have any financial support, except from my mother. Right from the beginning I could only do what I could afford to do. So wanting to be able to sleep at night I was very resistant to borrowing money” (Case 25).

These novice entrepreneurs were not motivated by monetary rewards, but by a desire to serve a distinct community of similarly passionate consumers. In their first start-up they also replicated familiar existing business forms, such as specialist publications, education classes, and community events. They all later founded substantial and profitable ventures and often innovative ventures that retained the original social dimension to their first ventures.

- External Replication of an Existing Business

Existing organisations can spawn new ventures by being copied from the outside, externally, because the nascent entrepreneur does not enjoy the advantage of being an employee or possess other inside knowledge. These individuals had a clear plan to become entrepreneurs and searched for a suitable opportunity in the shape of an existing business (Cases 3, 23). For example, one serial entrepreneur said, “My aim is to become the next McDonald’s, with thousands of stores. That was

the intention. So I looked around surveying London for suitable ideas.” From another case, “ I was analysing the market, seeing what I could do, and we were being bombarded by mail order advertising catalogues from A and B who were new start-ups at that time.”

The entrepreneurs picked attractive sectors and researched selected incumbents to provide a business template of means, ends, means to serve/business model, and then designed their own competing version. In one case, in order to gain access to specific information, the entrepreneur’s friend took employment with an incumbent to learn the details of its business operation. An incumbent’s business model is more likely to be copied if it is semi-transparent and information is in the public domain or can be systematically researched at low cost. Nevertheless, external replication can often be an unsuccessful mode of entry strategy for a start-up, should the novice gain only a partial knowledge of the detailed procedures needed to operate and manage the business successfully. Unlike incubated employees who replicated their employer’s venture, these were replications with some differences or adaptations. Here novice entrepreneurs did not want to compete head-on, so they target a closely related market segment. Therefore, the start-up is effectively a diversification of an existing business form, made by copying the underlying business model. These entrepreneurs sought to bring something different to the sector, though always derived from existing possibilities. They were much more prepared than some incubated start-ups to modify their approach and abandon less viable ideas. They also brought innovations to the industry in the form of new products and operational forms, stimulated by the lack of resources and the need to ‘bootstrap’ the start-up and growth phases.

Replication as an Entry Mode

All serial entrepreneurs who replicated existing businesses defended their strategy on the basis of risk and return. They said they knew before launch that there was customer demand for their new offer. Prices were available and costs could be estimated. Relevant commercial information was available at low cost through the industry ‘ecosystem’ of trade shows, business press, industry awards and the like. “At the time you couldn’t look on-line. There was no such thing, but we discovered that there were such things as trade shows, and so we went to trade shows. We looked in the Yellow Pages, we did what you would call classic old fashioned market research” (Case 3). They found it reassuring that their competitors’ suppliers also supplied them. Suppliers encouraged new entrants and shared commercial information. While very confident of their own abilities these ‘diversifying replicators’ could rely on continued learning from other sector participants.

7.3.5 3. Innovate New Business

- Innovate New Supply
- Innovate New Demand
- Innovate New Demand and Supply

A significant proportion (27%) of first ventures founded by this sample of serial entrepreneurs could be described as highly creative, inventive, innovative or even frame-breaking when at the start or early stages of new industries (Table 7.12). One of these first ventures started a family of internet enterprises to whom companies such as Uber and Airbnb can trace their parentage (Case 17).

There is some evidence that first time novice entrepreneurs are more likely to conceive frame-breaking opportunities (Kirzner, 1985) if their idea for a business was not incubated directly from employment (Cases 1, 17, 20, 21). Incubation is associated with replication. Most often the novice entrepreneur discovered a new customer problem and their innovation arose from designing a new solution. In one case the nascent entrepreneurs realised from their own experience as a customer the difficulty of ordering fast food (Case 17). Opportunities arose from within the general domain of the entrepreneur's prior knowledge in response to price signals, a phenomenon described by other serial entrepreneurs as alertness in their peripheral vision. For example, a novice venture was a response to the rising cost of office space in the financial district of the City of London in the 1970s, addressed by new means of moving document and later computer tape storage to the then largely derelict London Docklands area (Case 1).

This finding provides a weak corroboration of the view of some evolutionists (e.g. Aldrich and Ruef, 2006) that novice entrepreneurs are more likely to introduce innovative opportunities. The finding is weak because overall innovative ventures occur at a roughly constant rate of approximately half (47%) of all start-ups researched. Moreover, if anything it is contracted by the ratio of genuinely innovative start-ups increasing with experience (Table 7.12).

7.3.6 Summary and Key Findings

1. The novice modes of business start-up can be summarised in three super-types: Incubation in Employment, External Incubation, External Replication, Innovate New Business.
2. Most novice start-ups are imitative in nature. Many are incubated unknowingly by employers.

3. Imitative ventures are an economical low risk means to change status from employed to employer.
4. Novices also found very innovative businesses especially those not related to employment.
5. Some future serial entrepreneurs are recruited into their first venture as minority partners.
6. Novice founders can be distinguished from novice acquirers. Acquirers can use pre-learned theories, that employ cognitive heuristics and exemplar templates find target firms.

7.4 Part 2. Section 2. The Next Venture – Transition to Serial Entrepreneurship

The transition paths and ‘rites of passage’ from novice to habitual entrepreneurship are of interest to researchers (e.g. Ucbasaran, Westhead, Wright and Flores, 2010). Exiting the first venture and creating the second venture is the first iteration of the exit and re-entry cycle of serial entrepreneurship. The post-conditions of exit are likely to determine to a large extent the pre-conditions for the next venture. However, in this study this is not an entirely contiguous or continuous cycle. Some serial entrepreneurs pause after exiting their first venture and what they do in the interlude has a bearing on the why, when and how of the next venture.

Research question 1.2 asks: How do future serial entrepreneurs transition from novice (one time) entrepreneurs to serial entrepreneurs? While research questions 1.3 and 1.4 ask: What is the impact of failure and success on venture selection respectively. In other words, how the outcome of one business affects the how, why and when of the next venture.

7.4.1 Modes of Founding: Transition to Serial Entrepreneurship

The alternative modes of second venture creation that transition novices to serial entrepreneurship are listed in Figure 7.5 below. The evidence for each mode is set out in detail.

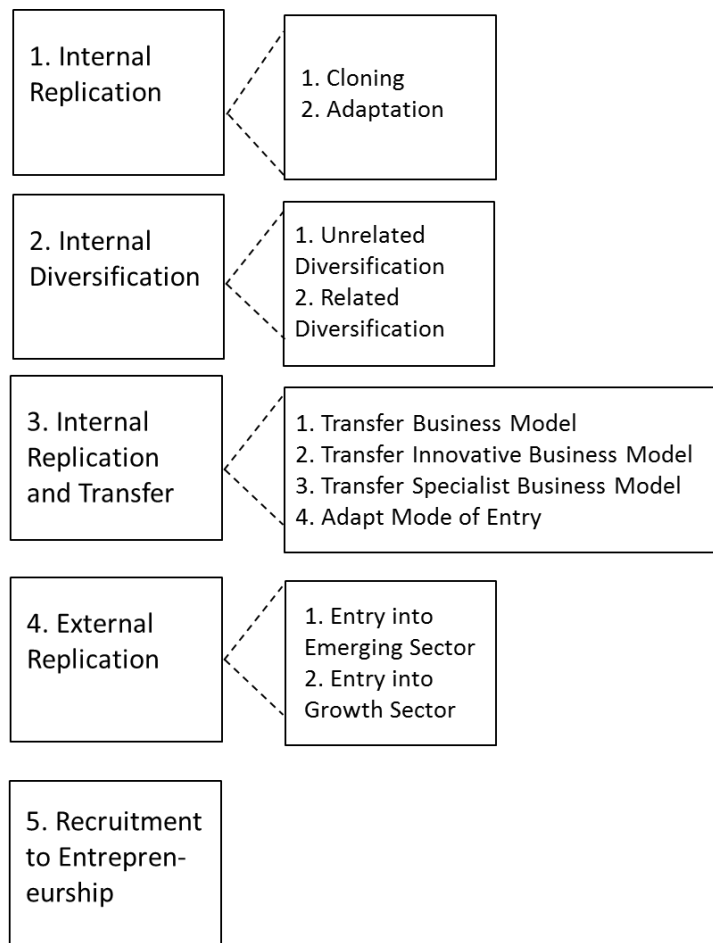


Figure 7.5 Modes of Founding: Transition to Serial Entrepreneurship

7.4.2 1. Internal Replication

- Cloning

Clones of the first (novice) venture were a small but significant proportion (15%) of all second start-ups. Many novice entrepreneurs become serial entrepreneurs, usually unexpectedly by making an emergency copy or ‘clone’ using the blueprint/exemplar template (Baron, 2006) and many of the resources of their first business (Cases 1, 2, 4, 19) This process was described by one serial entrepreneur as “rebooting”. The first business can fail outright and is insolvent. In most cases there were disputes and unethical behaviour and legally the firm was wound-up. However, the opportunity and the combination of resources in the previous firm used to exploit it were not exhausted.

In these cases, the entrepreneur or entrepreneurial team, occasionally with the assistance of key employees, use their prior specific and largely private knowledge to replicate the previous business. With cloning, the entrepreneur already possesses the detailed exemplar template and access to

most of the necessary resources. The entrepreneurs in this study aimed to recreate the previous business from the blueprint as soon as practicable in order to keep going in business. “Yeah, we carried on with the same old formula of very strong branding, lots of adverts, the 50% of turnover spent on advertising and marketing, big ads in the trade press, etc.” (Case 4).

Cloning of the first venture occurs most frequently when the previous business came to an unplanned, unexpected and often abrupt end. Most commonly there was an unresolvable dispute within the original entrepreneurial team, and one of them suddenly leaves, often taking resources with them precipitating a lengthy legal dispute. The denuded team has to reorganise to save the rent generating capacity of the venture. The newly serial entrepreneur acts entrepreneurially to replace those elements provided by the former partner(s). These cases could be classified as closing for technical reasons (Stokes and Blackburn, 2002) or closing voluntarily (Levie, Don, and Leleux (2010). Nevertheless, the entrepreneurs described these as negative experiences and faced the costs of starting again, sometimes alone (Case 1).

One related the background circumstances at the time, “Costs were high and the recession was beginning to bite. X folded the business, and took all the cash to Australia because X was able to empty the company bank account. X was struck off as a director in the UK but that didn’t help us” (Case 4).

Similarly, cloning also occurs when there is a break-down of a joint venture. It can be due to a difference in goals, for example, “They weren’t willing to give us any more equity in the larger group so I said to my partner come on let’s go on our own. He didn’t want to. They tried to divide and conquer and eventually he said ‘right let’s do it, let’s leave’. We walked out and set up across the road and took one client with us” (Case 2).

It can be due to a break-down in trust and other personal disputes. Another then soon to be serial entrepreneur in response to a question on what happened to a successful venture replied, “I fell out with the people who put the money up. I left and set-up on my own” (Case 1). A similar situation occurred in another start-up. “He just couldn’t tell you the truth all the time. In fact, he never told the truth, he was a bloody nightmare” (Case 1).

Legally the business is closed (an unsuccessful exit) and the assets cannot be liquidated in a way that reflects their true value. Nevertheless, the business was economically viable, the opportunity remains to be fully exploited and the detailed method for exploitation is known tacitly by the new lead entrepreneur. The new lead entrepreneur re-starts the previous venture to continue in

business. Clones were very often a springboard for previously more junior members of the entrepreneurial team to take on more responsibility and learn new skills.

Cloning activities include: setting up a new legal entity, contacting customers to maintain continuity of the business relationship when legal contracts are in a kind of legal limbo, moving to a new premises very often nearby, rehiring staff, setting up new bank accounts and lines of credit, and replacing the skills of the ex-partners and other employees and service suppliers whose loyalties lie with the other individual or joint venture firm. The case studies illustrate how disputes may spawn direct and aggressive competitors.

The process of cloning is time consuming, expensive and often imperfect, negating some of the efficiency and effectiveness gains of lessons learned from experience. The imperfections in the cloning process can lead to both favourable and unfavourable adaptations. These include economising and moving to low-cost but also more effective premises. In one example (Case 4) the second version of an enterprise moved to a large rent free building in a prominent location where a huge advertising banner for the new business could be displayed at very low cost, demonstrating creative thinking. In another (Case 1), the relatively inexperienced entrepreneur set up a clone in a slightly different location that was too far from his previous customers and labour force. This newly serial entrepreneur was unable to replicate the strengths of the sales force in the previous business or the level of initial capitalisation, and consequently the venture quickly failed.

Cloning at this early or 'immature' novice phase in the career of a serial entrepreneur appears to be a side effect of partnering, where the novice entrepreneur may have been recruited into entrepreneurship and have a smaller stake and less influence. New teams may be more prone to dysfunctional turnover due to bad relationships and loss of interest (e.g. Chandler, Honig and Wiklund, 2005; Francis and Sandberg, 2000). Nevertheless, becoming a serial entrepreneur unexpectedly through cloning teaches the entrepreneur resilience and how to start a business very quickly in difficult, complex and uncertain circumstances. Failure has a longstanding place in respect of entrepreneurial learning and decision making (e.g. McGrath, 1999; Politis and Gabrielson, 2007). The unexpected failure is a critical event (Chell, 2004), a discontinuity that triggers 'transformational learning' (Cope, 2003; 2005; 2011) and plays a significant role in the formation of entrepreneurial capital or expertise. Cloning in this context provides structured learning by doing following a proven exemplar template in the practicalities of starting a business using a known business model to address a known opportunity.

- Adaptation

An unsuccessful first venture can be followed by replication and a thoughtful (mindful) and considered adaptation of the first start-up (Cases 6, 8, 26). The first step in the adaptation is dealing with failure, even if it was due to circumstances beyond their control. As Case 6 relates:

“Yes, but I personally blame myself because you look at yourself in a mirror, and say what could I have done to avoid that. As an entrepreneur you get smacked in the face and you spend a few days or weeks feeling sorry for yourself, but there is only one way to go in life and that is upwards. And it was during that time that I invented the business model and that is where I am with the second business.”

Here, unlike cloning, the firm did not close unexpectedly for non-business reasons, but analogous to cloning, the opportunity is also not exhausted. The outright failure or closure of the first venture has exposed flaws in the business model (George and Bock, 2011) that can be addressed by an overhaul and modification of the means to serve (Shane, 2000), or a more fundamental change to the business model that arises directly as a result of learning from failure. Having demonstrated learning in the first iteration, they are able to obtain support for the next version. As one entrepreneur related, “In Britain, failure is a dirty word. But actually, quite a lot of people are beyond that now, and they saw me as quite an attractive proposition because they believed in the (new) business model, and they thought that I was a sensible chap. And therefore they did not look negatively at my first experience, that I was cavalier or out of control as a lot of entrepreneurs are, they actually saw it as an opportunity” (Case 26).

Having founded essentially the same business before, entrepreneurs are able to repeat the start-up process but adapted with the benefit of hindsight. In general, having to ‘bootstrap’ from a low resource base following failure encourages new ways of combining resources efficiently, but learning also generates very specific fixes. For example, the lack of information needed to make critical decisions concerning profit margins that contributed to the failure was addressed by using new decision support software in the adapted start-up. “We didn’t really know what margin we needed, we didn’t know about margin then. We thought if we made a few quid on the sale of something that was great, but pretty quickly you learn that you need to make a 50% margin or a 60% margin if you are going to have a sustainable business” (Case 3). A failed novice entrepreneur recognised that while customer needs and products had not changed, changing conditions in the industry had precipitated the failure. He noticed the contradiction not in the means-ends but means to serve, “Therefore you fight on one hand to deliver the most exceptional product and price proposition but

you were fighting in a channel that was dying.” Posting product catalogues had become expensive, ineffective and therefore wasteful. Reflecting on the failure, this entrepreneur demonstrated alertness to the development of ecommerce and on-line retailing. Not first to use the internet, the entrepreneur was able to take advantage of new low cost software tools to ‘bootstrap’ a new on-line retailing web site. The use of low cost software was an entrepreneurial skill learned in the first venture to design and print catalogues on a meagre budget. The failed novice also noticed that the first generation of on-line entrepreneurs did not have the relevant retail experience to succeed where he had failed. He capitalised on the learning from these experiments by internet pioneers by combining it with prior knowledge he said “He had learned the hard way”. The second venture became the industry first mover to entirely replace paper catalogues with web pages and ecommerce.

Most of the previous business model was revisited and adapted inclusive of the supply chain. One of the entrepreneur’s idiosyncratic search routines was to trace the suppliers of similar products. Noticing that the US was supplied by Chinese textile manufacturers, he saw the opportunity to significantly improve his margins the second time around. Being one of the first UK retailers to import directly from Chinese manufacturers, the long established oligopolistic market organisation of UK manufacturers and distributors was circumvented. This case study demonstrates unequivocally a clear process of adapting and building upon deep prior knowledge, so as to undo the mistakes of the past and forge new sources of competitive advantage. It is one example of how a series of evolutionary changes, many stimulated by business failure, coalesce into a revolutionary change. Learning from failure or success does ‘infect’ the next venture (Sarasvathy and Menon and Kuechle, 2013,) revising previously ineffective practices, highlighting mistakes and augmenting skills and knowledge about the entrepreneurial process (Cope, 2011). Moreover, replication and adaptation invoke another structured learning opportunity through a repeat of the start-up process using prior knowledge to focus on key entrepreneurial qualities such as alertness and search.

From reflecting on failing the first time, one entrepreneur realised that in his first incarnation he had replicated the aggressive culture toward staff and clients of his previous employer. This culture had worked against them during a sharp economic downturn. In the adapted version they cultivated a novel co-operative culture that was so successful that it became an exemplar template (Baron, 2006) for subsequent start-ups. The entrepreneur recounted that when he was asked, “What was the big difference between your successful business and an apparently similar, but less successful rival?” he replied, “There wasn’t one big difference, but hundreds of small differences.” The case is another

example of where failure can stimulate deep introspection that results in major adaptations and modifications that generated greater variety among superficially similar businesses.

In another similar case of recovering from failure by starting again using replication and adaptation, this novice entrepreneur left the first business with just a fraction of its actual value due to complex legal proceedings instigated by the more experienced joint venture partner. With legal restrictions and without a critical mass and financial resources, the entrepreneur was not in a position to clone the previous business and simply fill the resource gaps left by the former joint venture partner. Effectively barred from his favoured market of large clients, the newly serial entrepreneur had to refocus the business on smaller customers. Drawing upon relevant prior experience and learning by trial and error, a new business model based on much smaller transaction oriented services was developed. He learned to team-up with other smaller suppliers working with them on a reciprocal basis. The entrepreneur steadily grew the second incarnation of the business until he could return to large systems integration projects. The second venture eventually grew to three times the size of his first joint venture business. In summarising the experience the entrepreneur related, "The deal was that X would concentrate on sales and Y on delivery and that just didn't happen". They were supposed to take away stress from me but they just added more stress. However, I did learn a heck of a lot over three years" (Case 8).

In another example of failure (Case 26) the finance for the first failed venture had been secured on the entrepreneurs' homes. "We had no money and the banks had the keys to our houses." "And it would be gnawing away at me and my business partner. We would be talking about it, what we were going to do; never-ending." While terrified of the consequences of failing for himself and his family, the bank's confidence in the plan for the remodelled version of essentially the same business was sufficient for them to write-off the previous secured loan and finances the second smaller venture. The novice entrepreneur was able to try again because he was able to convince finance providers that he had learned from failure. It should be noted that there were other instances in the study of serial entrepreneurs benefiting from 'relationship banking' that cushioned the effects and considerably reduced the costs of failure and bankruptcy (Cases 15, 16).

An entrepreneurial opportunity can be separated from the venture (Plummer, Haynie and Godesiabois, 2007) and also the entrepreneur. When a business fails it is not always because it was a substandard opportunity that should be abandoned. The next venture, if cloned or replicated and adapted can appear identical if measured using purely categorical quantitative variables, but is nevertheless qualitatively fundamentally different. Indeed, as discussed in Chapter 3, some quantitative studies remove this type of venture from their samples as they are regarded as

essentially the same business. These quantitative studies may miss out the venture that transitions a novice to serial entrepreneurship, and other transformative situations where significant learning takes place as they bounce back to try again to exploit the same opportunity. Trying again with the same opportunity was not predicted from the literature review. It was thought that failed entrepreneurs would try elsewhere. There are in fact strong centripetal forces to trying again with exactly the same opportunity as their first venture. Unsuccessful ventures do not seem to diminish the ambition of serial entrepreneurs. Experiential learning seems to counter balance negative influences such as on self-confidence.

7.4.3 2. Internal Diversification

- Spin-Outs (Unrelated Diversification)

Another type of second venture is a new enterprise coming from within, incubated by the first venture. Spin-out is a familiar category from the early habitual entrepreneurship literature (e.g. Lamont, 1972). The current business develops a product or source of expertise that forms the basis of a new standalone spin-out business. This either leads to the next venture in the series when the parent is exited or is the transition to a diversified portfolio of ventures.

Internal replication by spin-out is different from replication by adaptation. A spin-out company can be defined as a new, small company formed to exploit newly formed IP developed as a by-product of the originating firm's operations. It is spun-out because it is largely unrelated to the existing firm's operations and/or has the potential to become a new stand-alone firm. Clearly, as these ventures are incubated in the original firm they are related and benefit from the transfer of prior knowledge and other hard won resources. Spin-outs in the case studies are distinguished by the development of a new distinct unrelated opportunity that begins a new branch or venture corridor.

In one case study (Case 15), the entrepreneurs and their small group of angel investor backers saw an opportunity to recover from an unsuccessful service based novice business by making a technology only spin-out. The idea came from a review of the existing business by a famous UK 'dragon' entrepreneur turned VC. As the struggling entrepreneur related, "He (the famous dragon investor) absolutely tore us to shreds with our angel investors in the meeting and it was brilliant, it was really good, really useful. He introduced the idea of the minimum viable product (a lean start-up technique)." The struggling but still operating original business was split into two ventures, with the new lean software venture receiving a fresh injection of capital. Nevertheless, both the reformed and spun-out new start-up subsequently failed. This case demonstrates that it is still possible to replicate fundamental flaws in the original opportunity and the business model designed

to exploit it. Also, moreover, without relevant experience and ability to introduce new ideas and modifications, they may prove to be misjudgements. The technology spin-out was in effect an unrelated diversification despite the technology being the same.

In this study, all (100%) of spin-outs that are more distant and unrelated to the original business failed (Cases 11, 13, 19, 22). More conventional diversifications, closely related to adjacent customer segment-product combinations, were less prone to closure or failure. However, relative success is difficult to judge as in this study none of the sub-cases of related diversifications were sold. Related diversification is the main route by which some serial entrepreneurs transition to portfolio entrepreneurship.

- Expansion in the Same Industry (Related Diversification)

How novice and serial entrepreneurs transition into portfolio entrepreneurship is an area of great interest to researchers (e.g. Ucbasaran, Westhead and Wright, 2008; Westhead, Ucbasaran, Wright and Binks, 2005) and extends our knowledge of selection theory. This study includes a small number of founders who formed portfolios. From this limited sample of three case studies (Cases 9, 13, 24) the usual pre-condition for building a portfolio of start-ups appears to be retaining a surviving first venture that is not exited and continues to meet the entrepreneur's minimum threshold (Gimeno, Cooper and Woo, 1997) for continuation.

So called 'parallel' starters who build portfolios find or search for growth by horizontal diversification (Iacobucci, 2002), with the same or similar products aimed at the same broad market or occupying adjacent market segments. Both horizontal and vertical diversification exploits similarities, synergies, economies of scope and potential of scale. Related diversifications can be said to lie in product or customer knowledge corridors (Venkataraman, 1997). In this way, the current venture facilitates the recognition of related opportunities and avenues to exercise options (McGrath, 1996) and reuse current resources. This thesis suggests that the reason why researchers find portfolio entrepreneurs to be more alert and opportunistic (Westhead, Ucbasaran, Wright, 2005b), and portfolios arise naturally and serendipitously (Rosa, 1998), is because related diversifications are relatively easy and low cost to recognise.

An example of expansion in the same industry include a portfolio founder focussed on serving the vibrant and creative UK music industry (Case 9). His start-ups pursued new horizontal and vertically diversified music related product-customer opportunities, "Filling in obvious gaps in the product portfolio on a trial and error basis." An portfolio entrepreneur was looking to diversify away from renewable energy and was open to new ideas "Basically, it is a question, of keeping your eyes and

your ears open, and being open to opportunities. You have to be open to whatever opportunity comes along” (Case 24).

7.4.4 3. Internal Replication and Transfer

- Transfer Innovative Business Model to Different Industry (Opportunity Abandonment due to Success)

In this study the transfer of innovations to other industries by the original entrepreneur is carefully planned following a very remunerative successful exit from an innovative first venture (Cases 7, 11, 14, 17, 23). The original high quality opportunity has to be abandoned, because the first venture has been sold and direct competition by cloning is not possible due to legal reasons or because the opportunity cannot support an identical direct competitor. The entrepreneurial logic is to replicate the business model in a different industry and achieve a similar breakthrough in value creation.

The returning, now serial entrepreneur redeploys and repeats the recipe or essential elements of the first successful venture, the means to serve (Shane, 2000) or business model (George and Bock, 2011). From a cognitive perspective, what is transferred amounts to the underlying business model template (Baron, 2006) where the means and ends combination is not necessarily specific to particular customers or suppliers. This is not the same as related diversifications by portfolio entrepreneurs documented by researchers (e.g. Iacobucci and Rosa, 2005) that follow related variants in products or customer segments. In this study, for example, it occurs in new ventures that are applications of a proven model of internet intermediation between buyers and sellers. Here the serial entrepreneur is confident of having found a highly successful formula that by reasoning by analogy (Fiske and Taylor, 1991) is applicable in new and unfamiliar contexts.

The newly successful entrepreneur may not need to search for new opportunities. Publicity surrounding the first business and the entrepreneur’s reputation for innovation stimulates third parties (also reasoning by analogy) to bring new opportunities with a good fit. In effect, having a breakthrough business model generates a large number of real options (McGrath, 1996). In these circumstances, a more mature serial entrepreneur may change role to become a minority angel investor and mentor, parcelling out their business model expertise into a wider portfolio of smaller investments, retaining a stake in the dispersion and diversification of their innovation (Case 17), or as shown elsewhere in the literature (e.g. Mason and Harrison, 2006) they may set up their own VC firm. It is conceivable that they could transition from novice or serial to portfolio entrepreneur, using the business model, although there were no cases of this. A transferable business model is

applicable to completely new industries and the continued presence of the first high quality or 'host' venture is not relevant as it is in related portfolio diversifications.

There appears to be a positive association between the size of the success in the first business and the scale of ambition for the next, a ratchet effect on the future goals of successful serial entrepreneurs. However, and a constant in this study, this type of second venture tends not to succeed if the context and content (Chandler, 1996) are too distant from the original business. One entrepreneur had a huge success and pursued opportunities in many disparate sectors using the same approach (Case 17). While his career trajectory shows that he had transferred industry corridors, in reality the ventures remain related through the replication of the means to serve. After experiencing some less successful ventures, he has returned to the original opportunity, this time as a direct competitor, making a 'mature' clone of his original business.

- Transfer Specialist Business Model

This category of second start-up is similar to the transfer of an innovative business model and its theoretical basis is similar. The difference is the lack of innovation behind the new business model. Here they use a set of business principles, proven or known theory (Casson, 1982) or formula for profitable venturing, such as franchising or supply chain operations. For the next business they also search using reasoning by analogy (Fiske and Taylor, 1991) for opportunities that had a good fit to this type of exemplar template (Baron, 2006), only this time combining heuristic cognitive processing (Tversky and Kahneman, 1974) and systematic search (Fiet, 1996). A second successful experience reinforces (Minniti and Bygrave, 2001) this pattern of behaviour. Confidence, ambition and creativity increase in a ratchet-like fashion as they research and devise more subtle and sophisticated business models that combine experience and research of new opportunities.

Two of this study's entrepreneurs follow this pattern (Case 12, 23). One serial entrepreneur with no relevant prior experience for his first business made an external replication of an existing fast food business which subsequently failed. However, along the way one of his employees discovered the equivalent of a related diversification of the then failing business. The new business contained a successful formula of a means to serve/business model. The first venture was shut down with substantial losses. The second start-up was sold to an acquirer. Realising it was the business model that was the key to his success, he searched for other existing opportunities in other industries that fitted the formula or 'discovery template'.

The serial entrepreneur described the approach deployed, "I went looking for any business that fulfils several criteria. One is recurring revenue, or contract revenue that your customers have to buy

from you. Two it has to be ideally niche but scalable, so as not to compete in a mature market. Third, it had to be somehow sexy, not dealing with the sewage system, you know. And it had to be global and understandable” (Case 23).

Once a suitable match was found the entrepreneur made a copy (external replication) of the incumbent. After achieving another successful exit, again he searched for his third opportunity using exactly the same approach.

Serial Acquirer Business Model

For one of the case study exceptions (Case 12) it appears that acquirers also use a specialist business model to search for and filter existing firms to purchase. Acquirers are more likely to emphasise the use of networks and use formal planning techniques (Ucbasaran, Wright and Westhead, 2003). The one case of a serial acquirer studied appears to support this prior research. Like his serial founder counterpart he also used a simple exemplar business model template, described in his own words as, “The idea was to put more volume through the system. The costs were already there (fixed costs), and build the profitability by increasing the transaction density” (Case 12). As in other cases, the ‘discovery template’ was suitable for many different industries, enabling the entrepreneur to enter a wide range of industries unrestricted by a need for specific prior industry knowledge, social capital and other industry specific assets. Entrepreneurial replication and adaptation of recycled knowledge such as mental short-cuts is not then confined to serial founders. Serial acquirers also extract additional rents by copying and transferring sources of business advantage from one venture to the next.

- Transfer Specialist Business Model – Adapt Mode of Entry

This same entrepreneur (Case 12) also used a formulaic heuristic approach when searching for a start-up opportunity. Search on this occasion was conducted to find suitable existing products rather than businesses. The mode of entry is ‘replicate’ rather than ‘acquire’ (Chandler, Douglas and DeTienne (2005) because the aim was to make a modest, but differentiating innovation in an established market reusing the specialist value creating elements learned from the two acquisitions. This demonstrates that it is better to build rather than buy when planning to introduce a significant innovation to an existing sector. In this case the innovation was to replace the established business model of selling unbranded goods and using conventional retail sales and distribution as the means to serve. These career steps can appear to be very opportunistic, but on closer inspection the acquired and founded ventures were discovered through search using a powerful and clear vision reusing heuristically selected specific knowledge to generate and filter a range of opportunities. As

the acquirer turned founder said, "People say to me, how do you go from (...industry X) to (...industry Y). I say well of course it is not the product, but it is what goes behind the product, it is the warehousing...etc., etc."

- Transfer Business Model to Different Industry (Opportunity Abandonment)

This type of replication and transfer occurs for negative reasons (Case 18). It may also be rare as it requires a third party to introduce an opportunity to a struggling entrepreneur unaware of its existence. One of the unmistakable signs of an economic recession is a lack of viable opportunities and unemployed resources. In this case study, during the crash that followed the 9/11 attacks in New York, the manager of a serviced office business experiencing a lack of demand for temporary offices noticed that one of his client businesses was also going through hard times. The manager suggested that his struggling client employ their sales skills to find him new customers. They were using an approach to business to business sales previously replicated from a prior employer. When transferred and reused in pursuit of managed offices in an established industry, it turned out both workable and serendipitously a unique source of competitive advantage. The partners said, "We realized that property was, well as far as commercial property goes it is a professional game where there are lots of big words and grey suits and lots of people like to talk a lot of fluff. Whereas we are quite direct." As this case illustrates, both the opportunity and the market innovation may occur serendipitously. What was essential to the transfer occurring was the fact of keeping the business going. Had the third party not intervened the business would have most likely closed or failed outright.

Some persistent serial entrepreneurs are able to recognise when industry conditions have changed, and the underlying business model must change with them. In Case 4, an entrepreneur skilled at direct negotiation with the customer's principal decision maker abandoned that market when his preferred means to serve customers was no longer possible. Recognition of change is neither a universal skill nor a lasting ability. In Case 16, the advent of a new if very similar product sold in a previous venture but at a lower price triggered the instinct to clone a previous firm, but conditions were now very different and the venture failed. Another serial entrepreneur (Case 1) responsible for introducing mini-computers to the UK, failed to grasp the opportunity to introduce the next generation of networked micro-computers in Europe. He said, "I failed entirely to see how these tiny micro-computers connected in a network could replace a mini-computer and its terminals". It could be that some opportunities that lie in essentially the same corridor for related diversifications, and the transfer of relevant knowledge and other assets like this are difficult to see and 'connect the

dots' (Baron, 2006), especially when they compete directly with a current venture that is performing well.

Relationships between Discrete Ventures in Different Industries

The principal research question is concerned with how separate ventures founded by the same serial entrepreneur are related. Aggregate quantitative studies would detect a habitual entrepreneur changing industries but not 'how' and 'why'. A finding in this study is that successful serial entrepreneurs can change industries but only when ventures are still closely connected by transferrable, i.e. recycled prior knowledge. In the study this also occurred in one of the non-serial founder entrepreneur case study exceptions. An inheritor grew the turnover of the family firm from "£2million up to about £75million", and exited after an acquisition of a bankrupt firm in a distant but still related industry (Case 5). This entrepreneur discovered his second venture accidentally when a famous UK brand went into receivership. His then current firm had licensed a design owned by the now bankrupt company. He related the circumstances, "I got a text on my Blackberry saying 'PQR company are in difficulty', and I got another text saying about an hour later 'They've gone bust', so I reply saying 'Right, let's go there and see the administrator tonight', so I picked up my licencing director at the time. "

His initial objective was to buy the design IP (Intellectual Property) from the liquidator, thereby removing all future IP licencing costs. Unexpectedly he managed to purchase the complete design and tooling IP at low cost, and was able re-launch the brand in the UK. He was able to replicate, transfer and apply nearly all sources of competitive advantage from his first business to the new unintended purchase. This included product and packaging design, low cost manufacture in Asia and UK retail distribution. However, he couldn't transfer his existing business model, as he had to move up the value chain. Nevertheless, having spent many years competing against strong retail brands, he knew the strengths and weaknesses of brands, and also undertook further professional training in brand development. He exited his first venture to dissolve an unsatisfactory partnership and pursue the new opportunity. As this case example of acquisition is an exception to the core study more research is required. It could well be that acquisitions of existing firms are more or less efficient for the replication and adaptation of key aspects of the 'donor' enterprise.

7.4.5 4. External Replication of an Existing Business

As already discussed, serial entrepreneurs enter attractive industry sectors by initiating start-ups that by and large copy incumbent firms.

- Entry into an Emerging New Sector

Pull Factors

Following a successful exit, some serial starter entrepreneurs choose not to pursue the same or similar opportunities, but confidently start new firms in growing sectors using the proceeds of the exit. Low and Abrahamson (1997) call this part of an industry lifecycle 'joining bandwagons'. The attraction of high growth sectors such as the internet during the dotcom boom, set against the lack of detailed specific information available about necessary resource requirements and viable business models, results in entrepreneurs entering sectors where both their prior knowledge and absorptive capacity to learn (Cohen and Levinthal, 1990; Zahra and George, 2002) or acquire information (Fiet, 1996) is insufficient. The study contains examples of serial entrepreneurs who gathered insufficient experience in their first venture (Cases 10, 16, 19). They replicated the entrepreneurial team 'recipe' unadjusted for new circumstances (Starr and Bygrave, 1991; Wright, Robbie and Ennew, 1997a,b) learned in the first venture, but lacked the quality of social capital and the recruitment skills necessary to find suitable team members. This type of unsuccessful new venture creation process may underlie Toft-Kehler, Wennberg and Kim's (2014) postulate that entrepreneurs may not learn enough from the first venture.

Push Factors

In a similar finding to previous research (Alsos and Carter, 2006; Iacobucci and Rosa, 2004), this study found instances of government enterprise agencies encouraging entrepreneurs into new emergent or pre-emergent sectors. Agencies bring new innovative opportunities to established or well-known entrepreneurs to 'start a movement' as termed by Low and Abrahamson (1997) in the earliest phase of an industry lifecycle. The opportunities are supported by official market research and incentivised with grants and social capital in the form of access to senior politicians and other establishment decision makers. For example, UK government agencies supported the development of new IT solutions to facilitate home working, and blended work place learning (Case 13). This genre of second venture invariably failed, as opportunities were in incipient/pre-emergent sectors too far from the entrepreneurs' relevant experience. Some entrepreneurs learned the lessons from this negative experience (Case 16), other entrepreneurs repeated the mistake (Cases 13, 24). Both those who repeated the experience had a more varied entrepreneurial career, and with slow growing current ventures were motivated to seek unrelated diversification opportunities to form a portfolio of parallel ventures. They were less risk averse and wanted to find the next 'big thing'. The strategy may be sound, but tactically the opportunities proved beyond their capabilities. In one

case, the experienced serial entrepreneur said, “I was far too early to market with a solution to an opportunity that was not well understood” (Case 13). They were swayed by the subsidies and opportunity to develop social capital. They may have been flattered by the attention from the government as spokespersons for the entrepreneurial community and felt that they had to reciprocate or justify their social standing.

This finding shows that start-up experience is not sufficient, that relevant prior knowledge is required. It helps explain other research that finds mixed results for the effect of prior entrepreneurial experience on firm survival (e.g. Bruderl, Preisendorfer and Ziegler 1992; Stuart and Abetti, 1990) and supports the conclusion that experience is strongly affected by contextual or situational factors noted in previous research (e.g. Chandler, 1996; Toft-Kehler, Wennberg and Kim, 2014). Further research is required as to why unrelated opportunities in pre-emergent industries are pursued by both serial and portfolio entrepreneurs.

- Entry into a Growth Sector

Mimicking and emulating existing firms by replication to enter growing sectors can also be accompanied by innovation. In one case (Case 10), having had negative experiences in a previous venture because of poor quality manual work, a serial entrepreneur purchased and installed the first Computer Numerically Controlled (CNC) manufacturing capability in his industry in the UK, taking great risks to finance and learn the new technology. Another serial entrepreneur (Case 25) entered the mature and declining UK clothing manufacturing sector, but to serve a high growth consumer market she knew intimately from her first venture, just as the innovative Lycra fabric from Du Pont became available for the first time. “Another innovator (Debbie Moore) in the same sector persuaded Du Pont to make a Cotton-Lycra, and the new (niche) market took off”.

7.4.6 5. Recruitment to Entrepreneurship (Specialist or Unique Skills)

Some entrepreneurs are recruited by other lead entrepreneurs to become partners for both their first and second ventures (Cases 1, 21). They possess particular or rare skills developed in employment, e.g. for the then emergent computer industry, and/or have considerable social ties that connect them to new opportunities.

7.4.7 Sources of Innovation in Second Ventures

Second venture innovations are much more related to prior knowledge and specific entrepreneurial experience developed in previous ventures. Transfers of business models to other industries by serial entrepreneurs, spin-offs and related diversifications to start portfolios can all be innovative.

Experienced entrepreneurs use their existing business knowledge to search for gaps or apply new ideas to develop new means or ends. In this study, knowledge corridors can also be innovation corridors, as revealed in other research on the effects of prior knowledge (e.g. Grégoire, Barr and Shepherd, 2010; Shane, 2000). Progressively deeper knowledge in familiar areas may explain an ability to notice new opportunities that may explain the consistent rate of innovation in both first and second ventures.

The literature (e.g. Gruber, MacMillan, Thompson, 2013) finds that the prior knowledge of the entrepreneurial team restricts their ability to recognise new opportunities. However, entrepreneurs can be persuaded to take on unrelated innovative opportunities with government sponsorship and support. We can add that prior knowledge restricts the entrepreneur's ability to recognise feasible new opportunities.

More natural internally or externally fostered forms of innovative opportunities arise from three sources: a) those related to new information endogenously generated by an existing business, b) the application of new technology exogenous to the current business and c) opportunities introduced by potential collaborators.

Information Production in Prior Ventures

Specific unique private information created by one business is often the basis of another innovative opportunity and new firm. Several cases (1, 6, 22) illustrate the information origins of related but innovative start-ups. One venture in car leasing generated unique and inimitable insights into the driving habits of a difficult to serve niche market segment that went against the long standing assumptions held in the industry (Case 1). The new facts noticed by the entrepreneur resulted in a highly innovative rearrangement of the standard industry business model. The serial entrepreneur remarked, "This business has been one of the most successful of all I have been involved in." In another case study venture a private investigator noticed that legal papers for court hearings needed storage and also rapid retrieval. He devised the first computerised document management service for legal practices in the UK (Case 22).

Implementing Emerging New Technologies

An internet entrepreneur already very familiar with the sector formed a venture to provide a new type of on-line reward for the advertising industry (Case 21). A novice entrepreneur's first start-up replicated typical incumbents in the mature industry of advertising printing; then a seasoned CEO of a much larger firm mentored the novice entrepreneur to introduce emerging digital print technology (Case 7). The entrepreneur's second business under the mentor's guidance began the digitisation of

the UK print industry. In other cases already cited (3, 25) emerging ecommerce technology facilitated re-entry after a previous failure to exploit the same opportunity, and by researching the supply chain of a new high-tech fabric, the entrepreneur was able to supply new products to the community of hundreds of businesses of which she had been a member with her first start-up.

Opportunities Introduced by Potential Collaborators

As the corridor principle (Ronstadt, 1998) predicts, the study shows that a business is a natural source of new opportunities and collaboration occurs as industries co-evolve (Aldrich and Martinez, 2001). Collaborators can bring both new information and new technology. Owning a business positions the entrepreneur as a potential collaborator or joint venture partner for new starts-ups or existing firms. These are discussed further in the section on the origins of opportunities for established entrepreneurs later in this chapter.

7.4.8 Summary and Key Findings

1. Four main modes of founding transition novices to serial entrepreneurs: Internal Replication, Internal Diversification, Internal Replication and Transfer, and External Replication. The majority of modes reflect the reuse of prior knowledge and resources in creating a second enterprise.
2. The exit conditions of the first business appear to determine the mode of founding for the second venture. (i) Entrepreneurs making highly remunerative exits of innovative businesses re-enter entrepreneurship with similarly ambitious ventures often in new industries. (ii) Failed entrepreneurs return to the same opportunity and try again with an adapted approach their ambition undiminished. (iii) If there is no exit then entrepreneurs start closely related or unrelated diversifications and commence a transition to portfolio entrepreneurship. Unrelated ventures fail.
3. Many second ventures are clones of businesses that closed unexpectedly for non-business reasons including disputes and fraud. Clones provide structured transformational learning for the more inexperienced entrepreneurs who then go on to start a number of ventures as 'lead' entrepreneur.
4. Therefore, an entrepreneurial opportunity can be separated from the venture (Plummer, Haynie and Godesiabois, 2007) and also the entrepreneur. When a business fails it is not always because it was a substandard opportunity that should be abandoned.
5. A very successful sale is associated with at least the same level of ambition and risk taking in the next cycle. There is a kind of ratchet effect. An unsuccessful exit is not associated with a reduction in ambition, just more caution through the exercise of new learning.

6. Ventures are successful when related to prior knowledge and other resources reused and recycled from a previous successful venture. Connectivity and similarities between two discrete ventures may not be obvious to quantitative studies focussed measures such as the industry classification.

7. Innovative opportunities are strongly related to previous business experience. Knowledge corridors are also innovation corridors.

8. Successful serial entrepreneurs can develop cognitive theories and heuristics to search for cross industry opportunities to fit a proven template business model.

9. Innovation occurs 'naturally' in existing enterprises. They produce new opportunity specific information, attract third party collaborators, and provide test beds for new ideas and new technologies.

10. Innovative opportunities should be given to entrepreneurs with relevant prior knowledge. Having entrepreneurial experience of start-up is not a predictor of success for unrelated ventures.

11. It is economic to exploit the same, similar or related opportunities where proven and de-risked knowledge and other resources can be reused, even if it requires the transfer of business models to different industries.

7.5 Part 2. Section 3. Breaks from Founding: Career Interludes and Pauses

This picture of a constant cycle of exit and re-entry doesn't convey the complete process. This study's objective is a more nuanced understanding of serial entrepreneurship. After exiting a first or subsequent business, some serial entrepreneurs take a break from entrepreneurship. These interludes are understudied and have bearing on the re-entry conditions and decision of serial entrepreneurs.

Research questions 1.3 and 1.4 ask: What is the impact of failure and success on venture selection by serial entrepreneurs?

The study finds that one of the effects of exit is that serial entrepreneurs take breaks between start-ups. These interludes and pauses are important for understanding how they manage their career and the relationship between their ventures. These interludes and pauses are significant for the incubation of new opportunities. In this study there was a marked tendency for the venture started on return to be influenced by the latest spell of non-entrepreneurial activity. Failing entrepreneurs take prolonged breaks from entrepreneurship ostensibly to recover from the negative effects of failure.

7.5.1 Interludes after Success

Some entrepreneurs, after a successful first (novice) venture, take a break from entrepreneurship (Cases 4, 11, 14, 17, 23). The sale of a business sells the rights to exploit a known opportunity to a third party. As previously discussed, having sold on the rights, they must usually find a new opportunity with which to re-enter entrepreneurship. Post successful exit, the pattern is for serial entrepreneurs still using prior knowledge to recognise and exploit a related opportunity even if it was in a different industry.

A very successful novice dotcom entrepreneur (Case 14) retired and went sailing for a few years. When engaged in a completely different activity of building a new home, he discovered his second opportunity to start a new venture by applying a variant of the unique innovative business model that was so effective in achieving his first successful exit at the height of the dotcom boom. After another year researching the opportunity he returned to the UK to start his second venture. Another successful entrepreneur (Case 11) undertook extensive research about issues facing the industry in which he had launched his first successful venture. Even though both had amassed a personal fortune with which to retire they returned to what some serial entrepreneurs referred to as the “game” of entrepreneurship.

In common with other studies (e.g. Mason and Harrison, 2006) this study also found that successfully exiting entrepreneurs use an interlude to become successful angel investors. They usually returned to entrepreneurship with new ideas less related to their first venture and much more related to their investing experience. In one case (Case 11) an entrepreneur invested in a series of dotcom start-ups, one of which was highly successful. On return he made his own dotcom start-up which lost £100k. This suggests that entrepreneurs learn continuously and there is perhaps a cognitive availability bias (Kahneman and Tversky, 1972) toward recently acquired information. Therefore, what happens in the breaks to the entrepreneur’s stock of knowledge, social capital and other assets is significant for the incubation of new opportunities. However, unrelated ventures inspired by new information were very likely to end in failure.

7.5.2 Pauses after Failure for Recovery

After an outright business failure, some entrepreneurs returned to employment or education or took a complete break (Cases 15, 16, 19). “I went AWOL” as one entrepreneur put it. Interestingly, business closures with small or no overall financial losses, while still a negative experience, were not followed by taking a break from entrepreneurship. In this study, overall frequency of outright failure

reduces as careers progress, these 'retreats from failure' occurred in the early phases of their careers after one, two and in one case three venture failures.

The evidence suggests that serial entrepreneurs can re-enter immediately after one unsuccessful exit, but more than one failure in sequence is much more likely to result in a complete break from entrepreneurship. Therefore, those serial entrepreneurs sustaining an affordable loss (Sarasvathy, 2001) do not exit for long. In some cases this return after one failure was facilitated by the finance providers (banks and angel investors) writing-off previous commitments including 'unaffordable' charges on the family home and providing further finance. Therefore, the study provides evidence for Plehn-Dujowich's (2010) extension to selection theory, where orderly shut-downs of unsuccessful ventures allow serial entrepreneurs to return practically immediately to entrepreneurship. Further research can explore if there is a general threshold in respect of the number and type of unsuccessful exits related to the speed of return to entrepreneurship.

The length of the break is likely related to the required recovery period which in turn is related to the size of the failure. Extended breaks of over a year followed two successive outright failures or closures, suggesting that there is a threshold number of unsuccessful exits. The breaks proved to be temporary pauses as they allowed recovery from the negative effects of failure, restoring self-esteem, family ties, reputation and finances. Breaks appear to generate fresh thinking as the negative effects fade. Breaks, intentional or unintentional, weaken social ties and dissipate obligations towards previous stakeholders, such as former business partners. Renewal involves the revaluing and redevelopment of prior knowledge and social capital. For example, serial entrepreneurs with a preference for team-based entrepreneurship used interludes in employment to form new teams of like-minded individuals with complementary skills.

As already reported, many first ventures are incubated in employment. If the first successful venture was incubated in employment those who left entrepreneurship after an unsuccessful enterprise took employment in the same field as the first successful business. These serial entrepreneurs went through a 're-incubation' process, only this time they each knew with increased certainty what they were looking for in an entrepreneurial opportunity. As one (Case 16) put it, "Having lived the VAR (value added reseller) nightmare for 5 or 6 years, having your own IP was always my objective." Taking a break after failure and recuperating while continuing to develop related knowledge increases the probability of future success. In all instances returnees started successful enterprises in a sector they knew well. Employment strengthened and refreshed their core knowledge, developed new social capital and restored confidence and financial liquidity.

It appears that while mental simulation is associated with opportunity recognition (Gaglio, 2004), going over past events and deciding which were the critical events and decisions that led to venture failure does seem to help failed entrepreneurs who later return and find success. Researchers believe that higher-order cognition is required to escape previous patterns and recognise new innovative opportunities (e.g. Rerup, 2005) and transformational learning is triggered by failure (eg. Cope, 2011).

7.5.3 Summary and Key Findings

1. Persistent serial entrepreneurs experiencing two or more venture closures or outright failures used employment or education to recover psychologically, economically and socially while reflecting, assessing and learning from experience.
2. Successful exits were also followed by breaks and then searching more widely for new opportunities, funded by greater liquid resources.
3. Breaks are significant as returning entrepreneurs were heavily influenced by the most recent activity undertaken, providing evidence for a kind of information availability bias.

7.6 Part 2. Section 4. Expert Modes of Founding: Third, Fourth, Fifth, ... Businesses

The comparative analysis of the remaining ventures is presented in this section. At this stage the serial entrepreneurs reach expert status as defined by Baron (2006) and Baron and Ensley (2006).

The origins of third, fourth, fifth, sixth, etc. ventures see a repeat of the modes of founding already interpreted for second ventures. The established modes are confirmed by saturation by more sub-cases (ventures). For example, a now very experienced entrepreneur (Case 1) exited a mini-computer business for personal reasons to start a new venture supplying terminals to this new rapidly expanding sector, clearly a case of an 'internal diversification' to make an related diversification in the same broad industry. In third ventures, closure and failure with losses are associated with attempts to start-up again in the same or a related area if the opportunity is not exhausted (Case 6, 15). Serial entrepreneurs continue to use an opportunity recognition heuristic to search for opportunities that meet their template (Cases 6, 17, 19, 23). By now established portfolio founders try unrelated diversifications that fail (Case 13), and related ones that take root (Cases 9, 24).

Unsurprisingly, at this stage in their career, no serial entrepreneurs are recruited into their third venture by other lead entrepreneurs. It is their preferred means of earning their living and

accumulating wealth. They demonstrate increasing expertise from previous learning for both success and failure evidenced by the reduced frequency of outright failure as their career trajectory continues on an upward path.

Nevertheless, the analysis and interpretation reveals additional modes of re-entry that reflect the increased maturity, reputation and social capital of an established serial entrepreneur. It also reveals that even experienced entrepreneurs can make mistakes and still have much to learn from experience. Certain scenarios are prevalent, in particular: a) returning to previously successful opportunities, b) attempting international ventures, c) facing further decisions to diversify into portfolio (parallel) founding. Conditions vary as does entrepreneurial experience and competence in making judgement in these scenarios.

7.6.1 Modes of Founding: Experienced Founders

Additional modes of venture creation through internal replication (copying existing forms that are cognitively familiar to experienced founders) and diversifying from the existing venture are illustrated in Figure 7.6 and explained thereafter.

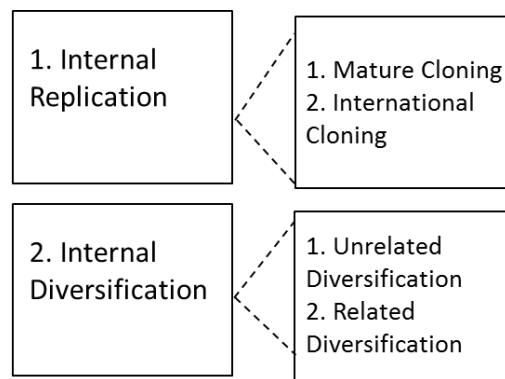


Figure 7.6 Modes of Founding: Experienced Founders

7.6.2 1. Internal Replication

- Mature Cloning

Immature vs. Mature Cloning

A mature form of cloning occurs in later phases of a serial entrepreneur's career, when an identical or very similar opportunity to an earlier venture presents itself (Cases 15, 16, 22). Mature cloning is very different to early 'immature' cloning of a first venture, following unexpected failure for non-business reasons. Firstly, a mature clone is of a successful venture, and secondly there is a considerable time gap between the original success and the subsequent clone.

Conditions are likely to have changed in the intervening period and the serial entrepreneur has at least one other start-up under their belt. While a replicate and adapt approach may be a more suitable strategy, in this study the instinct to 'clone' and reuse prior knowledge unmodified, returning to past glories is strong. Entrepreneurs who have just experienced an unsuccessful exit may be prone to reuse old recipes unadjusted for new circumstances (Wright, Robbie and Ennew, 1997a,b), in an unthinking, mindless manner (Rerup, 2005). This faulty process is named here 'cloning by projection' when the present is cognitively projected onto the past, using reasoning by analogy (Fiske and Taylor, 1991) but using superstitious learning (Levitt and March, 1988).

A serial entrepreneur whose second venture had just failed saw an opportunity that he perceived to be identical to his first very successful venture. However, as the entrepreneur (Case 16) related, "The market price of the equivalent product had fallen by two thirds, but sales costs were nearly as high." The unmodified reuse of the same business model as before led to margins that were too small to sustain the venture and it was shut down. From the case analysis, in his first successful venture margin control was not his area of responsibility and he had insufficient learning to assess the new opportunity competently. With two unsuccessful start-ups in a row, cumulative losses and family pressures, the serial entrepreneur had to exit entrepreneurship to resume paid employment. After a couple of years recovering he returned stronger and wiser to start-up a successful fourth venture in the same industry.

Another form of mature cloning also occurs when some time after a previous successful exit by sale, it becomes apparent that the new owners have changed the original business formula (Case 22). The business may have been sold again causing further adaptations to a once successful business. Social ties with previous customers, now customers of the new owners, provided specific 'inside' information and encouragement to the original entrepreneur.

In the words of the serial entrepreneur, "They (former customers) would pick up the phone and speak to me. The new American owners (not the firm he had originally sold the business to) decided that they wanted to change things and put in the business model that they used to operate in the States into being over here, and of course, it doesn't work. The idea of storage in the States, it is a bloody huge warehouse in the middle of nowhere, rammed to the top with boxes and putting someone in there to find a box and send it the next day. And of course that was opposite to how I sold the business here" (Case 22).

To take advantage of a mature clone opportunity, the serial entrepreneur must be either now free of any legal covenants attached to the exit, or is not challenged by the new owners when the clone is

started. In this study, the serial entrepreneur was able to pick up, recycle and reuse previous assets including customers, employees, premises and software systems relatively cheaply and quickly, in the same locality using the same network of social ties. Former customers who encouraged the entrepreneur to reincarnate by cloning the old business were clearly obligated to support the new venture.

The extant literature (e.g. Mason and Harrison, 2006) documents instances of sellers buying back (rather than re-starting) into previous ventures and the circumstances and logic are likely to be similar. Other cases of mature cloning were also captured by this study. Overall, the evidence indicates that the majority of mature cloning of earlier ventures in third and subsequent businesses is likely to be restricted to certain industry sectors and forms of enterprise. These are likely to be in mature industries not undergoing rapid change, and/or having stable, clear and well understood business models; e.g. professional services such as recruitment, franchisees or distribution opportunities.

- International Cloning (International Ventures)

Another form of cloning is international venturing, where a largely unmodified version of the home business is established in another country (Cases 9, 17, 18, 23). The initial start-up is based on a clone, even though modification inevitably occurs because of differences in context and content between the home and the new market. In this study, the majority of these start-ups fail due to lack of experience. The entrepreneur falls into similar cognitive traps mentioned above and fails to realise in the opportunity recognition and assessment phase that there are material differences between the home and foreign markets. International ventures can transition a serial entrepreneur into portfolio entrepreneurship, but in this study nearly always only on a temporary basis before the foreign enterprise failed, closed or shrank to an insignificant size.

The extant literature on habitual entrepreneurship indicates that international ventures are not always successful (e.g. Mason and Harrison, 2006). International ventures may be a symbol of success and reputation in the home venture. International opportunities were in every case not recognised by the entrepreneur but rather brought to the entrepreneur by third parties such as foreign nationals, or via social ties to employees who emigrate or who have family members living in other countries. A typical comment from one case is, "We received a CV from a guy in the US who had been in the industry who was looking for a job, and we said, right, we want to go to the States, let's fly him over." Success and high rates of growth in the home market seem to blind all parties to the risks of international ventures. In line with the current literature, only difficulties, i.e. critical

incidents (Chell, 2004) and retrospective assessment post-closure stimulate transformational learning (e.g. Cope 2011).

In contrast, and perhaps more by luck than design, a successful international serial entrepreneur (Case 17) tested the viability of international operations in Europe through a franchise agreement. The franchise was opened in a small geographically isolated European country culturally and economically similar to the home country.

“Before I moved to the UK we actually franchised out Country A, it was a coincidence these two students who were students in my country and so knew the business said they wanted to do it in Country A where they came from. I said ‘fair enough’. I wanted to test if we could do it technically” (Case 17).

Most of the risk was displaced to the franchisee, and the entrepreneur would have been able to distance himself from the experiment had it failed. This limited and controlled experiment, as in the development and exercise of real options (McGrath, 1996) managed uncertainty while simultaneously facilitating entrepreneurial learning in an effectual (Sarasvathy, 2001) process.

7.6.3 2. Internal Diversification

- Spin-Outs (Unrelated Diversification)

New opportunities are a common occurrence throughout the career of serial entrepreneurs. A related diversification may lead to the development of a portfolio when the current firm is not exited. As is the common theme throughout the study, unrelated ventures fail or are shut down. While they are still operating the serial entrepreneur enjoys a form of temporary portfolio status.

In a case study (Case 18) one new innovative venture used ecommerce as a new means to serve customers, leading to the parallel development of unique expertise in ecommerce, spun-out as a new venture. In this case the entrepreneur called it “ill-conceived and not well executed “. The entrepreneurs were very competent, but the new venture was too far from their prior knowledge and expertise in an emerging sector where there was insufficient information to make anything other than a risky entry. Interestingly, a number of entrepreneurs, when asked what new ventures they were working on, would describe this type of unrelated spin-out venture. It could be that pursuit of unrelated venture opportunities and the risks that they embody is not uncommon, as they are attractive to potential portfolio founders seeking new growth opportunities. However, because few succeed, the life histories of portfolio entrepreneurs, such as those researched by others (e.g. Iacobucci, 2002) are likely to show only related ventures at aggregate levels of assessment.

A mature and experienced entrepreneur developed a culture and systems for handling spin-off and related diversification opportunities (Case 26). If it is internally generated, then the employee must convince the owners that they have the necessary entrepreneurial qualities to lead the project. For mature established entrepreneurs some spins-offs and diversification opportunities are generated by 'walk-in' 'would be' entrepreneurs (Cases 9, 17, 20, 26). The recruitment services entrepreneur (Case 26) who had experience of using a systematic approach to new opportunities acted on a 'walk-in opportunity' from a younger less experienced 'would be' real estate entrepreneur. When questioned by the researcher about the apparent unrelated nature of this venture the experienced entrepreneur, on his fourth venture replied, "In fact the new opportunity had lots of similarities; both are 'people' businesses, both match buyers to sellers, and both have transaction and recurring revenue streams".

The venture in this case suggests that some very experienced entrepreneurs can develop a higher order cognitive ability to see meta-connections between the business models of ostensibly unrelated opportunities in different industries. This is similar to other cases discussed in the context of second ventures where a serial entrepreneur discovered or developed a successful business model template that was applied to new opportunities in other industries.

Nevertheless, there has to be a good fit derived from prior experiences. Missing elements such as a means to serve that works for the customer can be the downfall of a promising venture. In another 'walk-in' opportunity, a location database entrepreneur was approached by a programmer who wanted to produce a solution to the travelling salesman problem (TSP) (Case 9). It was related to his existing business because "It was using existing data sets that we had". "We have been shoot from the hip merchants ... I looked into the business opportunity and again I thought this is a market that we could really disrupt." Despite a prototype solution being devised the customers didn't want a solution as there were unanticipated problems for which they didn't have the relevant experience and skills. "Actually what transpired was we were selling to a different group of people. The guys we were selling to would be making a decision tantamount to turkey's voting for Christmas." "These were the kind of issues you really only discover once you kind of jumped in."

7.6.4 Sources of Innovation in Third and Subsequent Ventures

Fourth, fifth and later start-ups were also innovative in roughly the same proportion as in earlier career phases. In the third venture there is a fall in the proportion of innovative ventures, although there is no discernible pattern in the career trajectories to account for this aggregate statistic. In these later phases there are mature clones of earlier ventures and some serial entrepreneurs enter

established industries by external replication. Just as with second ventures, innovations were related to prior knowledge and specific entrepreneurial experience. As in second ventures they arise from a) new information endogenously generated by an existing business, b) the application of exogenous technology and c) by potential collaborators. Again even closely related diversifications can be innovative. These could be externally brought in opportunities from collaborators in related industries, or less successfully from Government agencies sponsoring 'blue sky' ideas. Serial entrepreneurship and innovation is discussed at more length later in this chapter.

7.6.5 Summary and Key Findings

1. Third and later ventures in the careers of now expert serial entrepreneurs conform to most of the patterns found in second ventures. In addition, experienced serial entrepreneurs clone previous successful businesses when the same opportunity becomes available again.
2. Serial entrepreneurs may transition to become established portfolio founders.
3. Despite their expert status, if insufficient learning has taken place in a previous venture they may make cognitive mistakes in assessing similar opportunities and apply 'old recipes' (cognitive templates, etc.) when conditions have changed.
4. For example, success in the home market seems to blind all parties to the risks of international ventures. Recovering from the failure of an unrelated venture can also generate a false-positive assessment of new opportunities.
5. Some very experienced/talented entrepreneurs are able to see meta-connections between current ventures and seemingly unrelated opportunities in other industries.
6. Limited controlled experiments are superior for managing uncertainty and supporting learning. Collaborative opportunities with other firms and individuals become possible as more businesses reach maturity and become well-known in their sector.

7.7 Part 2. Section 5. Synthesis: Model of Career Trajectories of Multiple Founders

From results of the comparative analysis a new model and theory of the career trajectories of serial entrepreneurs is synthesised. The first element of the theory is a summative list of all the serial modes of venture creation already reported. They are listed here below in Figure 7.7.

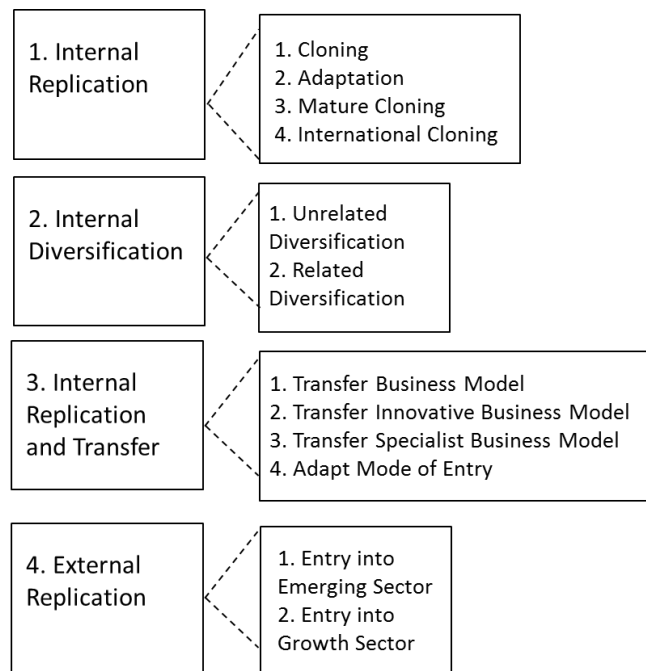


Figure 7.7 Modes of Founding

So far as the sample has allowed it also includes portfolio founders. In summary there are four modes or super-types of new venture start-up that occur after the first novice business:

1. Internal Replication – cloning a previous venture that failed for non-business reasons or adapting on the basis of learning in reaction to a venture failure. This often results in a successful business eventually.

2. Internal Diversification – making a related or unrelated diversification in response to a low quality current venture. Related ventures lead to transitioning to portfolio entrepreneurship or liquidating a lower quality enterprise if a serial entrepreneur. Unrelated ventures of all types are very likely to be unsuccessful.

3. Internal Replication and Transfer – starting-up in a new industry by transferring essential components of a previous venture. Can be very successful if the transfer is applicable.

4. External Replication – forming a start-up by copying an incumbent, typically in a growth sector, and making adaptations to compete more effectively. Progressively better opportunities are substituted over a career. The lack of innovation is likely to constrain exit values.

The second element partially anticipated from the literature review and its synthesis of centrifugal and centripetal economic forces, is that the alternative post-conditions of a venture: (i) successful exit, or (ii) unsuccessful exit, or (iii) no exit leads to different choices for the next venture. In other

words, for serial entrepreneurs the post-conditions at exit of one venture become the pre-conditions for the next venture creation process and these conditions can be used to predict the founder entrepreneurs decision i.e. it has both explanatory and causal power.

Successful Exits

After a successful exit it is more likely that serial entrepreneurs will start-up in a different industry and/or increase the degree of innovation without reducing the size of ambition. The higher liquidity and opportunity abandonment resulting from the sale of a business as a going concern provides the stimulus and resources (time and money) to find new innovative opportunities and move to different industry corridors. Nevertheless, these are not completely unrelated new ventures and a connection to prior knowledge remains. Should an unrelated venture be attempted, the lack of a substantive connection between ventures results in failure or closure. It appears that no amount of social or financial capital can compensate for a lack of reusable relevant entrepreneurial experience.

Unsuccessful Exits

After an unsuccessful exit it is more likely for the serial entrepreneur to return to the same opportunity. This may happen immediately if the business closed for non-economic reasons, or after a period of recovery and a new adapted business model if the reasons for failure are understood, new learning occurs and changed conditions are recognised and exploited. In contrast, more experienced entrepreneurs with an established business are tempted to try unrelated diversifications, and establish a portfolio. There is no exit from entrepreneurship and these failures are not revisited.

No Exit

When there is no exit, conditions of the current venture (s) become the pre-conditions for the next cycle of venture creation. Here conditions for portfolio entrepreneurship arise. Highly related diversifications are more likely to succeed, though seemingly attractive unrelated opportunities occur regularly. In addition, it is manifest from the analysis that a start-up can end in closure or outright failure when an opportunity is a 'false positive', having all the hallmarks of a mature clone, when in fact industry conditions have changed or the international market is different from the home market.

The potential alternative pathways induced from the case analysis for exiting serial founders and non-exiting portfolio builders are summarised here.

Serial Entrepreneur Unsuccessful Exit:

1. Same opportunity. Clone and 'reboot' previous venture when unexpected failure. Success is likely if learning has been accomplished and business conditions have not changed.

2. Same opportunity. Replicate previous venture but adapt and try again using a different approach. Success if sufficient transferable learning has taken place including adaptations to new conditions.

3. New opportunity. Replicate critical elements of previous venture, e.g. means to serve and adapt to a new industry. Success is likely. Rare as it needs a third party in the new industry to introduce the opportunity.

4. Abandon opportunity and recover. The usual response to failure by serial entrepreneurs is to try again with a clone, spin-out or adapted venture. Two or more negative exits in succession result in opportunity abandonment and a return to previous employment or education. Re-entry to entrepreneurship is again to an area of previous experience making adaptations or making a mature clone of a previously successful opportunity.

Serial Entrepreneur Successful Exit:

5. Same opportunity. Mature clone of previous venture, when opportunity becomes available again. Success is likely when industry conditions have not changed, i.e. no direct competition and sufficient learning has taken place. Key resources are available for recycling and reassembly of the clone.

6. New opportunity. Stay within the same industry, finding new opportunity, using the same general means such as software development.

7. New opportunity. Transfer to a new industry corridor. Replicate critical elements of a previous venture in a heuristically applied template e.g. means to serve, and then adapt to a new industry. Success is likely.

8. New Opportunity. Copy an existing business in another industry. Failure or closure more likely as unrelated and insufficient relevant learning.

Transition from Serial to Portfolio Entrepreneurship Maintaining Current Venture

9. New Opportunity. Make a related diversification, i.e. a new but related opportunity in the same industry, and transition from serial to portfolio entrepreneurship.

10. New Opportunity. Make an unrelated diversification. This is a radical departure from the current business to a different industry. The transition to portfolio entrepreneurship is likely to be

temporary as failure or closure is likely as there is insufficient relevant learning and transferable resources.

11. Same Opportunity (In fact different). Make a clone in another country. Following false perception, it is managed as the same opportunity, but likely fail as it lacks similarity in critical areas. Smaller scale international ventures e.g. a franchise is more likely to succeed.

The pathways or corridors derived from this study are summarised in the following table.

	Outcome of Previous Venture	Next Opportunity	Industry	Venture Creation Process	Prior Knowledge Reused *	Most Frequent Outcome
1.	Fail	Same	Same	Clone	M, MS, E	Success
2.	Fail	Same	Same	Adapt	M, MS, E	Current
3.	Fail	New	Same	Replicate	MS	Current
4.	Fail (s)	<i>Job</i>	<i>Same</i>	<i>Return Via 2. or 5.</i>	M, MS, E	
5.	Success	Same	Same	Mature Clone	M, MS, E	Current
6.	Success	New	Same	Replicate	M, MS, E	Current
7.	Success	New	New	Replicate	MS	Success
8.	Success	New	New	Copy		Fail
9.	Current	New	Same	Replicate	M or E	Portfolio
10.	Current	New	New	Radical		Fail
11.	Current	Same	Same	Foreign Clone	M, MS, E	Fail

*Means, Means to Serve, Ends (Shane, 2000)

Table 7.9 Outcome and Next Venture Creation Process

Breaks: Interludes and Pauses for Recovery

This new theory is extended to include the effect of prolonged breaks between ventures, which affect the simple and direct translation of exit post-conditions to re-entry pre-conditions. As has been discussed, after a successful high value exit an entrepreneur may indulge in other not directly related activities that revise their knowledge and bring them into contact with other unrelated opportunities that may deflect their trajectory. Of course, the alternative is also possible and they engage in related activities that reinforce their path. Also as previously discussed, breaks are used to recover from a series of unsuccessful exits. Persistent serial entrepreneurs use the pauses to reflect and learn from the past, dissolve unfruitful relationships and focus on how to return to a related area with a new venture.

Heterogeneous Behaviour

The new theory helps address the observation by researchers as to the wide variety of behaviours that must be encapsulated to form a comprehensive theory of entrepreneurship. Existing theories of habitual entrepreneurship such as 'success breeds success' are positioned within this new framework. It corresponds to pathways 5, 6 and 7. It should be well noted that no claim is made here that the new theory is complete and comprehensive. There are sure to be additional pathways to be discovered in follow-on research. Furthermore, heterogeneity will always be a feature of this model because entrepreneurship is still an open system. The founding, exit and re-entry decisions of serial founders will be moderated or mediated by other circumstances that require entrepreneurial judgement. This study that aside from economic conditions there are also the actions of other actors that affect the attainment of purely economic outcomes. These include: mentors, acquiring firms, and VCs. There are also socio-economic factors such as personal disputes, unethical behaviour and the complex web of social ties that impinge upon decisions.

7.7.1 Repeated Patterns of Founding Behaviour

Nevertheless, there is further evidence for homogenous patterns of behaviour. Some founders can repeat these modes of founding. In other words, they continue to practice what they have learned from previous foundings as their preferred strategic approach to venture creation. Repetitive firm founding has centripetal path-dependent qualities. Entrepreneurs pay attention to positive feedback as part of learning (Minniti and Bygrave, 2001) and it is costly to unlearn cognitively deeply rooted theories, heuristics blueprints/templates used in the exercise of entrepreneurial judgement.

These learned and repeated pathways or corridors, evidenced in the data, and partly inspired by the work of Gruber (2010) are illustrated in the following diagram.

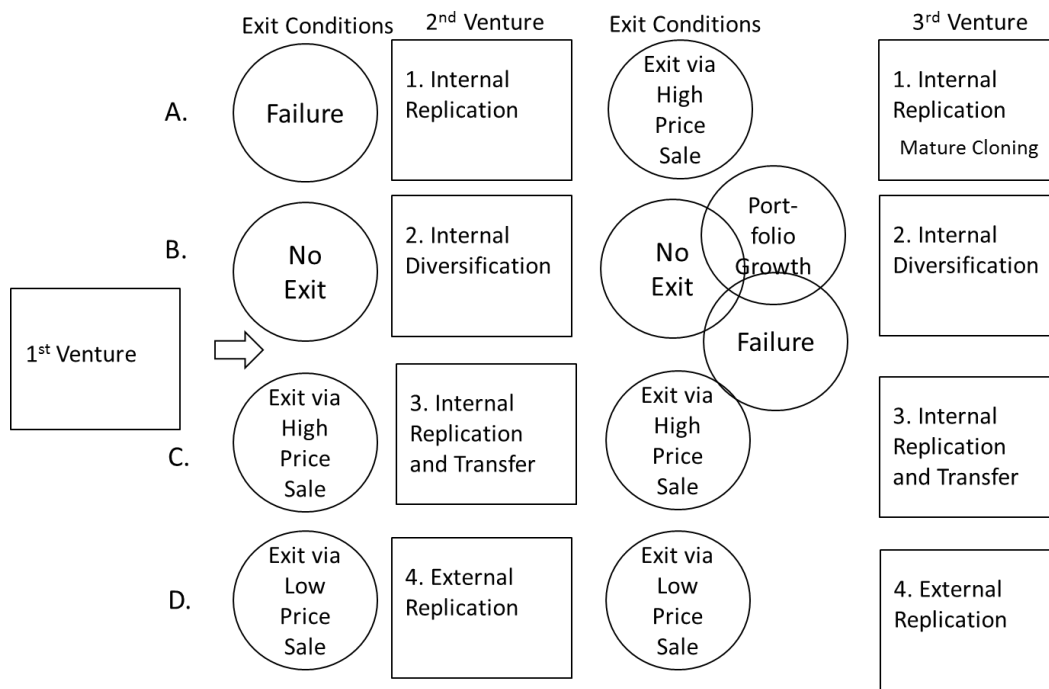


Figure 7.8 Repeated Modes of Serial Founding

Pathway A is a very restricted type where the serial entrepreneurs keep to a relatively narrow knowledge, limiting search and alertness.

Pathway B is followed by a diversifying serial entrepreneur. Related opportunities are discovered and implemented at low cost. Unrelated diversifications that are potentially path breaking are most likely to fail. The pattern repeats because they are 'stuck in the middle' with a business of moderate quality and are without an exit.

Pathway C is path breaking. The first venture is innovative and a high value venture. Nevertheless, the path is not completely open because discovery and exploitation of opportunities are still related.

Pathway D is traversed by serial founders who sell a low or moderate quality imitative business to pursue a better imitative opportunity but in an emerging or growth industry.

While as reported, chance may bring a related venture that provides an escape from an industry in decline or in severe recession (Case 18), and collaborators may present opportunities that were neither sought nor noticed, unlike Gruber (2010), unintentional or a random emergence of a path or path breaking is very unlikely to succeed. For a better opportunity to be exploited prior resources must be relevant and available for reuse.

7.7.2 Summary and Key Findings

1. A new model and theory of serial founding is presented. The model also includes what has been captured about portfolio entrepreneurs.
2. This new theory is extended to include the effect of prolonged breaks between ventures, which affect the translation of exit post-conditions to re-entry pre-conditions and deflect a career trajectory.
3. Modes of business creation may be self-reinforcing such that experienced serial founders repeat the same approach. This is a new type of entrepreneurial learning.
3. Further research using the constructs and measures arising from this study (exit conditions, relatedness, innovation, etc.) is required to determine if these modes and career paths hold for other and larger samples of serial and portfolio entrepreneurs.

7.8 Part 3. Section 1. The Nature of Venture Corridors

In this section, analysis also contributes findings relevant to Theme 2. Theory and evidences suggests that serial entrepreneurs will follow a relatively narrow corridor (Ronstadt, 1986; 1988) of related ventures constrained by prior knowledge, social and physical resources, cognition, and learning. Research question 2.1 asks: Do serial entrepreneurs make closely related diversifications, i.e. stay in the same industry corridor to reuse related prior knowledge and other resources? 2.2 asks: How do exit conditions, positive or negative, affect the choice of venture corridor?

The analysis and findings presented so far have already addressed these questions in part. Serial entrepreneurs do change industries especially after a successful exit. Both serial and portfolio entrepreneurs are faced with decisions as to whether to pursue related or unrelated opportunities. The inherent difficulties of exploiting unrelated opportunities bring entrepreneurs back to a corridor of ventures linked by prior knowledge and other resources. This section presents further evidence and discussion.

7.8.1 Venture Similarity, Prior Knowledge, Innovation

The study used three qualitative methods derived from the literature to triangulate the degree of venture similarity (see Chapter 5). Antecedents arising from prior employment and other experiences over the serial entrepreneur's career are also included in the analysis. The summary statistics of the whole sample are given here below.

Venture Sequence	Similarity	Prior Knowledge	Imitative	Innovative
1 st	58%	67%	54%	46%
2 nd	75%	77%	54%	46%
3 rd	69%	88%	67%	33%
4 th	74%	67%	47%	53%
5 th	63%	63%	58%	42%
6 th	73%	89%	44%	56%
Total	69%	75%	53%	47%

Table 7.10 Venture Relatedness and Innovation

In aggregate the similarity of a venture to the previous venture (or employment) is high (69%) as might be expected. The use of prior knowledge is also high (75%) as would be predicted. It is only in the first novice business when entrepreneurs transition from employment that similarity is less, again as might be anticipated. What is interesting is that despite the high degree of similarity the ventures are approximately equally divided between imitative and innovative, with the exception of the third venture, where imitative ventures were more frequent. Serial entrepreneurs found ventures that are similar in terms of customers, products, technology etc., reuse prior information about means, means to serve and ends and still innovate in half the instances of business creation. In terms of how and why this occurs, the detailed analysis of the modes of founding has shown how new forms of business arise even as serial entrepreneurs work to preserve and reuse prior knowledge and other resources.

Industry Corridors

As the economic matching principle predicts, exiting serial entrepreneurs will seek progressively better opportunities until they find one that matches their abilities. We might expect the higher than expected degree of innovation to be related to changes in industry corridors.

Chen (2013) found in data of US serial self-employed and small business owners that 57% started businesses in an industry where they had founded one before. Schollhammer's (1991) early study found that 80% of all second venture initiatives are in the same or a closely related industry. In this study the equivalent summary statistic is 58%. In addition, taking a slightly different view across all

ventures the proportion of serial entrepreneurs who maintain their entire career in the same industry is 53%.

However, these summary statistics do not paint a complete picture of the underlying process. Sustaining a new start-up business in a different industry is more difficult. While 28% of all ventures in the study were founded in different industries from the preceding enterprise, only half survive as current ventures, and only one has been sold on as a going concern. All the surviving ventures are still related in some way to previous ventures with just one exception, that of an entrepreneur (Case 1) who switched industries after a disastrous failure, starting again from “rock bottom”.

Knowledge corridors can connect serial entrepreneurs to new industry corridors, a finding that supports propositions about the connectedness of corridors (e.g. Chandler, Douglas and DeTienne, 2005). Transferrable knowledge of means, ends and business models allows the recognition and exploitation of opportunities in other industries. Without these connections the venture is too far from the entrepreneur’s experience and resources and closes or fails outright. To underline the importance of prior knowledge, a lack of prior knowledge is associated with unsuccessful outcomes. In 67% of failed and 60% of closed enterprises, the entrepreneur was completely without one of either prior knowledge of markets, means to serve or customer solutions on start up. As previously noted in this chapter, it appears that a talent or experience of founding is in isolation insufficient for successful venturing in new areas.

Therefore, if half of all ventures are innovative then some are the result of the transfer (infection) of other industries by related knowledge and resources, but the majority of innovation is intra-industry.

In one example of a successful transfer to a new industry, the serial entrepreneur (Case 2) changed to a new industry (mobile phone app development) with a completely new product but he still served former clients and their customers by re-using prior knowledge of technology, marketing and sales. He remarked, “Other new skills had to be learned the hard way”, in an emerging sector which had little information available and few established firms to replicate.

Case 20 shows how changing industries can arise from a combination of specific prior knowledge, alertness and a preparedness to act. Here failure caused the opportunity to be abandoned and the two partners searched for a new opportunity. One positive outcome from the failure of a property services venture was their strong partnership forged in the heat of very difficult circumstances. As they searched for a new opportunity, an insignificant part of their first venture allowed them to notice a significant change in the licencing model for a national database that all established industry participants had overlooked. As they related, “We were starting with a real green field, two

incredibly green people who had no experience of start-ups particularly, having failed one already, no contacts or industry knowledge of the technology space. It was a massive massive risk.”

A change in industry can also occur through the experience of being a customer. The serial entrepreneur’s existing small franchised business developed a competitive advantage from close customer-relationships and an outstanding quality of service (Case 25). The very negative experience of being an early customer of a new product in an emerging sector led her to realise that she had the appropriate transferrable skills to serve customers better than the incumbent. She was also able to reuse the knowledge gained as a franchisee to move up the value chain to become a distributor.

Cognitive Expertise and Connections between Industry Corridors

Several cases have been presented in this chapter where serial entrepreneurs successfully changed industries, and there were connections of reused prior knowledge and other resources (Cases 1, 2, 5, 7, 14, 23, 26, 25). Under Theme 3. Research question 3.3 asks: Are higher-order cognitive abilities in evidence? In the sections above some detailed examples have been given of experienced serial entrepreneurs discovering or developing an industry transferrable business model template with a cognitive opportunity discovery and exploitation heuristic to employ it; they occur in Cases 5, 7, 12, 23 and 26. These cases support Manimala’s (1992) finding of an organisational opportunity capture heuristic and Bingham and Eisenhardt’s (2011) conclusion that heuristics are ‘rational,’ and the transition from novice to expert heuristics is an important step in developing resource capabilities. Some experienced entrepreneurs are able through mindful (Rerup, 2005) high order thinking (Lord and Mather, 1990) to make meta- connections using reasoning by analogy (Baron, 2006; Fiske and Taylor, 1991; Gavetti, Levinthal, and Rivkin, 2005) and mental simulation (Gaglio, 2004) between business models in apparently different industries. Others are able to use small information clues (Simon, 1973) to think counterfactually and conceive of opportunities that go against conventional wisdom. These serial entrepreneurs demonstrate a particular and expert level talent. In addition, it will be argued later in this chapter that successful within industry diversifying portfolio entrepreneurs employ their own form of this opportunity heuristic.

The new evidence presented adds to established theory and evidence. Other studies (e.g. Grégoire, Barr and Shepherd, 2010; Gruber, MacMillan, Thompson, 2013) show that prior knowledge acts as a knowledge corridor, with Venkataraman (1997) arguing that knowledge exhibits path dependent qualities. However, this simple first order comparison of venture similarity cloaks second order effects that lead to intra-industry innovations. Progressively deeper knowledge in familiar areas

confers an ability to notice new non-obvious opportunities (e.g. Grégoire, Barr and Shepherd, 2010). Herein is a likely reason for the higher number of innovative opportunities found in this study than might be expected from a review of the literature. Prior knowledge acts as a cognitive blueprint or template (Baron, 2006). The template and the additional economic costs of acquiring new information constrain the development of new knowledge to deeper knowledge of a similar type which aids innovation. Furthermore, we have shown that closure and outright failure triggers transformational learning and new but substantial modified efforts to try again in the same industry. Furthermore, Shane (2000) maintains that all opportunities are related to prior knowledge. While this is true at the aggregate level for most of the ventures, for some unrelated diversifications the link is tenuous, e.g. opportunities introduced and incentivised by government agencies. This type serendipitous alertness of information (given but not sought) (Kirzner, 1973) can be dangerous.

A much more detailed discussion of the nature of innovation by serial entrepreneurs is provided later in this chapter.

7.8.2 Multiple-Corridor Careers

Serial entrepreneurs can have careers that traverse more than one industry corridor, though several complete changes of corridor are probably rare. The most experienced serial entrepreneur in the study (Case 1) operated in three separate and distinct corridors with apparently little to connect them. The first two corridors (business to business services and computer equipment and software) arose from recruitment into entrepreneurship to access his proven managerial ability and technical expertise. The third corridor arose from a serious business failure that resulted in a bankruptcy that exhausted both social and financial capital. When asked why his extensive social and business network did not provide another opportunity as earlier in his career, the entrepreneur remarked, "Nobody wants to know you when you are bankrupt. I had hit rock bottom". While in other careers this may have prompted a permanent exit from entrepreneurship, this resource poor situation and lack of alternatives stimulated his entrepreneurial instincts. When buying a second-hand car at auction for his wife he was alert to a completely new opportunity that he had just enough resources to address. He relates how the opportunity developed. "I then bought a couple of second hand cars, bought them and sold them and then realised that there are a lot of nearly new cars being sold through the auction. So I set up a business called Phoenix 'out of the ashes' of me having lost everything, buying used nearly-new cars on behalf of companies". This path had no obvious connection to previous corridors except for the reuse of his entrepreneurial skills. In all other respects he resembled an undercapitalised novice pursuing his or her first opportunity.

7.8.3 Summary and Key Findings

1. The aggregate view shows ventures are strongly related to each other. They form corridors, such that one business leads to or is a stepping stone to the next. However the 50:50 ratio of innovative and imitative ventures is strong evidence for both intra and inter-industry innovation across successive ventures
2. Corridors have adjoining doors. Over a career a serial entrepreneur may traverse quite distinct corridors in different industries, but they are most likely related by transferrable resources.
3. When a serial entrepreneur through failure “hits rock bottom” and exhausts practically all financial and social capital their entrepreneurial instincts will take them in different directions to find a low cost means of re-entry.

7.9 Part 3. Section 2. The Origins of Opportunities

Research question 2.3 asks: What is the source of opportunities? In the opportunity-centric process of entrepreneurship the opportunity construct is central and the investigation of start-up experience requires the investigation of the source of opportunities. As the corridor principle (Ronstadt, 1986; 1988) predicts, having an existing business leads to opportunities not available to nascent entrepreneurs, and that these may appear serendipitously, and that social capital (McGrath, 1996) is key to explaining the development of real options. This study confirms the corridor principle that existing entrepreneurs have several more avenues to generate new opportunities than nascent entrepreneurs who, as has been reported rely on other means to start-up.

Opportunities from Existing Customers and Employees

Existing Customers

All of the founder entrepreneurs described how solving problems for current or potential customers was an enormous driver for the genesis and development of their ventures. Alertness or sensitivity to customer problems and then finding solutions is a hallmark of the origins of very often innovative solutions in the study. There are many examples. An experienced serial entrepreneur started a new venture in a new but related industry (from digital print advertising to digital marketing) by realising that many of his former large customers were struggling to coordinate a plethora of new advertising channels (Case 7). However, there are no cases in this study of current customers initiating solutions that led to new products that became the genesis of start-ups. A new market segment arose when care homes started used industrial lighting systems to assist their elderly

residents to keep reading as their vision faded (Case, 13). As the experienced entrepreneur related, “We went into domestic markets. What took us there was an enquiry from ABC homes, they ended up buying a lamp for every resident.”

Existing Employees

While it is likely that employees are also a source of unique ideas, only suggestions for starting a foreign subsidiary were detected in this study. One suspects that it is possible that many employees’ ideas are subsumed within those originating from the entrepreneurial team.

Mentors

Approximately half of the serial entrepreneurs had external mentors, in particular those who did not have an entrepreneurial family background. Mentors remained with serial entrepreneurs for several businesses and were actively involved in originating or shaping opportunities. The mentors were all entrepreneurs in their own right. In one venture (Case 7) the experienced mentor provided the mentee with an innovative opportunity that they no longer have enough time left in their careers to see through. However, most mentors did not provide opportunities per se, but saw the new start-up as an opportunity to take a stake in the enterprise in return for advice or specialist services supplied by their firm, such as advertising (Case 10), or to nurture a business with a view to taking a sales agent’s commission after a successful exit (Case 11).

7.9.1 Opportunity from Collaborators

Collaboration occurs as industries co-evolve (Aldrich and Martinez, 2001). There is a clear corridor effect from existing entrepreneurs finding new opportunities from interaction (information exchange) and later collaboration with third parties. Proactive entrepreneurial third parties bring information and new ideas that increase the number of options, opportunities and pathways available to entrepreneurs with current businesses or a reputation for successful entrepreneurship. Information is exchanged to develop projects of mutual interest. Active businesses are often well known in their industry, their community of customers, suppliers, distributors, competitors and government agencies. Firms encourage interaction and trade through advertising, attending trade shows, press coverage and the like that communicate their interests and capabilities. These activities build tangible social capital through actual contacts and intangible links through knowledge being spread throughout the marketplace. Other entrepreneurial owner/managers or employees with responsibility for business development actively search to form new opportunities. They do this knowing that they hold options or part solutions that are just part of the picture of potential

new opportunities. Perhaps an extreme version of social ties generating new opportunities is that of Case 18. Here it was the intervention of a third party property services company that probably saved an experienced entrepreneur by suggesting that they transfer their business model from recruitment to the property services industry.

Complete Opportunities from Larger Firms

Larger firms offer serial entrepreneurs distribution and franchise opportunities in the conventional way (Cases 16, 17, 24). In addition, other types of collaborative arrangements are offered to existing entrepreneurs when the larger business was unable to pursue an opportunity for legal or organisational reasons (Cases 1, 16). These 'outsourced' opportunities were outside the larger firm's normal capabilities, often experimental and carried both financial and reputational risk. Other opportunities arose from legal disputes with other large firms. From Case 16, "Z (large software company) approached us. They were just about to sign a deal with an Indian company who they found was 'cooking the books'. They found us through a friend of mine who was very well connected with the senior Z company people. We flew to (the HQ) to meet the senior vice president of the business unit and signed on the dotted line all within 10 weeks."

Collaborative arrangements can occur serendipitously. A large company acquired an office physically adjacent to the entrepreneur's site. "I got involved with ABC Company who was one of the funders of the business. In fact it's that building right there (pointing to the office building next door)" (Case 1). The resulting start-ups were complementary related diversifications making related products and/or serving adjacent customer segments. These complementary arrangements were very profitable because the small business captures the large firm as its distribution channel. Of course, this type of opportunity is most likely to lead to portfolio entrepreneurship as it relies on the existing capabilities of the established entrepreneurial firm.

Partially Complete Opportunities from Small Entrepreneurial Firms or Individuals

Business to business (B2B) contacts are initiated to develop new opportunities to increase the number of real options available to each party. Entrepreneurial firms approached other established similarly sized small firms as potential customers or suppliers. In one venture from Case 1, a high tech company with customers in the haulage, heavy transport industry approached an experienced entrepreneur creating value by using new solutions to lower the cost of domestic vehicle insurance. An entrepreneur struggling to manufacture a new product shared the problem with an experienced serial software entrepreneur with shared social interests (Case 15). The conversation resulted in a successful new start-up that extended the functionality of the physical product using a mobile app.

As previously exemplified (Cases 9, 26) in the section on modes of founding of experienced serial entrepreneurs, some spins-offs and diversification opportunities are generated by 'walk-in' 'would be' entrepreneurs (Cases 9, 17, 20, 26). As in all diversifications the entrepreneur must be experienced and able enough to make the meta-cognitive connection between experience and the new opportunity with all elements of prior knowledge (markets, means to serve and solution) if the new venture is to be a success.

Incomplete Opportunities from Consultancies and Industry Bodies

Incomplete opportunities come from advisory and consultative bodies seeking potential solutions on behalf of their clients. Industries and professions provide both formal and informal forums to discuss problems and potential solutions. For example, the genesis of one of the ventures of Case 1 arose from a problem retaining trainee accountants. The experienced serial entrepreneur heard of the problem through membership of his professional body. The collaboration resulted in an innovative service that defied conventional wisdom. A successful serial entrepreneur who had specialised his venture to serve a particular industry was commissioned to consult to that industry on a long standing problem (Case 11). The serial entrepreneur related, "From the research I knew this problem would not solve itself, it would get worse. No one was looking at it seriously, but I knew a way to stop an industry wide problem. It was a combination of looking for a problem that needed solving and having the domain knowledge about the suppliers, so I knew from the supplier side what was happening." This access to specialist and specific information about the problem and solution, combined with the expertise and liquidity after a successful exit to create a new and innovative venture, placed the entrepreneur in a unique and advantageous position.

The case studies suggest that collaboratively developed opportunities between roughly equal parties coming from different perspectives can generate highly innovative if still strongly related opportunities. On the negative side it has already been shown from the case analysis that government supported bodies do approach established entrepreneurs with unrelated 'blue sky' opportunities that are inherently risky and too distant from the entrepreneur's prior knowledge. Even experienced entrepreneurs are well advised only to start new ventures with a high degree of fit with the essential elements of prior experience needed for both recognition and execution. Perhaps novices entrepreneur are more innovative because their cognitive recognition ability outweighs their implication ability and a few 'get lucky'. Looking at the 'body count' of unsuccessful first ventures, it is novice entrepreneurs rather than serial entrepreneurs who take more risks.

7.9.2 Summary and Key Findings

1. The corridor principal that existing entrepreneurs have many more avenues to generate potential opportunities than nascent entrepreneurs is confirmed.
2. Being brought or developing opportunities in collaboration with third parties generates new opportunities for both serial and portfolio entrepreneurs.
3. The pooling of common goals, complementary resources and knowledge with collaborators of all types is a source of innovation.
4. However, there are pitfalls, such as cognitive and social traps to avoid when outside parties such as government agencies and foreign nationals introduce unrelated diversifications.

7.10 Part 3. Section 3. Finding Opportunities: Search, Alertness, Social Capital

Research question 2.4 asks: Do opportunities arise from intentional search or from serendipitous alertness? Research question 3.3 asks: Are higher-order cognitive abilities in evidence? In the opportunity centric theory of entrepreneurship, there is a very substantial body of theory and some evidence of opportunity discovery that relies on either economic search (Fiet, 1996) or alertness (Kirzner, 1973).

These are alternative means of information acquisition and processing and provide insights into the cognitive processes of entrepreneurs. Following Berglund (2007) it was decided to directly ask the entrepreneurs about the informational origins of their opportunities.

7.10.1 Entrepreneur's Experience of Information Discovery

The entrepreneurs were more likely to mention discovery without systematic search (alertness) (50%) (Cases 1, 2, 4, 8, 10, 11, 12, 13, 15, 18, 19, 24, 26) than searching (31%) (Cases 3, 7, 9, 14, 16, 17, 21, 23) to discover opportunities. However, 15% (Cases 5, 6, 20, 25) said that it was a combination of both alertness and search. In a re-examination of the cases in terms of the actions taken to discover opportunities there is some evidence that half of all cases used both.

When asked if opportunities for new ventures arose from search or alertness responses included: "Serendipity, I notice stuff, I am aware, I see an opportunity" (Case 1). "It was serendipity, not conscious effort. It is just about having ears and eyes open to what is happening" Case 2). "It can be one sentence said down the pub, that's how I found the idea to make X" (Case 10).

Alternatively, others commented on the value of search. "I am doing research every day of the week; it is the opposite of serendipity" (Case 14). "It is searching to find missing things. Serendipity, no that was definitely not the case" (Case 7). "I research software in great detail. It is a constant, when you build a service."

References to search occurred in three types of structured activity:

- 1) Looking for imitative opportunities to replicate or adapt by novice entrepreneurs after the decision to become an entrepreneur has been made (Cases 3, 8, 12, 14, 18, 23);
- 2) Researching areas of potential innovation where means and ends are only vaguely known; (Cases 6, 11, 14, 16, 19, 21, 25) and
- 3) Using search to develop an existing opportunity to keep in step with changes in competition, customer needs, technology and the like (Cases 1, 7, 10, 13, 17, 24).

In addition, the analysis of the modes of venture creation revealed that search is used by entrepreneurs when using a template or heuristic to find and filter potential opportunities (Cases 12, 23, 26).

Formal Search Mechanisms

As a test for the use of economic systematic search, each entrepreneur was asked if they had paid for research, had commissioned research, or had asked employees to search for opportunities. With one exception (Case 26) that had set up internal procedures for assessing new opportunities, all answered in the negative. It was much easier to do it themselves. "Only you really know what you are looking for" (Case 23). "The nuances and sensitivities of what is in your mind are very difficult to explain to a paid researcher" (Case 20). One entrepreneur (Case 14) spent a year using the internet and talking to local universities researching an opportunity that he had noticed. Like other entrepreneurs in the study, the idea came to him from the vantage point of being the customer, from noticing what is missing. He had "retired" after selling a venture and wanted to buy a product for his new house. He had a 'hunch' that a product was there, not missing. Only when he searched for it did he discover it was unavailable. After further research, he realised that he had exactly the appropriate prior knowledge from the previous venture to develop a solution.

Some entrepreneurs confirmed existing research (e.g. Bhava, 1984; Koller, 1998) in that they searched for suitable opportunities only after they had decided to become entrepreneurs. As already described, some took waged employment as a form of search to acquire information to start their own copy of the business. They were not exactly sure what kind of opportunity they were

seeking, but they wanted to have their own business. The exact opportunity was a secondary consideration. As one related (Case 3), “Owning a firm, doing your own thing is the opportunity”. One entrepreneur (case 23) set out to be an imitator, “The second McDonalds” and confined his search for an opportunity to the fast food sector, researching future competitors, taking notes on prices, products, customer footfall and other planning information.

Many talked about serendipitous discovery or presentation of information not sought, but they also emphasised all the hard research work that put them in the position to be gifted this insight. Interestingly, two unconnected technology serial entrepreneurs (Cases 6, 20) responded by saying that they used a synthesis of both alertness and search methods of information gathering. Both referred to the importance of peripheral vision. One explained how a synthesis of both approaches worked in practice. “Search is looking where you choose to focus, alertness is to information you have in your peripheral vision.” It is possible that they may have been subconsciously thinking about the quote by futuristic writer J.G Ballard who wrote “the periphery is where the future reveals itself.” Nevertheless, it provides an insight into the cognitive information acquisition and processing mechanism used by some entrepreneurs. It is consistent with a process of innovation occurring within an information corridor. This insight is also consistent with Thomas Edison’s adage of combining perspiration and inspiration to discover innovation.

7.10.2 Social Capital, Networks, and Locality

Research question 2.5 asks: What is the role of social capital in this process?

Social Capital: Close Networks

Many serial entrepreneurs remarked that they consciously avoided developing a network of general contacts. They wanted to keep their activities secret and saw no value in joining entrepreneurs’ clubs or organisations such as the UK’s Federation of Small Business (FSB). Confirming existing research (e.g. de Koning, 2003; Gemmell, Boland and Kolb, 2012) on ‘inner circles’, they nearly all used the term “close network” to describe a small decision making group consisting of venture partners and family members. Typically, lead entrepreneurs would describe how they themselves maintain tight control of the finances and legal aspects of the business. Consequently, very few had professionals, such as lawyers or accountants as part of their close network. Those professionals who were in the close networks contributed very specialist skills. For example, in Case 9 the team was augmented by lawyers experienced in international tax law. As previously mentioned, mentors played a role in roughly half the cases, the other group could usually rely on entrepreneurial family members.

The less experienced entrepreneurs could be prone to taking inappropriate advice from consultants. This occurred in (Case 3) where the entrepreneur commented, “By that stage, years three, four, five we were taking advice from consultants and all sorts of different people. “Their advice was, you’ve got to grow as fast as possible to get some critical mass whereby it then becomes a self-fulfilling growth curve. It proved to be very dangerous.”

Serial entrepreneurs could be very negative about the value of outside professional help from accountants. A representative reply to questions in this area was, “They might tell you the options but you had to get the facts and make the decision” (Case 10). Another without prompting described his external accountants as “pretty bloody pathetic” (Case 1) and another said they had contemplated suing their external accountant (Case 24). On the other hand several made complimentary remarks about the support they had received from their banks (Cases 10, 15, 24, 26) which as already noted could be instrumental in recovering from a failure (Case 26).

Purposeful Networks

The analysis found examples of a second type of network, called here a ‘purposeful network’. Purposeful networks are instruments to carry out structured economic search for information not readily available, and were mentioned by those serial entrepreneurs who said that they used search to discover and develop opportunities. A purposeful network can be a sales network built from contacts gathered at trade shows (Case 20). One entrepreneur described spending most of his time travelling to meet organisations that were essential to getting his venture accepted by the industry. He repeated this strategy in both his ventures (Case 14). A purposeful network also provides opportunities for serendipitous discovery. One entrepreneur (Case 6) said that “Networking puts me in a place where I am much more likely to discover information that is useful even though I may not be looking specifically.”

Geography

The study evidence shows that the discovery of new information is often constrained by geographic location. Geography determines proximity to customers which in some sectors is a limiting factor. However, embedding in a particular locality is a significant dimension to information networks and gives access to opportunities not easily available to others. In one case, a serial entrepreneur remarked on how one venture brought him to Clerkenwell in London, also known as ‘silicon roundabout’ (Case 6). This move allowed a later software venture to reach a global market due to its proximity to high speed low cost server capacity in the neighbourhood. As previously mentioned from Case 1, a series of related ventures began when a neighbouring business was acquired by a

large international company. The ensuing reorganisation generated a number of new opportunities for the experienced serial entrepreneur located next door. Being in close proximity fosters social ties and flows of specific private information. Another serial entrepreneur (Case 11) made a breakthrough in his business fortunes by contacting a neighbour, Trevor Bayliss, the inventor of clockwork radio. "Trevor introduced us to his manufacturer and they introduced us to QVC, a TV shopping channel."

Nevertheless, serial entrepreneurs can develop sophisticated information capture and analysis systems through networking and collaboration. A frame-breaking innovative new venture needed to create new information about likely future prices and price elasticity. This was achieved by supplying customer demand data from pilot installations to researchers in a leading UK university, in exchange for the results of quantitative modelling and access to other research and expert opinion. In return the university uses the data to produce academic papers and bid for research funding (Case 14).

Formal systematic search is employed during the detailing phase of opportunity recognition as opportunities move from ideas to concrete systems to exploit the idea. Search is used to find instances of existing components, such as an insurance underwriter willing to underwrite a new type of insurance policy (Case 1). In this case the insurance policy component was introduced by a collaborator. As has been discussed and illustrated above, parties with partial solutions with missing or unsatisfactory opportunity components approach another party and share their information. The other party may not know exactly what they are looking for but recognise it when they find it. Both parties may not be actively searching but a serendipitous information exchange between two cognitively alert persons can bring the pieces of the puzzle together.

Information Capture by Serial Entrepreneurs

The serial entrepreneurs in the study select and build information channels (Fiet, 1996) to obtain relevant information signals pertinent to their research objective. Along the way they notice or are alert (Kirzner, 1973) to other things in their peripheral vision. This confirms the view taken in the development of the theoretical framework, that cognitively both search and alertness are constrained by knowledge corridors.

Experience and search expands prior knowledge also increasing peripheral alertness. Established, experienced entrepreneurs are also given specific valuable information related to a new opportunity (Casson, 1982) called here an 'opportunity lead' within or outside of their immediate area of interest. To be given leads entrepreneurs are actively searching, or third parties know or guess the

business interests of established entrepreneurs and pass leads and/or collaborate to form new opportunities, pooling and expanding their real options (McGrath, 1997) using an effectual , experimental, evolutionary process. Most often the problem is recognised before the solution is conceived. The solution is then searched for. The process appears not to be instantaneous but closer to a start-stop process that continues after start-up and is intrinsic to the development of the new firm. This mixed response to the search vs. alertness question reflects, perhaps, the overall information cost of an opportunity, low cost if serendipitous, expensive if by search.

Serial entrepreneurs have the option to ignore signals from outside their area of interest, investigate further, or process the information and thereby revalue their information portfolio. Information portfolios are similar to any other asset class in having a value that varies according to content and context. Constant assessment, synthesis and economic revaluation of information generates the alert entrepreneur's 'hunch' (Kirzner, 1973), triggering further information gathering and processing.

7.10.3 Summary and Key Findings

1. Both search and alertness are bounded by knowledge corridors.
2. Some serial entrepreneurs describe a complementary and simultaneous cognitive process that combines both.
3. Search is used by entrepreneurs to replicate incumbent businesses after they had decided to become entrepreneurs, to filter potential opportunities using a template, to research innovations, and to develop an existing opportunity.
4. No entrepreneur delegated or paid for search. This reveals that search is idiosyncratic and subjective and more akin to its alertness counterpart than is usually considered.
5. Consistent with existing research, many serial entrepreneurs avoided making general contacts and used a 'close network' consisting of other venture partners, family members or mentors to support decision making.
6. Many were very negative about the value of professionals.
7. Some used purposeful networks to carry out structured economic search for information not readily available.
8. Overall, binary mutually exclusive definitions of search and alertness are not always useful; the actual process is often more complex.

7.11 Part 4. Section 1. Innovative vs. Imitative Opportunities

This section contributes findings and analysis relevant to Theme 3. Serial entrepreneurs create a significant proportion of firms but their role in creating innovative new firms is under researched. Do they copy existing forms or create new means-ends combinations?

Degree of innovation is considered to be a marker of entrepreneurial ability. Innovative firms are assumed to implement high quality, high value opportunities (e.g. Ucbasaran, Westhead and Wright, 2009). High ability entrepreneurs will be selected and matched to innovative opportunities and ventures. Individuals with less entrepreneurial ability discover and exploit imitative venture ideas (Samuelsson and Davidsson, 2009).

Evolutionists inspired by Schumpeter emphasise the importance of novice entrepreneurs to create frame-breaking opportunities (Aldrich and Reuf, 2006) because habitual entrepreneurs are too bound by their industry experience (Alvarez, Barney and Young, 2010; Delmar and Shane, 2006). An alternative evolutionary view is that serial entrepreneurs repeat a creative and innovative process used in one industry at the start of another (Alvarez, Barney and Young, 2010). However, being bound by industry experience is not necessary a bad thing in respect of finding new innovations (e.g. Grégoire, Barr and Shepherd, 2010).

So far in this thesis, evidence has been presented that supports both evolutionary views: intra and inter-industry evolution. There are good economic and cognitive reasons for all types of multiple founder entrepreneurs to reuse existing knowledge and resources within an industry corridor. Existing theory and evidence shows that non-exiting portfolio entrepreneurs are most likely to start closely related ventures. The study data shows that approximately half of serial entrepreneurs maintain their entire careers within the same industry. Furthermore, there is a high degree of similarity to previous ventures (see Table 7.9). However, despite this 50% of ventures are innovative. Therefore, as concluded above, this table suggests that there is both inter and intra-industry innovation.

The case studies show that experienced entrepreneurs find or are given new opportunities that may be related or unrelated to the current firm. Only those that are related in a clear and fundamental way to previous ventures are likely to survive. Unsuccessful entrepreneurs often try again with the same or an adapted approach. In contrast, successful exits empower serial entrepreneurs to use their liquidity to overcome legal and competitive restrictions that prevent replicative/imitative venture creation so they start-up again often in a distinctly different industry or sector.

We already have evidence that serial entrepreneurs and portfolio entrepreneurs play a significant role in the creation of innovative new enterprises. Additional evidence and analysis of the topic of innovation is presented here.

7.11.1 Start-Ups and Industry Stage

Research question 3.1 asks: Are serial entrepreneurs innovative or imitative? We know from previous analysis that the broad aggregate pattern is 50:50 innovative vs. imitative start-ups. Serial founders are just as likely to found new businesses at the start of new industries; in pre-emergent and emergent industries as to start-up in established growth or mature industries.

17% of start-ups were in pre-emergent and 33% in emergent sectors. Examples were found in executive recruitment (early 1970s) (Case 2), keep-fit (early 1970s) (Case 25), secure document storage (Cases 1, 22), digital printing (Case 9), on-line retailing (Case 3), mobile telephony (Cases 2, 14), e-commerce (Cases 17, 21), on-line mental health services (Case 17), and other technology centric ventures (Cases 1, 6, 11, 16, 18, 19). For the other half, 24% of start-ups were in growth sectors where demand exceeded supply including fast food (Case 23), computer equipment (Case 1), recruitment (Cases 2, 26), and IT systems integration (Case 8). A further 26% of start-ups were in mature sectors such as building supplies (Case 10) and print-based advertising (Case 9).

Venture Sequence	Pre-Emergent	Emergent	Growth	Mature
1 st	19%	27%	19%	35%
2 nd	19%	27%	35%	19%
3 rd	14%	29%	19%	38%
4 th	18%	35%	29%	18%
5 th	17%	42%	25%	17%
6 th		67%	11%	22%
Total (100%)	17%	33%	24%	26%

Table 7.11 Venture by Industry Stage

Examining individual careers there are no new obvious correlations or patterns. A Serial entrepreneur could enter a young industry and continue making innovations e.g. (Cases 6, 13, 15, 16, 19, 21), enter a mature industry and then in a subsequent start-up introduce an innovation that would completely change it (Case 9), or start a venture that revisits past successes at the mature

phase of the industry (Cases 16, 22, 26). The reasons and drivers behind these choices are idiosyncratic, but as has been shown they rest on decisions concerning the opportunities that arise in the course of a career, in particular the cognitively mindful (or mindless) reuse of prior knowledge, and the exit conditions of the previous venture.

7.11.2 Degree and Type of Innovation

In the aggregate, it has been shown that nearly half (47%) of all start-ups created new products or services. In the pursuit of other patterns of innovation the type of innovation is presented in Table 7.12.

Venture Sequence	New to World (a)	New to Market (b)	New to Market Segment (c)	Innovative (a) + (b) + (c)	Additional Supply - Imitative
1 st	27%	19%		46%	54%
2 nd	23%	19%	4%	46%	54%
3 rd	19%	14%		33%	67%
4 th	35%	12%	6%	53%	47%
5 th	35%	8%		42%	58%
6 th	44%	11%		56%	44%
Total (100%)	27%	16%	4%	47%	53%

Table 7.12 Venture Start-up Innovation vs. Imitation

Following on from the analysis of venture by industry stage, it is entirely consistent to find that the serial entrepreneurs focus their activities on new markets rather than diversifying into new market segments serving similar customers or producing related products.

With emphasis on pre-emergent and emergent markets it is again consistent to find that 27% of ventures exploited products or services assessed here as genuinely innovative and hence 'new to the world'.

Though so far a third of the new to world classification of venture had closed down or failed outright, e.g. an internet domain business (Case 11), home working via the internet (Case 13), interactive photo tours (Case 15), work based learning (Case 13), licenced premises management (Case 20), this type of venture is the most valuable as measured by the proceeds from the sale on exit. Many are still current enterprises with good prospects for continued growth. This group

includes: LED lighting, software to handle mobile telephone calls, mobile apps for a variety of existing tasks, on-line advertising monetisation, integration of mobile phone data platforms and the automation of digital marketing. This finding supports the assumption (e.g. Ucbasaran, Westhead and Wright, 2009) that innovative opportunities are of higher quality and have greater wealth creating potential.

New to market included introducing products and services to the UK for the first time from the US and other countries, such as CAD/CAM solutions (Case 16) multi-media and digital printing (Case 7), and secure storage (Case 1). Failure and closed frequency is still significant (38%), but again substantial personal wealth was earned by exiting serial founders selling to trade buyers and venture equity firms.

Start-ups that created new market segments could arise from entrepreneurs now diversifying to build a portfolio of related enterprises (Cases 9, 16, 24), or by serial entrepreneurs founding a new business by copying an existing venture (external replication), but adapting it for an alternative segment so as not to compete head-on with the incumbent (Cases 9, 19, 23). Most of these ventures remain current, still owned and managed by the founder.

The imitative class of venture, of course, corresponds to start-ups that add to the existing supply of already available products and services. Though classified as imitative, many involved substantial entrepreneurial risk taking as they were start-ups in emergent markets with few participants, such as in multi-media applications (Case 5), biomass renewable energy systems (Case 24), ecommerce (Case 21) and mobile app development (Case 2). Ventures in this category involved substantial innovation in areas such as in the supply chain for children's toys and garden equipment, often using techniques and resources learned and acquired in previous ventures (Cases 10, 16, 26). Risk as measured by unsuccessful exits is higher than might be expected at 40%, but the frequency of making a successful and remunerative exit is still (21%) with the remainder still current ventures.

Innovation and Venture Sequence

The study has already reported that there is some evidence that novice entrepreneurs who did not incubate their first opportunities in employment are more likely to introduce innovative opportunities. This could be construed as confirming the view of some evolutionists (e.g. Aldrich and Ruef, 2006) that novice entrepreneurs are more likely to introduce innovative opportunities. However, on the contrary, overall innovative ventures are founded in a constant proportion. Moreover, there appears to be (see Table 7.12) an experience effect in the evident increasing frequency of genuinely innovative new to the world start-ups.

A way to reconcile these findings is straightforwardly to note that most serial entrepreneurs innovate, and some are highly innovative throughout their careers, including those very innovative novices (Cases 1, 17, 20, 21). These novices would be considered by 'success breeds success' thinkers as innately innovative. From an entrepreneurial learning perspective, spill-over effects from experience are also in their favour, helping them to maintain their frequency of innovation. Other serial entrepreneurs clearly learn to be innovative or discover this quality in later ventures (Cases 3, 6, 7, 16, 25, 26). A conclusion is that researchers should include some measure of innovativeness as a type of entrepreneurial human capital and as a measure of venture quality. Innovation is also a potential measure of risk as the data indicates that innovation is not strongly associated with successful exits.

Second, third, fourth, fifth and later start-up venture innovations are much more related to prior knowledge and specific entrepreneurial experience developed in previous ventures. As reported, innovative opportunities arise from three sources: a) those related to new information endogenously generated by an existing business, b) the application of new technology exogenous to the current business and c) opportunities introduced by potential collaborators.

Innovation in Opportunity Components

The nature of innovation is further analysed from a number of perspectives using a synthesis of existing opportunity frameworks (e.g. George and Bock, 2011; Shane, 2000; Venkataraman and Sarasvathy, 2001) in Table 7.13 below. It has already been reported that serial entrepreneurs create innovative new products and also business models/means to serve that they transfer to other industries.

Venture Sequence	Means (a)	Business Model & Means or End (b)	Means & Ends (c)	Business Model & Means & Ends (d)	Innovative (a) + (b) + (c) + (d)	Additional Supply - Imitative
1 st	19%	8%	8%	12%	46%	54%
2 nd	15%	8%	8%	15%	46%	54%
3 rd	14%	15%	5%		33%	67%
4 th	29%	12%		12%	53%	47%
5 th	8%	16%	8%	8%	42%	58%
6 th		44%		11%	56%	44%
Total (100%)	16%	15%	5%	10%	47%	53%

Table 7.13 Opportunity Creativity: Means, Ends, Business Model

16% of innovative start-ups contained the creation of new means, in the form of new solutions but used conventional business models to address existing customer needs. These include mobile phone data transfer, digital printing, route optimisation for satellite navigation, on-line photo montage services, and ecommerce for professional services.

15% of opportunities involved a new business model to deliver either new means or ends. For example, a serial entrepreneur wrote a completely new software solution for the global market of bee keepers, and delivered it using a subscription business model based on the number of hives (Case 15). Similarly, electronic document storage (Case 22) required a new business model not based on the use of conventional warehouse space, deposit, retrieval and collection.

The small number (5%) of means-ends innovations corresponds to new software solutions that meet new needs but delivered through a conventional software licencing business model (Cases 11, 14, 15, 16).

10% of opportunities exploited by serial entrepreneurs are classified as highly creative, involving both new solutions (means) and new applications (ends) as well as new forms of business organisation (business model). As might be anticipated these are all new to the world products and services of which several examples have been given. In the world of services an experienced entrepreneur devised a means to allow employees who were not entitled to a company car to receive employee benefits that by creative use of the tax system would achieve the equivalent. Thereby he created the means, ends and means to serve/business model (Case 1).

As would likely be seen in any study of innovation, the determining factors that frame the entrepreneurs' creativity are: the nature of the industry, the technology and customer needs. These determine, to quote an entrepreneur "What was missing" and therefore had to be created to provide all three elements of viable opportunity. As Plato said "Necessity is the mother of invention".

In this sample study, there also appears to be no association between innovation and the binary measure of venture outcome: successful or unsuccessful exit. However, those innovative opportunities that did result in business sales were larger and generated more wealth for the serial entrepreneur. Nevertheless, as already discussed, the outcome of a previous venture has a significant impact on innovation. These are: a) to try again after failure with an adapted means, ends or business model, or b) to replicate and transfer successful elements in another context. This latter group contains innovative and creative entrepreneurs who found several equally innovative enterprises. As previously noted they reuse specialist knowledge such as in the application of new technologies from venture to venture often in different industries. This group would be recognised by other researchers (e.g. Eesley and Roberts, 2012) as part of an elite group where 'success breeds success'. The former group is where 'failure breeds success', through a process of entrepreneurial learning.

7.11.3 Summary and Key Findings

1. Serial entrepreneurs do play a prominent role in innovation. They provide both intra and inter-industry innovation, a finding that supports both evolutionary views of serial entrepreneurs posited by Alvarez, Barney and Young, (2010).
2. Most serial entrepreneurs innovate at some point in their careers and some are highly innovative throughout their careers, some from their first novice venture.
3. They operate at the beginning of pre-emergent and emergent industries but also bring innovations to established sectors.
4. The increasing frequency of genuinely innovative new to the world start-ups in the overall sample suggests that innovation can be learned.
5. The evidence supports the assumption (e.g. Ucbasaran, Westhead and Wright, 2009) that innovative opportunities are of higher quality and wealth creating potential.

6. Innovative opportunities are related to corridor effects arising from: a) new information endogenously generated by an existing business, b) the application of new technology and c) opportunities from collaborators.

7. Serial entrepreneurs create new solutions (means), new applications (ends), and also and importantly for inter-industry innovation new forms of business organisation (business model/means to serve).

7.12 Part 4. Section 2. Objective Discovery vs. Subjective Construction

Research question 3.2 asks: Are opportunities discovered or created? 3.3 asks: Are higher-order cognitive abilities in evidence?

The opportunity-centric theory of entrepreneurship wrestles with how information, however acquired, determines the extent to which opportunities already exist and are objectively real and 'out there' waiting to be recognised, or alternatively are subjective 'in there' and only come into existence through creative thoughts put into action. In this study, following Berglund (2007) the entrepreneurs were asked directly about the origins of their opportunities in the expectation that they would think reflectively and meta-cognitively (Flavell, 1979) about their entrepreneurial process.

As already reported, founded ventures are divided roughly 50:50 between innovative and imitative ventures. Half of all start-ups were to exploit opportunities where demand, supply and a business model already existed. Many were described by entrepreneurs as conscious and planned replications of an employer's business or cloned "reboots" of their own ventures. These opportunities are objectively 'out-there' (Mole and Mole, 2010), not requiring as much imagination to construct. Nevertheless, even clones are not exact copies as circumstances are not identical and entrepreneurs introduce changes to implement what they had learned.

7.12.1 Entrepreneur's Experience of Opportunity Discovery or Creation

Discovery

A clear majority (65%) felt that they had discovered their opportunity. Responses include, "It was discovery, most probably; I've not created any new markets. I go where there is an identified opportunity and de-risk it for ourselves and our customers. I am not a creative entrepreneur" (Case 7). "I would say discovery, I've not invented a new piece of software." "I've always wanted to do my own thing and it was a question of finding a business with which to achieve this aim" (Case 11).

Creativity

Only a few entrepreneurs (13%) maintained that they had created the opportunity. They had all developed 'new to the world' opportunities so there was some support for their self-analysis. They had either been the first to notice the problem and had invented a new way to solve it, or they were aware of a completely new technology and applied it to an industry they knew intimately. "I saw how it (a new technology) would eventually wipe out three separate industries" (Case 7). His current venture is also born of this same cognitive 'creation by projection' or reasoning by analogy, that the industry conditions prevailing at the time of an extremely innovative venture are very similar to those prevailing in another industry, and that he is uniquely placed in that 'corridor' to recognise and act upon it. He said, "Generally speaking, it (my career) has been doing things in a different way that nobody else is doing. "

Cognitively talented serial entrepreneurs are expected to be able to think beyond prior knowledge and succeed in new domains (Eesley and Roberts, 2012). From experiential learning by doing, serial founders can develop cross-industry template business models (Baron, 2006) and heuristics (e.g. Tversky and Kahneman, 1974) to search for and screen suitable opportunities and make bi-associations (Ko and Butler, 2003; 2006) to create ideas where none existed before. Some serial entrepreneurs are able to extrapolate trends into the future to create new opportunities using mental simulation (Gaglio, 2004). Others see meta-connections between opportunities in seemingly unrelated industries by reasoning by analogy (Fiske and Taylor, 1991).

Another entrepreneur (Case 14) used a similar technique, "I always make 5 year plans for myself. I did this when in employment and update the plan every year". "I am very lucky in that I can see forward 10 years in terms of where technology is going, and can identify opportunities that are likely to emerge. It is creation. The idea of X just didn't exist." Again this entrepreneur used the same cognitive process to devise his latest venture, commenting, "What we are doing just didn't exist before. There are people who are now doing parts of what we do, but the core of what we do is unique based on a vision." This suggests that some serial entrepreneurs reuse the same mental processes or heuristic for opportunity recognition that yielded successful opportunities in the past. In addition, with a track-record and reputation they are able, as Shane and Khurana (2003) noted, to convince others to reallocate resources in new ways that run counter to existing norms.

Entrepreneurs Self-Assessment of Creativity

Not all serial entrepreneurs are able to recognise their achievement as a creative process of subjective opportunity construction. This seems to be particularly true for software entrepreneurs,

who may create new means but do not make claims to have created new ends or a business model. The process appears to be 'out there' not 'in there' and/or they are perhaps constrained by the social conventions of humility. "If I hadn't created the software package someone else would have eventually" (Case 11). In this case, even if they had introduced both means and ends they did not think that they had created the actual opportunity. It was out there waiting to be discovered. They had just got there first. The problem was out there, as were the means or tools in software development, even if the actual solution was not. Another entrepreneur (Case 21) said, "It was the logical next step. There were only three ways of solving the on-line rewards problem and mine was one of these". Pinning down creativity in software development may be difficult, because software ventures tend to replace existing ends: human, paper or semi-automated processes with software that either a) mimics existing processes or b) facilitates the transfer and integration of data between existing technologies.

Portfolio founders of related ventures may not be sensitive to their own creativity. In a portfolio of related businesses in the music sector (Case 9), the entrepreneur hit upon the idea of retailing music as MP3 files via the internet. While he was adamant that they were really the first in the world to do this, he didn't put any emphasis on creativity. He said, "They were already using the internet and had been distributing music on CD". He described using the MP3 innovation as "Merely filling an obvious gap in our range of music products and services".

Discovery and Creation Combined: Packaging

A significant minority (22%) said that it was a "bit of both", some discovery, some imagination and creativity. "A combination, some I invented myself or with other people" (Case 17). "I suppose it's the gap, the thing which isn't there. That is another way of thinking about an opportunity, something missing" (Case 1). Here the problem and the solution were intertwined and both could be objectively researched and simultaneously subjectively contemplated. When asked to explain the nature of their creativity, some emphasised the assembly of different components that already existed but were packaged in a different way. A serial entrepreneur (Case 6) used the business analogy of the Lotus sports car being assembled from standard (mainly Ford produced) components. "We use pre-existing everything. Steve Jobs didn't invent anything. It is a bit like Lotus. He took Cortina rear axle components from other cars but the sum of the parts was a Lotus 7. But what we do with the bits we do get in, is we create a unique proposition." The same metaphor of rearrangement and repackaging occurred in several interviews such as, "Looking for and assembling the pieces of a jigsaw" (Case 21). It is interesting that these same two entrepreneurs said that they combined search and alertness as focus but sensitive to new information in their peripheral vision.

As the analysis of innovation of the different components of an opportunity shows, creativity and discovery can be combined. One or more elements: means, business model, ends are discovered, others are created. Other components are 'ready-made' from a previous venture.

The software industry creates intellectual property and then licenses it, "Make once, sell many times" (Case 6). This entrepreneur realised (discovered) that software distribution is more effective via the internet and 'the cloud' than by physical CD ROMs. The newly discovered, exogenous 'out there' method of distribution added value by extending the reach of his created software solution to service international clients with global operations. In a venture from Case 1, the new business model was created endogenously. The entrepreneur demonstrated an ability to use small information clues (Simon, 1973) and think counterfactually (Gaglio, 2004). Without changing the means or ends, he added value by realising through an act of counterfactual higher order thinking, that the best way to manage the peaks and troughs of demand and supply for courier services was to reverse the standard industry practice of allocating orders first to full time couriers and then to contract staff. He would have mentally simulated (Gaglio, 2004) the new solution before deploying it.

Very experienced entrepreneurs referred to "Rearranging parts, some borrowed from other businesses and previous experience " (Case 1). The creative element was "seeing what is missing" and making a new combination, the "packaging" (Cases 1, 5) of existing components. The 'packaging' and 'pieces of the jigsaw' metaphors appear to combine pure discovery (of existing components) and creativity (how the components are combined). The use of the verb "seeing" does not mean just discovery. Framed as a cognitive process it can mean both objective discovery and subjective construction.

Another very experienced entrepreneur described an evolutionary process, "We were not the Beatles, we were evolutionary not revolutionary" (Case 5). One serial entrepreneur associated the construct of creativity with invention. "We didn't invent anything. We simply took existing technologies and found a way to implement them for customers" (Case 7). Experienced serial and portfolio entrepreneurs are very likely to have more knowledge formed into 'ready to go' templates/blueprints that generate more options and combinations of options. Further research is required.

Case 1 contains more than one example of packaging. From this entrepreneur's intimate knowledge of the industry, he noticed how the very high price of insurance encouraged rational consumer behaviour that maintained the high price. Familiar with all the other elements of how customer

value was created, he went through several iterations of negotiations with different suppliers, resulting in a lower cost insurance policy as part of an overall package. When asked if this process is better described as creation or discovery he answered, "It was both. It was the packaging that was new. It was the packaging of the pieces rather than the creation of them that was key. We worked out what was missing and then put a package together." Looking back over his career from the venture cited it was apparent packaging was a cognitive skill learned in previous ventures. It is likely 'packaging' involved a number of discrete cognitive processes already cited to develop bi-associations (Ko and Butler, 2003; 2006) between unrelated domains to create ideas where none existed before.

In addition, it is interesting to note that these responses align quite closely the metaphors for the opportunity formation process favoured by theorists, such as 'sewing a patchwork quilt' (Sarasvathy, 2001), 'assembling pieces of meccano', 'finding the last piece of the jigsaw', (Casson, 1982), and 'joining the dots' (Baron, 2006).

Being customer focussed is essential to the combined discovery, creation and packaging process. In many cases including those cited in this section, close relationships with key customers allowed an informed and feedback driven effectual experimentation process where both customer and entrepreneur were near equal stakeholders.

In other innovative ventures it is the packaging, the assembly, and some modification of existing components, means, ends and business model that is at the heart of the new venture. It is concluded that unless a clearly new product or something equally tangible is created for the first time, as in a scientific invention or patent, entrepreneurial creativity may be indistinguishable from discovery. The discovery process may obscure the creativity that occurs in the assembly of components that connect means and ends. A research focus on only means and ends may obscure genuine innovation in the business model. Overall, if experienced founders have accurately described the reality of the opportunity recognition process, then the evidence appears to support the theories of evolutionary realists (e.g. Alvarez and Barney, 2007; 2010). Furthermore, as has been demonstrated, several evolutionary effects add up to significant value creation and can make truly frame-breaking opportunities. Strangely, the terms evolutionary and discontinuous innovation are not at odds.

Corridor Effects: The Advantage of a Current Business

The findings from the examination of opportunity discovery vs. creation also shed light on the concept of venture corridors. It has already been reported how existing businesses search for or are

found by potential collaborators and how this is an important facet to the career trajectory of serial entrepreneurs. It is clear that the process of innovation continues after start-up. Existing opportunities evolve from within the venture, through creative packaging of existing, newly discovered or created components. New options and new opportunities grow ‘naturally’, endogenously from existing operations and exogenously from change in the environment.

Overall, having or having had recently one or more businesses confers several advantages/corridor effects given in Table 7.14 below.

1.	Access to new information endogenously generated by an existing or prior business.
2.	Access to privileged information exogenous to the firm but still private, especially from customers, suppliers and other collaborators. This is likely to include whole or partly formed opportunities.
3.	The discovery and application of new technologies and methods arising exogenously to the current business.
4.	Employees and members of the close network who can assist in capturing and processing new information.
5.	Resources, including willing customers with whom to conduct controlled experiments to explore enhancements and new ideas.

Table 7.14 Advantages in Opportunity Formation from a Current Firm

It can be concluded that compared to individual entrepreneurs, firms have a kind of information production function harnessed to the means to turn information into actionable options and real opportunities. Because portfolio entrepreneurs have several parallel businesses they may be better placed to benefit from this arrangement of resources.

Characteristics and Behaviours of Innovative Serial Founder Entrepreneurs

The thesis posed the question as to the apparent absence of Schumpeter’s innovative entrepreneur. In this study, serial founders do contribute innovative new firms and many then proceed to spread their innovations and opportunity capture and exploitation heuristics to other industries in a connected evolutionary process. The new ventures can introduce discontinuous (frame-breaking) innovation in one or more components of a viable opportunity. Innovative serial entrepreneurs exhibited one or more of the following salient characteristics that are listed in Table 7.15 below.

A.	Deep knowledge of an industry sector developed through several businesses.
B.	Willingness to address new problems and specific customer needs as they arise.
C.	A member of the entrepreneurial team or a key employee with deep technical knowledge who collaborated with the lead entrepreneur on several ventures.
D.	Determination to start a new venture in an emerging or pre-emergent industry.
E.	Replication of a creative solution (developed in a previous business) to other sectors.
F.	Interest in and an ability to accurately predict the consequences of emerging trends.
G.	Recognising complex problems and/or complex technologies and simplifying them for customers.
H.	Having an open, innovative and experimental culture. This culture is characterised as frequent discussion of opportunities by team members and close relationships with customers and/or suppliers.
I.	Willingness to explore 'walk-in' opportunities from third party collaborators.
J.	Ability to syndicate the risks and benefits of the development of new solutions with customers and suppliers.
K.	Staying with a particular technology through several evolutionary steps, including one or more venture failures.
L.	Combining and recombining (packaging) different elements of the means, ends and business model/means to serve to find solutions.
M.	Ability to examine existing needs and solutions and see what is missing. Not accepting conventional wisdom and engaging in counterfactual thinking, seeing the available data for what it was rather than how it should be.

Table 7.15 Characteristics of Innovative Serial Entrepreneurs

Many of these characteristics and behaviours can be emulated and learned by other entrepreneurs seeking innovative opportunities.

7.12.2 Summary and Key Findings

1. A majority described their own opportunity process as discovery.
2. Only a few entrepreneurs thought that they had created the opportunity. These developed 'new to the world' opportunities. They used similar cognitive techniques to project into the future.
3. A significant minority thought it was a "bit of both". Of these two described alertness cognitively as "peripheral vision".
4. Other ways of describing the process included: looking for what is missing, packaging existing components in new ways, looking for and assembling pieces of the jigsaw. These are similar to metaphors favoured by theorists. Combining and packaging existing components in new and creative ways is form of creativity so far undocumented.

5. As with alertness and search, the two binary and opposing constructs of discovery or creation are not necessarily mutually exclusive.
6. Therefore whether this process is optimisation within the existing framework or alternatively frame-breaking is a matter of debate.
7. The corridor effect creates conditions for innovation in several ways including: generating new information from a prior business, gaining private information from customers, suppliers and other collaborators, having employees and the close network capture and process new information, and having willing customers with whom to conduct experiments.
8. Cognitively talented serial entrepreneurs use information to think beyond prior knowledge and succeed in new domains (Eesley and Roberts, 2012). There is evidence of high order thinking (Lord and Mather, 1990) by serial entrepreneurs, including: mindful thinking (Rerup, 2005), the use of small information clues (Simon, 1973), counterfactual thinking (Gaglio, 2004), and others already reported. Binary categorisations of processes and outcomes as either innovative or imitative, discovered or created, are not always useful in understanding the behaviour of experienced entrepreneurs.
9. Overall, the process is evolutionary, with re-combinations of existing components an essential part of a creative process. However, just a few marginal evolutionary innovations can result in a discontinuous/frame-breaking market innovation.
10. Further research into the origins of opportunities using evolutionary realist constructs (Alvarez and Barney, 2007; 2010) has the potential to shed further light on the process.

7.13 Part 5. Section 1. Comparison of Serial and Portfolio Entrepreneurship

This section contributes findings and analysis relevant to Theme 4. The general consensus from literature is that portfolio entrepreneurship is intrinsically more economically efficient. The firms of portfolio entrepreneurs are larger, grow faster and generate significantly more income than the firms of serial and novice entrepreneurs. In contrast serials are resource poor and have less access to role models, mentoring, social networks and financial resources (Westhead, Ucbasaran, Wright and Binks 2005). The view explained in this study is that serial entrepreneurship also has some advantages and requires its own theory from the work of (Sarasvathy, Menon and Kuechle, 2013), (Mason and Harrison, 2006) (Cooper, 1985).

7.13.1 Portfolio Entrepreneurship – Case Analysis

The three cases of portfolio entrepreneurship are consistent with the existing empirical evidence (e.g. Iacobucci and Rosa, 2005). Entrepreneurs start parallel businesses to exploit horizontal synergies. Horizontal diversifications occur because adjacent customer segments in the same corridor are more easily discovered at low cost through alertness or search, because they have similar information characteristics and can share resources that generate complementarities, economies of scale and scope. Therefore, the costs of finding and implementing unrelated opportunities are higher. This economic explanation is supported by empirical evidence that diversifications for portfolio entrepreneurs appear serendipitously and naturally without search or strategic planning (e.g. Alsos and Kaikkonen, 2004; Rosa, 1998), and that a complete change of direction was rare for portfolio entrepreneurs (Rosa, 1998). The entrepreneur must make a judgement of comparative additional costs (including opportunity costs) of assessing and exploiting an unrelated opportunity against its potential for profit. If a misjudgement is made they will pursue an unrelated opportunity and fail, returning to singleton status or worse. For a serial entrepreneur to exceed the efficiency of a portfolio entrepreneur they must sell at the highest premium (a form of profit) and also find a related opportunity with low implementation costs. Successfully exiting entrepreneurs may be disadvantaged due to the terms of sale in exploiting a related opportunity, but they have the cushion of better liquidity and use of their own time.

For portfolios, related diversification widens the corridor, as each venture opens new possibilities and real options for further diversification as the portfolio grows. Portfolio building momentum develops as the marginal cost of recognising, pursuing and exploiting related opportunities declines. The case evidence also supports a view of portfolio building as a dynamic effectual process of experimentation, exploiting options derived from the current cluster of firms. These experiments can be reversed if unsuccessful. Another clear advantage to a portfolio entrepreneur is that an outright failure with economic losses can be isolated and does not result in an exit from entrepreneurship. Portfolio entrepreneurs can 'shelter' the development of new ventures (Case 24). In building a portfolio of a number of horizontally related firms in renewable energy, she commented "What we've got now is getting B off the ground within the safe confines of A." This is part of an incubation and spin-out process that is only open to owners of existing enterprises.

In the study, a portfolio founder focussed on serving the vibrant and creative UK music industry (Case 9). Horizontal diversification included live music concerts and selling recorded music. Vertical diversification included band management, band marketing, music recording, production and distribution. The entrepreneur described the diversification process as, "Filling in obvious gaps in the product portfolio on a trial and error basis". Information about potential opportunities could be

found easily in one of their businesses - a music newspaper. Some start-ups failed, were closed or put on a “back burner” waiting for better business conditions. Highly innovative, the entrepreneur was the first to sell MP3 music downloads, again as a related diversification. Another frame-breaking opportunity occurred when a completely new, related but unmet need arose. This high growth addition to the portfolio soon became the principal focus. The portfolio is now effectively a single venture with a few satellite and comparatively small legacy businesses. This raises the question, to what extent is a portfolio a cluster of equals or just one or perhaps two main ventures.

In another case, the portfolio entrepreneur diversified along two dimensions of related markets and related products (Case 13). The first start-up provided a business to business product in the industrial machine tool market. The second venture a different product to the same industrial market. The third venture provided a version of the first industrial product to the consumer market under a new brand name. At the time of the research this portfolio founder plans to reorganise around two firms, one for the domestic and one for the industrial market. Through this process, portfolios of start-ups have a concertina-like quality of expansion, reorganisation and contraction over time as would a small conglomerate.

In many ways portfolio founders are the same as serial founders. The serial entrepreneurs and the small sample of three portfolio founders in this study have much in common. They came to entrepreneurship through similar routes, prefer to start small ventures using their own resources, eschewing external finance beyond conventional bank loans. Like serials, portfolio founders all show evidence of a learning curve, and of innovation including the development of new to the world products and services. The trend in each portfolio career (like their serial counterpart) is that each retained venture shows increasing sophistication of the products and operations, and also increasing size and profitability, even if earlier ventures are sometimes closed. This demonstrates portfolio entrepreneurs also learn from experience.

7.13.2 Transition to Portfolio Entrepreneurship – The Absence of Exit

Research question 4.1 asks: Why do entrepreneurs transition to become portfolio entrepreneurs? In the discussion of the constructs of habitual entrepreneurship, serial and portfolio entrepreneurship are clearly separated by exit from entrepreneurship. Therefore, economic selection doesn't operate in the same way. Novice and serial entrepreneurs are both 'singletons' with one current venture. Portfolio building begins when there is a new opportunity but an exit doesn't occur. Exits can be positive or negative. A lack of exit indicates a business of medium quality, not failing but not of sufficient quality to attract a buyer. They are 'stuck in the middle' with

ventures too lucrative to abandon but not advantageous enough to attract an acquirer. The reasons that alone or in combination propel singleton novices or serials to transition to portfolio entrepreneurship, might include:

- a) The existing business is not of high quality and doesn't attract a buyer.
- b) Synergies and cost economies reduce the marginal cost of another related business.
- c) The preceding business directly funds and 'shelters' a new venture over the start-up phase.
- d) If a preceding business was sold or closed the synergies would disappear making the next venture unsustainable,
- e) An unrelated venture is launched and fails, increasing dependence on the other businesses which provide a form of insurance for further risk taking.
- f) Portfolio entrepreneurs prefer the utility, including the enjoyment and social status of owning and managing a portfolio of businesses.

Portfolio founding is defined as founding at least three new ventures and not exiting entrepreneurship. Many 'singleton' entrepreneurs must at some point have the option to transition to become a portfolio entrepreneur. Over a third of the serial entrepreneurs had another parallel venture at some point, most often as an unsuccessful diversification. Lower quality ventures are also held as temporary insurance before sale as they transitioned to the new higher quality new venture (Cases 6, 24).

7.13.3 Economics of Serial and Portfolio Economics

Research question 4.2 asks: What are the economics of serial entrepreneurship? A great deal of serial entrepreneurship is born of failure. Here the entrepreneur has no choice but to bear the costs of recovery and re-entry. Positive exits require another type of judgement. Selling a business is an entrepreneurial ability requiring a particular type of acumen. Economically it is a means of extracting future profits, to reinvest in another start-up. As has been noted in the analysis, it is subject to learning effects from experience, so serial entrepreneurs get better at extracting value. Portfolio entrepreneurs learn to extract synergies from related businesses. Serial entrepreneurs may have a superior cognitive ability to detect and calculate capacity limits, diseconomies and negative synergies arising from retaining a low quality firm in the presence of a superior opportunity. Serial entrepreneurs may judge that they do not have a very large cost disadvantage in business

start-up, especially if it is related. They are prepared to give up any potential synergies in return for enhanced liquidity and the high personal wealth and freedom this entails.

Diversification Advantage

Parker (2014) is drawn to the idea that portfolio entrepreneurs can pursue a less risky strategy by adding unrelated businesses as do equity investors intelligently managing a portfolio of shares. Sarasvathy, Menon and Kuechle (2013) make a similar observation. The literature and this study provide no evidence of successful diversification motivated to reduce the co-variance of returns. The evidence supports the conclusion that portfolios entrepreneurs are looking for new growth opportunities.

Serial Diversification

To close the economic gap between portfolio and serial entrepreneurship, serials should have access to synergies between their successive enterprises. As 4.3 asks: Do serial entrepreneurs benefit from some form of pseudo diversification, supported by recycling? Despite the apparent loss of potential portfolio synergies by pursuing a serial career path, Sarasvathy, Menon and Kuechle (2013) postulate that serial entrepreneurs benefit from pseudo-diversification across their discrete sequential ventures. In addition, serials have been shown to practise resource recycling (Mason and Harrison, 2006). These resource combinations are developed through a process of incubation (Cooper, 1985).

Pseudo is assumed to mean 'artificial' or 'ersatz'. As reported, the case studies clearly show that serial starters do make related start-ups and therefore benefit from diversifications that generate real options and therefore are real rather pseudo. Internal replication or cloning is an obvious example. Accordingly, they are renamed here as 'serial diversifications'. There are many examples of serial diversification cited in the analysis. In another example (Case 23) a first fast food retail business ended in failure. However, while operating this struggling business, the entrepreneur discovered a new commercial market segment that was far more profitable. He simply shut down and exited the retail business and switched to supplying the new market. This reorientation is clearly a related serial diversification. Similarly, in another instance of this phenomenon the serial entrepreneur left one business selling mini-computers to start another selling the terminals needed for mini-computers (Case 1). Other serial ventures may not have such obvious connections, such as when there is a switch to a different industry. Nevertheless, the evidence demonstrates unequivocally that they are almost always related by critical components of prior knowledge and other recycled resources if they are to be successful. Serial entrepreneurs obtain returns to

specialisation (i.e. the division of labour) in more subtle ways than portfolio entrepreneurs. Porter (1985) refers to tangible and intangible horizontal synergies often between separate value chains.

Serial entrepreneurs transfer tangible resources, reemploy former key employees, suppliers, social networks, and serve the same customers. He or she obtains more output to a resource whose performance and risks in use are known, the costs of which are largely sunk, paid for in a previous firm. Intangible resources are know-how about the same type of business component. These are equivalent to the cognitive heuristics and templates already cited as important. Serial entrepreneurs benefit from this 'shadow portfolio' of previous ventures and their recyclable resource positions. This study finds a continuum of prosperous ventures from clones to ventures related by common components.

For example, a serial entrepreneur (Case 1) employed the same systems programmer, a salient resource (Lichtenstein and Brush, 2001), in most of his many and varied businesses. Together they developed an employee benefits system for a venture sponsored by a large corporate. Several ventures later, a version of this system was used to launch an entirely new product nationwide. This long standing inimitable resource combination of entrepreneur and key employee, the persistence of their prior knowledge, enhanced and kept fresh by constant reuse, allowed the small company to punch above its weight.

If for Iacobucci (2002), a portfolio entrepreneur is a master of dependencies, a serial entrepreneur is also a master of the assembly and re-assembly of resources across discrete firms.

Exit, Personal Wealth and Serial Entrepreneurship

Finally, the economic effects of exit have to be accounted for. Both serial and portfolio entrepreneurs can fail and suffer economic losses and opportunity costs. However, if personal liquid disposable wealth is taken into account, then the few portfolio entrepreneurs in this study are unlikely to be economically more successful than very many of the individual serial entrepreneurs. From the reported proceeds of business sales, the exiting serial entrepreneurs in this study had much more personal wealth. Taking the data at face value, in order to maximise personal wealth, an entrepreneur would be well advised to start a single new innovative venture in an emerging high growth industry and use successive rounds of private equity to extract personal wealth while using the funding to grow the business to achieve an initial public offering. On exit the entrepreneur should retain a substantial minority stake while starting again to repeat this wealth creating process. However, this path is likely to be more risky than holding on to a medium quality venture and adding related enterprises.

Research question 4.4 asks: Do serial entrepreneurs take on increasingly risky opportunities? A complete change of direction is rare for portfolio entrepreneurs (Rosa, 1998). Parker (2014) argues that serial entrepreneurs take increasing risks. However, portfolio starters in the study were more prolific founders than most serial founders. On the other hand they were also more prone to venture closure and failure from unrelated diversifications (Case 13). They could be taking on more risky ventures to pursue growth, insured and supported by the portfolio. It is likely that the unsuccessful ventures of portfolio founders are under reported. Aggregate studies of portfolio founders that do not record exits, especially failures are likely to report only related diversifications.

Holmes and Schmitz (1990: 1995) attribute portfolio entrepreneurship to a lack of ability. Both types of entrepreneurship are innovative and try to move up the value chain with each start-up, maintaining or increasing their ambition with each new venture. This question will require further research and the development of appropriate constructs of entrepreneurial risk to resolve.

The discussion throws doubt on Parker's (2014) synthesis of theory and evidence that maintains that portfolio entrepreneurship is always more economically efficient than serial entrepreneurship.

Theory of the Firm Resources vs. Theory of Entrepreneurship

Iacobucci and Rosa (2004; 2005) cite the evolutionary theory of the firm as the best fit with the evidence for portfolio building. Here the individual and the firm(s) are tightly bound together acting as a mini-conglomerate. It has been argued in this thesis that the emerging theory of serial entrepreneurship separates the success of the firm and its resources, the individual entrepreneur and his or her resources, and the opportunity. This perspective rebalances the importance of the resource-based theory of the firm versus that of entrepreneurship. If a serial starter's experience, knowledge, social capital and other resources are directly transferrable, and costs are sunk, then they can achieve economies of scale and scope from their own human and social capital.

Some economists (e.g. Arrow, 1962) actually predict decreasing margin returns to experience. Parker (2013) posits that the human capital of the self-employed depreciates relatively quickly and returns to entrepreneurship return to the mean. This study has evidence of recycling and reuse, that options or combinations of resources developed in earlier businesses are long lasting, improve with learning through repeated use, and may lie dormant only to be reused at an appropriate juncture. A failed serial entrepreneur returned after failure to found a second successful venture re-using experience gathered in employment (Case 3) "I spent five years being involved very closely with strategic international trade, so I spent time understanding how moving a container from China to

the UK added value. I could very quickly understand how to gain a margin advantage over our competitors because I had a complete understanding of how international trade worked.”

In another case the entrepreneur had learned from prior employment in the VC industry how to position “technology plays” to investors to achieve high pre and post-investment valuations. After a series of technology start-ups, his latest venture is to create this type of technology play in the emerging ‘big data’ sector (Case 20). The case studies are consistent with Alsos and Kaikkonen’s (2004) finding that apparently unrelated opportunities are in fact derived from information learned prior to their current occupation.

7.13.4 Summary and Key Findings

1. The cases document examples of mainly horizontal diversification as found in the literature (e.g.; Iacobucci, and Rosa, 2005; Rosa, 1998), but also finds new evidence of vertical diversifications.
2. Portfolio founders appear to be similar to serial founders in terms of: innovation, learning, failure and ambition. The chief difference is the absence of exit from the ownership and active management of several firms.
3. As an alternative theory to a lack of risk taking (Parker, 2014), portfolio entrepreneurs instead have a lack of ability (Holmes and Schmitz, 1990: 1995). Portfolio entrepreneurs develop a medium quality business that is not attractive to a buyer.
4. Portfolio founders grow by building an interlocking mutually supporting set of ventures linked by synergies. There was no evidence to show that they sought unrelated diversifications to balance risk as proposed by conventional portfolio theory (e.g. Parker, 2014). Instead, they sought them to achieve growth.
5. Some serial entrepreneurs enjoy substantial personal wealth earned through the sale of their venture. This route to economic success is more fruitful, though likely to be more risky than portfolio building.
6. There is clear evidence that serial entrepreneurs also enjoy the benefits of diversification as proposed by Sarasvathy, Menon and Kuechle (2013). This is achieved by entrepreneurial recycling (Mason and Harrison, 2006) of knowledge and resources accumulated and paid for in previous ventures. They also have liquid financial resources from selling a venture, influence (Shane and Khurana, 2003), and freedom to select superior opportunities unencumbered by an existing firm.

7. If for Iacobucci (2002) a portfolio entrepreneur is a master of dependencies, then a serial entrepreneur is also a master of the assembly and re-assembly of resources across discrete firms.

7.14 Concluding Remarks

7.14.1 Serials vs. Novices – Evidence for an Experience Curve

Lessons for Quantitative Studies of Venture Performance

There is a shortfall in knowledge of how the performance of one venture is related to the next (Parker, 2013). Persistent serial entrepreneurs return from failure, transfer to new industries, discover or create innovative opportunities, maintain ambition and improve their success rate. While there is an accumulation of entrepreneurial human capital, its rate of growth is non-linear, varying according to what is learned that can be reused or built upon. There is then a difference between measurable experience and the more qualitative and subjective transferable learning. This point is at the heart of the assets and liabilities theory of habitual entrepreneurship (Starr and Bygrave, 1991; 1992) and its derivatives (e.g. Reuber and Fischer, 1994; 1999), works that inspired this thesis.

Venture performance is also non-linear, because especially in the early phases of a career failure of some form is likely. There is not a direct positive correlation between experience and outcomes of serial founders because both the individual learning curves and performance curves are punctuated with critical events, especially that of exit. Aggregate performance studies do not take into account exit conditions, nor pauses between ventures where learning also takes place. To illustrate this point, Figure 7.9 illustrates a theoretical accumulation of human capital. It is the area under the curve of the upper most diagram. Following conventional economic theory it shows declining marginal returns to experience. Unconventionally, but still based on empirical evidence from this study and others (e.g. Cope, 2011, McGrath, 1999), it is the analogue of outcomes or performance, i.e. more is learned from difficulties than from success.

This may explain some of the difficulties in finding a consistent positive association between stocks of human capital and venture performance, simply because exit experience is not counted as a measure of human capital nor as a measure of outcome or performance. Recent studies in this area rely on comparisons of experiential human capital such as the number of ventures founded with earnings from income surveys (Chen, 2013; Parker, 2013) and log transformations of earnings from business or firm revenues (Eesley and Roberts, 2012; Toft-Kehler, Wennberg and Kim, 2014). Few researchers look at venture outcome. Exit conditions as found in this study are very likely to be a

powerful explanatory variable to be used with earnings. The other constructs used in this research such as for innovation are also offered for the benefit of future research.

The diagram illustrates the overall successful career of a serial founder who experiences a mix of both unsuccessful and successful enterprises.

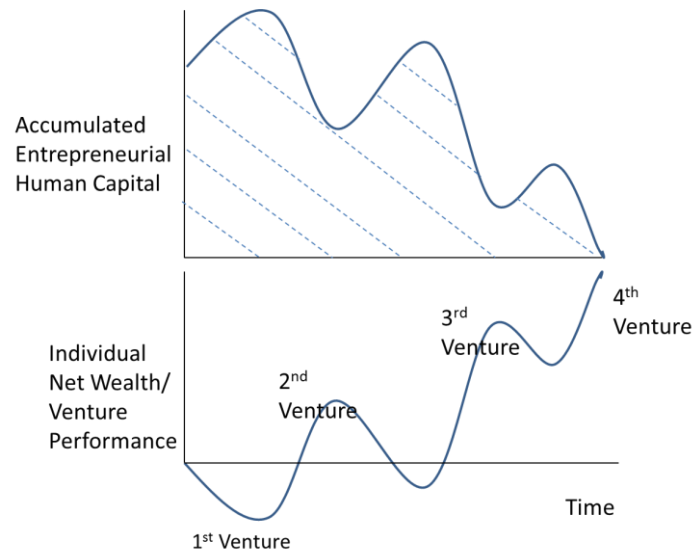


Figure 7.9 Accumulated Experience and Venture Performance

7.14.2 Synthesis: New Model of Entrepreneurship

The final finding is a revised model of entrepreneurship. The model is a summary of what has been learned and can be induced from this study. It builds on the model of habitual entrepreneurship proposed by Ucbasaran, Westhead and Wright (2006) (see Figure 4. 1). The development is compatible with other models of entrepreneurship such as Ardichvili, Cardozo and Ray (2003) that emphasise prior knowledge and social capital.

The new model of entrepreneurship illustrated in Figure 7.10 also following Casson (1982; 2003) gives prominence to the entrepreneur's role in economic decision making in the allocation of scarce resources. In the section labelled dynamic cognitive entrepreneurial capabilities following thinkers such as Shane and Venkataraman (2000) and Teece, Pisano and Shuen (1997), the role is defined to include specific information gathering and processing tasks. These include the valuation and revaluation of all resources in response to information signals, the appropriation of new resources and the development of the skills/abilities required to address changes in the environment. Entrepreneurial learning is a cognitive ability that includes information acquisition by both search and alertness.

The new model includes the recursive nature of serial entrepreneurship. Information signals generated by significant events, such as the recognition of a new opportunity and venture performance, trigger the resource co-ordination and decision process. This leads to changes in resource positions, even if it is just a change in current knowledge. New opportunities can arise from within a current venture. All ventures can be considered experiments to discover new information and thereby generate and select new options.

An important innovation is that the model includes venture exit explicitly. Exit is a measure of venture performance. Moreover, the potential for exit is also included as a new type of opportunity to realise future profits or cut losses and start another venture. Exit is classified as an entrepreneurial opportunity, if a special type. Opportunity liquidation is included in the model as a key ability and as part of the opportunity-centric process.

In the model, resource positions or combinations of abilities, knowledge, and tangible resources have multi-dimensional, dynamic and recursive features. For example, knowledge of markets will exist in various forms, controlled by different people at different times. Opportunity recognition may be solidified into an organisational heuristic. Changes in resource positions impact opportunity recognition, exploitation and liquidation abilities.

It is the entrepreneur who manages the combination of personal, team and firm resources. This study has shown that even in teams that share ownership and control, there is a lead individual entrepreneur. The entrepreneur, the team and the firm come together at different phases of the opportunity process, to be disbanded on exit, and recycled for the next venture. Leadership and decisions to combine resources are a dynamic entrepreneurial capability.

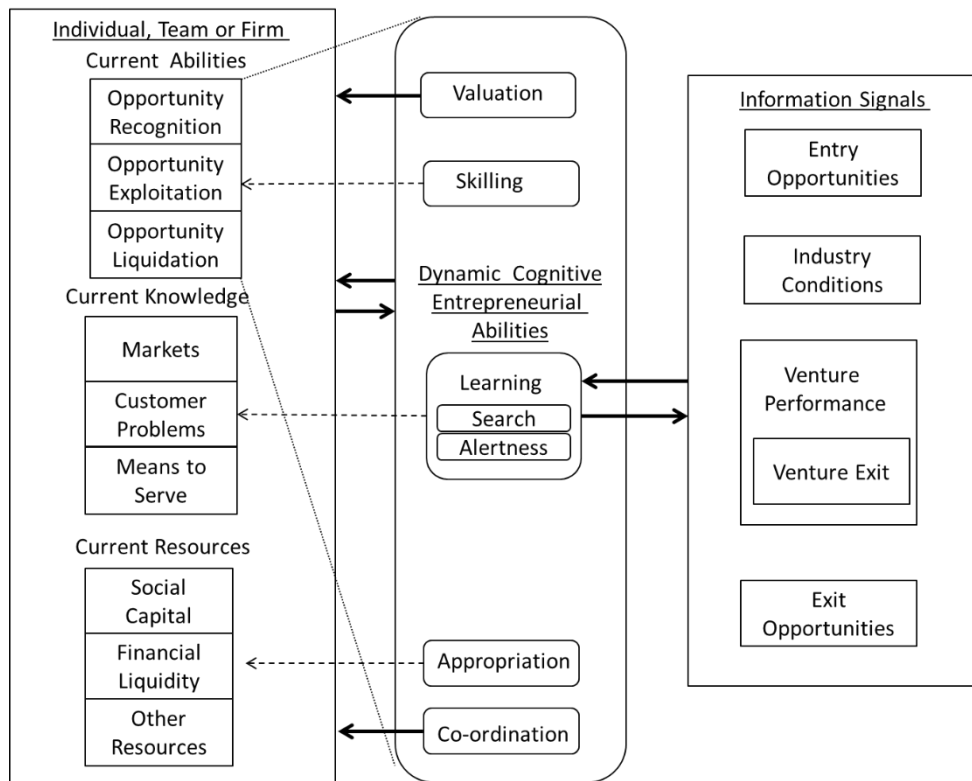


Figure 7.10 New Conceptual Model of Entrepreneurship

7.15 Chapter Summary

This chapter has presented the analysis and findings to answer the principal research question of how the ventures of serial founder entrepreneurs are related to one another. This question has been pursued by examining how, when and why serial entrepreneurs come to select and exploit opportunities, analysing the connections between ventures, and comparing their careers with those of portfolio entrepreneurs and other types of multiple entrepreneurship.

7.15.1 New Theory of Serial Entrepreneurship

Overall the chapter presents a new theory of serial entrepreneurship. Built upon new empirical evidence the new theory has explanatory and predictive power. The new theory also updates our understanding of entrepreneurship.

The first element of the new theory of serial entrepreneurship is an extension to the theory of economic selection. In equilibrium entrepreneurs are matched to opportunities and firms concomitant with their abilities. Selection theory is extended to a more dynamic and realistic process where negative outcomes of closure and failure are common and some serial entrepreneurs take extended breaks from entrepreneurship to recover (see Figure 7.2). Furthermore, the new

version of selection theory must now embrace entrepreneurial learning. Negative outcomes are most common in first novice ventures, while the frequency of successes increases over a career (see Table 7.7), clear evidence of an experiential learning curve, but one punctuated by fundamentally different types of experience, success and failure (see Figures 7.3, 7.9). Here entrepreneurial ability is not fixed. If talent is rooted in cognitive ability then learning is also a vital talent required to build entrepreneurial human capital.

The second element of the new theory shows that successful careers arise from founding a series of related ventures. The process is called 'serial diversification'. It is clear that success only consistently follows success for a small minority of serial entrepreneurs (see Table 7.6). However, the study has pinpointed how, when and why success is most likely to be achieved. A significant finding is that when ventures are related through reused and recycled knowledge and other resources there is a higher probability of founding a high quality venture. If they are unrelated or insufficient learning has taken place to build relevant experience then a negative outcome is very likely. There is clear economic logic for starting related ventures that reuse knowledge and resources whose performance is known (de-risked) and whose costs have been largely sunk in previous ventures and employment. Therefore, start-up experience alone is not enough to guarantee success.

The third new element is the modelling of the four modes of venture creation practised by experienced multiple founders (see Figure 7.7).

1. Internal Replication
2. Internal Diversification
3. Internal Replication and Transfer
4. External Replication

1. Internal Replication – cloning a previous venture or adapting it on the basis of learning in reaction to a venture failure.

2. Internal Diversification – making a related or unrelated diversification. Serial entrepreneurs sell or leave lower quality enterprises to found a new firm. However, if the business is retained then the entrepreneur transitions to portfolio entrepreneurship. Should the outcome be negative proto-portfolio entrepreneurs return to single business status.

3. Internal Replication and Transfer – starting-up in a new industry by transferring the inside knowledge and essential components of a previous venture.

4. External Replication – forming a start-up by copying an incumbent from the outside typically in a growth sector and making adaptations to compete more effectively.

Furthermore, there is some evidence that serial entrepreneurs, having learned a successful mode of entry, will repeat it several times over a career (see Figure 7.8).

These modes of founding are a completely new addition to our knowledge of expert entrepreneurship. They contrast with the entry modes of novice entrepreneurs (see Figure 7.4). Future serial entrepreneurs mainly rely on employers and existing forms of business to copy when planning their own start-up. However, novices alone innovate completely new businesses.

A summary comparison of novice and expert modes is given below in Figure 7.11.

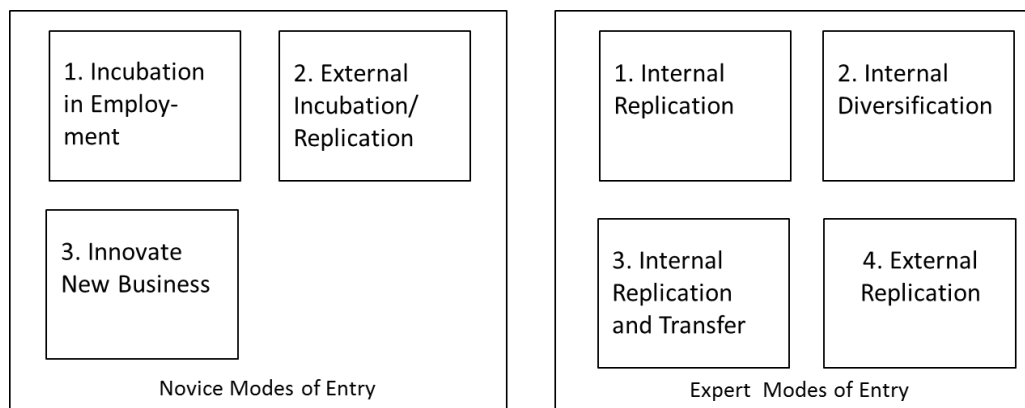


Figure 7.11 Novice and Expert Modes of Venture Creation

The fourth element of the new theory of serial entrepreneurship is the insight that the outcome of the previous venture is significant for the choice of opportunity and mode of creation for the next venture in the series. The exit conditions are: 1) a high cost negative exit, 2) an affordable low cost exit, 3) a high value successful exit, 4) a low or moderate value exit, or 5) no exit. These conditions will determine the process of recognition and exploitation for the next opportunity. In addition, the new model can be used to predict the outcome of a venture from the combination of: a) The outcome of the previous venture, b) the type of opportunity, c) the industry and d) the mode of founding (see Table 7.9). The choice of next venture is also affected by activities in the breaks and interludes between ventures which can deflect a career trajectory.

The fifth element of the new theory of serial entrepreneurship is how serial founders provide intra-industry innovation derived from deeper knowledge and inter-industry innovation by transferring key opportunity components such as business models/mean to serve to new opportunities. Serial

entrepreneurs can create new to the world products and start-up at the beginning of new industries throughout their careers (See Tables 7.11, 7.12).

Venture outcomes/exit conditions also play a very important part in understanding how innovation occurs and is spread from industry to industry. High quality ventures are synonymous with innovation and growing markets and attract high prices. Armed with the experience of success and significant liquidity, but restricted by non-competition clauses these serial entrepreneurs enter new industries and spread their innovations. Novice entrepreneurs react to failure not by pursuing new opportunities but return to try again with either a clone if the venture closed for non-business reasons or an adapted version that encapsulates what was learned from the failure. Successful or unsuccessful exits are not associated with a reduction in ambition, or 'playing it safe' in the next venture. There is evidence of a ratchet effect. Additional experience and learning facilitates the growth of ambition.

Even imitative replications of existing firms or previous ventures can be innovative because they result in imperfect copies and include considered adaptations to enhance competitiveness. While centripetal forces keep half of all serial entrepreneurs within the same industry corridor, opportunities arise to take new pathways. They are profitable diversions if they are supported by relevant transferable knowledge and other resources.

The new theory of serial entrepreneurship upholds the basic tenants of entrepreneurial theory. An entrepreneur is someone who specializes in taking judgemental decisions about the coordination of scarce resources Casson (1982), such that the competence of the entrepreneur in identifying business opportunities and gathering resources is directly related to the performance of the start-up firm (Chandler and Hanks, 1998). However, it is clear from this intensive study that serial and portfolio entrepreneurs often get this judgement wrong and career paths remain idiosyncratic. For example, for novices the quality of an opportunity can outweigh a lack of relevant experience. The study reveals that there is an important juncture in an entrepreneur's career when without an exit they make decisions to start new firms in parallel that may transition them to portfolio entrepreneurship.

The study provides new insights into the cognitive thinking patterns and decision making of serial entrepreneurs that underpins the theory of serial entrepreneurship. It shows how they develop cognitive exemplar templates and heuristics for detecting and exploiting new opportunities, such as by reusing business models that are largely industry independent. For corridors to be followed and knowledge recycled there must be a cognitive process akin to reasoning by analogy whereby new

opportunities are mapped to existing knowledge templates and the dots are joined between these mental representations. There are new insights into the formation of new opportunities by experienced entrepreneurs (see Table 7.13) including the benefits for information capture and processing that arise from having an existing firm (see Table 7.14). Some predict the future by extrapolating trends, others look for what is missing in today's offerings, some combine and package existing components in new and creative ways (see Table 7.15), a new form of creativity so far undocumented. The traditional hard distinctions of alertness vs. search and discovery vs. creation do not always match the entrepreneurial experience of opportunity formation.

The thesis concludes that entrepreneurial learning is an important driver for the accumulation of entrepreneurial human capital by serial entrepreneurs. The study provides fresh insights into why, what, and when serial entrepreneurs actually learn. Employment is a common means of learning about how to start a similar firm, learning vicariously from others and copying incumbent firms. Cloning and 'rebooting' also provided structured learning opportunities for the relatively inexperienced. Learning from failure is transformational and serial entrepreneurs also learn to time their exit and sell their company. Serial entrepreneurs learn to innovate, using controlled experiments and learning with and from collaborators. Successful modes of creation are learned and then repeated during careers (see Figure 7.8).

These theoretical advances to serial entrepreneurship are set alongside an analysis of three portfolio entrepreneurs. Portfolio founders appear to be similar to serial founders in terms of: innovation, learning, failure and level of ambition. The chief difference is the absence of exit from firm ownership and management. The fact that successful exits provide considerable personal wealth to serial entrepreneurs provides an argument against the economic superiority of portfolio entrepreneurship. As postulated serial founders despite exiting can benefit like portfolio entrepreneurs from related diversification though across discrete ventures. Serial diversification, like special and unique expertise in exit and re-entry is a type of human ability peculiar to serial entrepreneurs.

In addition to inducing new theory another role of qualitative case study analysis is to complement larger scale quantitative studies. This thesis finds that entry experience (mode of venture creation) and exit experience (positive or negative) are powerful explanatory variables. They measure both entrepreneurial human capital that cannot be easily learned elsewhere and also venture performance.

Finally, the new theory of serial entrepreneurship has stimulated new thinking about the nature of entrepreneurship. The thesis presents a new model of entrepreneurship that includes the recursive and dynamic nature of serial entrepreneurship driven by: information, learning and resource accumulation (see Figure 7. 10).

The next chapter summarises and concludes the thesis.

CHAPTER 8

Summary, Conclusions and Recommendations

This chapter draws together the threads of the preceding chapters to conclude with the distinctive contributions of the thesis to theoretical and empirical knowledge and its position within the literature. The chapter identifies the practical implications for policy makers, practitioners and educators, and sets out an agenda for future research.

8.1 Section 1. Overview of Study Outcomes

8.1.1 Research Sample and Methodology

The sample of 26 case studies, 116 ventures and over 50 hours of interviews is likely to be one of the largest qualitative studies of its kind. 21 cases were of serial founders, 3 portfolio founders and 2 other case of habitual entrepreneurship. The study sample is almost exclusively of British small business serial entrepreneurs with an average of 24 years' experience, 80% of whom founded 3 or more businesses and so would be considered experts by researchers (e.g. Baron and Ward, 2004). All are still active and none had retired at the time of the study in 2014. The 112 start-ups span a range of different industries over a time period of considerable environmental change. The methodology used is a pragmatic combination of positive case study and interpretation using grounded theory.

8.1.2 Research Question

How are the ventures of serial starter entrepreneurs related to one another? How are the 1st, 2nd and nth start-up ventures related? The question was first posed by the authors of the assets and liabilities theory of habitual entrepreneurship (Starr and Bygrave, 1991; 1992). This theory questioned the idea of an upward sloping experiential learning curve posited by MacMillan (1986) from a single anonymous case study. This has been an unanswered question for some time, and has been supplemented by many other calls for more nuanced qualitative longitudinal studies of the processual and contextual aspects of the careers of habitual entrepreneurs. While many studies do not distinguish between the types of habitual entrepreneurship, the literature shows that there are real differences in behaviour and economic outcome. Consequently, this thesis purposely throws a spotlight on serial founder entrepreneurs.

The relevance and timeliness of the study is enhanced by the recent development of a comprehensive theory of the major sub-types of entrepreneurship (novice, portfolio and serial) by

Parker (2014). However, these developments are based largely on a comparatively deeper understanding of portfolio entrepreneurship (e.g. Alsos, Ljunggren and Pettersen, 2003; Iacobucci and Rosa, 2005; Rosa, 1998). It has been argued that this one sided development has been to the detriment of the established theory of entrepreneurship. It is claimed by Iacobucci and Rosa (2004; 2005) that multi-firm portfolio entrepreneurs behave like conglomerates whose behaviour is best explained by the evolutionary resource-theory of the firm. Moreover, portfolio entrepreneurship is considered to be economically superior to serial entrepreneurship (e.g. Parker, 2014; Westhead, Ucbasaran, Wright, 2005b).

Human capital theory has been a major driver of research into habitual entrepreneurship. It has been the expectation of most academics that repeat experience of founding increases venture performance. However, consistent evidence for this intuitive proposition has been elusive. Following Reuber and Fischer (1994; 1999) Cope (2003; 2005; 2011), this suggests a much more complex process where critical events (Chell, 2004) such as entry and exit, not easily summated in aggregate quantitative studies, may be susceptible to examination using an exploratory qualitative research approach. DeTienne, (2010) maintains that entrepreneurship does not begin and end at start-up; exit is a neglected part of the process. Serial entrepreneurs are clearly differentiated from portfolio builders because they exit one venture before focussing on the next. To unpick the relationship between successive ventures the thesis has studied careers with additional emphasis on exit and entry.

Detailed research questions were grouped under four themes synthesised from the literature review presented in Chapter 5. These themes are used to summarise the findings already presented in Chapter 7.

Overall, this thesis provides several new empirical and theoretical insights.

8.1.3 Theme 1. Selection Theory

Selection theory places repeated entry and exit as part of an economic selection process that matches entrepreneurs to suitable opportunities. High ability entrepreneurs will be observed starting high quality ventures (Holmes and Schmitz, 1990; 1995; Jovanovic, 1982; Lucas 1978; Plehn-Dujowich, 2010) and enjoying the advantages of increased liquidity (Evans and Jovanovic, 1989). Most versions of selection theory place entrepreneurship as a talent discovery process, fix a level of natural ability and exclude both learning and a return after failure.

Detailed Research Questions

- 1.1 How do future serial entrepreneurs become entrepreneurs?
- 1.2 How do future serial entrepreneurs transition from novice (one time) entrepreneurs to serial entrepreneurs?
- 1.3 What is the impact of failure on venture selection by serial entrepreneurs?
- 1.4 What is the impact of success on venture selection by serial entrepreneurs? E.g. liquidity?
- 1.5 Is venture failure normal i.e. the 'norm'?
- 1.6 Do serial entrepreneurs learn from failure?
- 1.7 Do cognitively intelligent serial entrepreneurs transfer learning of success and failure to the next venture? i.e. Is there a learning curve that unpins the development of expertise?

As is common to theoretical approximations of complex socio-economic behaviour, economic selection theory is a simplification of reality. This thesis reveals how, why and when serial entrepreneurs become owner managers of particular ventures. A key contribution of the study is to show how serial entrepreneurs learned their trade. Though none foresaw nor planned to become a serial entrepreneur, most set out early executing their plans to become entrepreneurs, influenced by family backgrounds and formative experiences. Most of their novice start-ups were incubated in employment, using and replicating what they had learned to move up the value chain from employed to employers. These are direct examples of learning from experience (Minniti and Bygrave, 2001; Politis, 2005; 2008). Some novices, despite their inexperience, founded highly innovative ventures achieving high sales prices at exit. While providing some evidence for Aldrich and Ruef's (2006) belief that novices and not serial entrepreneurs are the main source of innovation, innovation was found to occur throughout careers.

A small minority were recruited as 'apprentice' entrepreneurs by the lead entrepreneur of the team. A few, lacking the required resources, entered alliances with incumbent firms to learn about the missing pieces of the jigsaw. These less experienced novices invariably experienced the break-up of these teams and alliances for non-business reasons. While this could be construed as supportive of suggestions by Levie, Don and Wiklund (2010) that the number of business failures is overstated, these are in fact genuine failures where firms ceased trading, wound-up and restarted, incurring high start-up costs. Re-starts after closures for non-business reasons use a 'rebooting' process, cloning the now defunct venture.

The transition to serial status is unplanned. No case said they set out to start and sell several ventures. The novice business is exited due to an unplanned negative outcome or an unplanned acquisition by a third party attracted to a high quality venture. Without an exit an entrepreneur may stay a singleton or transition to portfolio status.

Economic selection has relatively little to say about negative exits, especially those that are especially costly, and this thesis contributes an extension to existing theory (see Figure 7.2). What is interesting is that these unsuccessful ventures provided a structured learning process that transforms the skills of the novice entrepreneur, improving the odds that the clone grows to become a high quality venture. Negative outcomes for business reasons generate a period of deep reflection and transformational learning (e.g. Cope, 2011) and a return to the same novice opportunity to try again. Closures and failure of all types provide a crucible of learning. Losses are not always 'affordable' as postulated in effectuation theory (Sarasvathy, 2001). It is important that they do not prevent a return to entrepreneurship or a deterrent to further episodes of founding. Banks, angel investors and close social networks can reduce the costs of failure and can help serial entrepreneurs recover and return to entrepreneurship. Recovery from the economic, social and psychological effects of an unsuccessful failure is part and parcel of the selection process and also a driver of innovation.

The evidence from failed novice entrepreneurs and experienced serial entrepreneurs returning to the same opportunity supports the conclusion that an entrepreneurial opportunity can then be separated from the venture (Plummer, Haynie and Godesiabois, 2007) and also from the entrepreneur. When a business fails it is not always because it was a substandard opportunity that should be abandoned, but because the entrepreneur had not yet learned the correct skills and business model to exploit the opportunity successfully.

The evidence from successful exits in this study supports established economic selection and liquidity theory. The study also confirms that the strongest predictor of venture outcome is business age as a measure of innate quality. Additional support for the theory is that all successfully exiting serials returned to entrepreneurship to pursue an opportunity of higher or similar quality, suggesting a ratchet effect on their ambition and risk taking propensity. A new insight from this thesis is that successful entrepreneurs start-up in new sectors or new industries. They are much more likely to be successful if they adhere to Helfat and Lieberman's (2002) requirement that firms only enter markets if they have suitable resources.

From both successful and unsuccessful exits, the economy obtains innovations, modifications, adaptations, adjustments to the environment, and also financial liquidity recycled into the hands of able entrepreneurs. In addition, other resources are recycled (Mason and Harrison, 2006) that have been de-risked and whose costs have been sunk in previous ventures.

There is an experiential upward sloping learning curve first proposed by MacMillan (1986), though as in many other studies statistical proof is weak. The presence of failure and other idiosyncratic events and decisions breaks the assumed smooth link from human capital to venture performance. For researchers, investors and agencies looking for a successful formula for entrepreneurship then start-up experience is not enough to guarantee success. Successful successive ventures are linked by the reuse of tangible and intangible resources (Porter, 1985). This insight provides a more subtle but more economically sound version of the assets and liabilities and success breeds success theories of habitual entrepreneurship akin to real options theory (McGrath, 1996). Serial entrepreneurs who find and pursue opportunities with a good fit to current resources enjoy a cost and risk advantage that reduces information costs from learning, and experimentation. Here closed or failed ventures are costly experiments.

While this thesis is clear that, Sarasvathy, Menon and Kuechle (2013) are correct that cognitively intelligent serial entrepreneurs do transfer learning of success and failure to the next venture, it is the ability and capacity to husband and recycle related resources of all types, including cognitive elements such as templates (Baron, 2006; Baron and Ensley, 2006) and heuristics (e.g. Tversky and Kahneman, 1974) that are a mark of entrepreneurial expertise (Manimala, 1992; Bingham and Eisenhardt, 2011). Progressive economic selection of entrepreneurs to suitable opportunities requires there is a relevant and valuable connection between start-ups, even if it is in a new industry.

8.1.4 Theme 2. The Nature of Venture Corridors

There is a large body of theory and evidence (e.g. Chen, 2013; Oe and Mitsuhashi, 2013; Toft, Kehler, Wennberg and Kim, 2014), that strongly suggests that both serial and portfolio entrepreneurs should follow narrow corridors (Ronstadt, 1986; 1988) or paths of related ventures, constrained by prior knowledge, social and physical resources, cognition, and learning. Each venture is not an end in itself. It creates real options (McGrath, 1996) and preferential access to future opportunities (Bowman and Hurry (1993).

Detailed Research Questions

- 2.1 Do serial entrepreneurs make closely related diversifications, i.e. stay in the same industry corridor to reuse related prior knowledge and other resources?
- 2.2 How do exit conditions, positive or negative, affect the choice of venture corridor?
- 2.3 What is the source of opportunities?
- 2.4 Do they arise from intentional search or from serendipitous alertness?
- 2.5 What is the role of social capital in this process?

Around half of serial entrepreneurs stay in the same industry corridor; the others follow related and unrelated opportunities into new industries, of which only the related enterprises survive to maturity. An exception is failed entrepreneurs with so few resources left that they must select an immediately available low-cost small-scale opportunity in another industry.

For experienced founders there is evidence that ability to exploit an opportunity is a very important part of the opportunity selection process. As already explained, start-up experience is not enough to guarantee success. The recognition of high quality opportunities that can actually be pursued is the key to the next successful venture because completely unrelated ventures are invariably unsuccessful. Some entrepreneurs fall into the cognitive trap (e.g. Dyer, Gregersen and Christensen, 2008) of thinking that they have the ability to change corridors.

As serial entrepreneurs use the same cognitive templates and heuristics to find new opportunities again and again, often in different industries, this has ramifications for researchers of corridor effects (e.g. Gruber, 2010; Gruber, MacMillan and Thompson, 2012; 2013) who view many entrepreneurs as passive receivers of new information and unable to form new paths easily. Nevertheless, there are economic returns to specialisation in one industry. The thesis confirms that new opportunities arise from deep knowledge of a particular sector (Grégoire, Barr and Shepherd, 2010). Innovation occurs 'naturally' in existing enterprises. They incubate and produce new opportunity specific information, attract third party collaborators (sometimes from different industries) as industries co-evolve (Aldrich and Martinez, 2001), and provide test beds for new ideas and new technologies.

As postulated in the literature review, both search (Fiet, 1996) and alertness (Kirzner, 1973) are channelled by information corridors (Venkataraman, 1997) of prior knowledge (Shane, 2000). Alertness is not a completely independent variable in the entrepreneurial process, and information

corridors are also innovation corridors. Most serial entrepreneurs mentioned alertness in relation to opportunity discovery rather than systematic economic search. Some serial entrepreneurs describe a complementary and simultaneous cognitive process that combines both. Systematic search is used to replicate incumbent businesses, find and filter potential opportunities using a template, and to develop an existing opportunity.

The great majority of serial entrepreneurs remarked that they consciously avoided developing a network of general contacts. As predicted in the literature they relied on 'inner circles' (e.g. de Koning, 2003; Gemmell, Boland and Kolb, 2012) of partners with complimentary skills, mentors and family members. An insight is that some developed a sophisticated 'purposeful network' to carry out structured economic search for information not readily available. Overall, binary mutually exclusive definitions of search and alertness are not always useful; the actual process is often more complex.

8.1.5 Theme 3. Innovation

This topic is concerned with the extent to which the expected narrow path of related start-ups is compatible with the role of entrepreneurs as innovators (Schumpeter, 1934; 1942) required for economic growth. Narrow corridors suggest mainly imitative ventures or marginal innovation as a result of industry specialisation (e. g. Aldrich and Reuf, 2006; Gruber, MacMillan, Thompson, 2012; 2013).

Detailed Research Questions

- 3.1 Are serial entrepreneurs innovative or imitative?
- 3.2 Are opportunities discovered or created?
- 3.3 Are higher-order cognitive abilities in evidence?

Serial entrepreneurs are innovative both within and across industry corridors, with broadly equal numbers of innovative and imitative opportunities. The careers of serial entrepreneurs reflect changes in the business environment, particularly technological change and economic cycles. Serial entrepreneurs are attracted to high quality opportunities and are more likely to found businesses of either type in high potential and growth sectors rather than in mature sectors. Many create 'new to the world' products. The evidence from business sales and IPOs supports the assumption (e.g. Ucbasaran, Westhead and Wright, 2009) that innovative opportunities are of higher quality and wealth creating potential.

Consistent with the findings on search and alertness, the majority of serial entrepreneurs described discovering rather than creating their opportunities. A significant minority thought it was a “bit of both”. Creativity is aligned with painstaking research and the cognitive ability to project emerging trends into the future and form new patterns of private subjective information (Casson, 2005). Serial entrepreneurs who created ‘new to the world’ products or services were able to recognise meta-cognitively (Flavell, 1979) their own creativity. Others, particularly software entrepreneurs, struggled to recognise their own creativity. Other ways of describing the process included: looking for what is missing, assembling pieces of the jigsaw, combining and packaging existing components in new and creative ways. As with alertness and search, the two binary and opposing constructs of discovery or creation are not necessarily mutually exclusive.

Overall, the process is consistent with evolutionary theory that emphasises path dependencies, and allows both intra and inter-industry innovation. Here re-combinations of existing components is an essential part of a creative process. However, just a few marginal evolutionary innovations can result in a discontinuous/frame-breaking market innovation.

Further research into the origins of opportunities using evolutionary realist constructs (Alvarez and Barney, 2007; 2010) has the potential to shed further light on the process.

Cognitively talented serial entrepreneurs use information to think beyond prior knowledge and succeed in new domains (Eesley and Roberts, 2012). Some of the evidence for high-level cognition has already been mentioned such as transformational learning (e.g. Cope, 2011) triggered by venture closures or failures. Serial founders develop cross-industry templates and heuristics to search for and screen suitable opportunities. Very experienced entrepreneurs see meta-connections between opportunities in seemingly unrelated industries using reasoning by analogy (Fiske and Taylor, 1991; Gavetti, Levinthal, and Rivkin, 2005). There is likely to be a similar cognitive process whereby new opportunities are mapped to existing knowledge and the dots are joined (Baron, 2006) between these mental representations. There is evidence of high order thinking (Lord and Mather, 1990) including: mindful thinking (Rerup, 2005), the use of small information clues (Simon, 1973), counterfactual thinking and mental simulation (Gaglio, 2004), to make bi-associations to create new ideas (Ko and Butler, 2003; 2006). Nevertheless, the prevalence of negative outcomes reveals that serial entrepreneurs also make mistakes, from superstitious learning (Levitt and March, 1988), and by not learning enough from previous ventures and falling into cognitive traps (e.g. Dyer, Gregersen and Christensen, 2008). Accumulated experiences of the same type are needed to overcome misperceptions. (Kim, Kim, and Miner, 2009). The data is similar to Toft-Kehler,

Wennberg and Kim (2014) in finding faulty learning at low levels of experience. However, this can also occur later in a career when encountering new situations.

8.1.6 Theme 4. Portfolio vs. Serial Entrepreneurship

This theme is in response to recent theoretical developments by Parker (2014) and Sarasvathy Menon and Kuechle (2013). The literature suggests that serial entrepreneurs are able to use resource recycling (Mason and Harrison, 2006) and incubation (Cooper, 1985) to achieve similar economic advantages in venture formation as portfolio entrepreneurs.

Detailed Research Questions

- 4.1 Why do entrepreneurs transition to become portfolio entrepreneurs?
- 4.2 What are the economics of serial entrepreneurship?
- 4.3 Do serial entrepreneurs benefit from some form of pseudo diversification, supported by recycling?
- 4.4 Do serial entrepreneurs take on increasingly risky opportunities?

The small sample of three portfolio founders appear to be similar to serial founders in terms of innovation, learning, failure and ambition. They came to entrepreneurship through similar routes and prefer to start small ventures using their own resources, eschewing external finance beyond conventional bank loans. The chief difference is the absence of exit and the growth of a permanent group of firms. Portfolio entrepreneurs develop a medium quality business that is not attractive to a buyer. Rather than being risk averse (Parker, 2014) they lack ability (Holmes and Schmitz, 1990: 1995). Portfolio founders grow by building an interlocking mutually supporting set of ventures linked by horizontal (e.g. Iacobucci and Rosa, 2005; Rosa, 1998) and also, as found in this study, vertical synergies. They make use of their permanent base of firm controlled resources to generate options (McGrath, 1996) and make controlled experiments, which do not threaten their continuation as entrepreneurs. However, in this study they do make risky unrelated diversifications and spin-outs that fail. There is no evidence to support the assertion (e.g. Parker, 2014) of unrelated ventures being founded to balance overall portfolio risk.

Serial entrepreneurs also benefit from their own form of diversification (Sarasvathy, Menon and Kuechle, 2013), renamed in this thesis as 'serial diversification'. The formation of real options (McGrath, 1996) and resource recycling (Mason and Harrison, 2006) and reuse in a related opportunity reduces cost and mitigates risk. From an economic perspective, the wealthiest

entrepreneurs in the survey are serial entrepreneurs who sell their high quality ventures to a trade buyer or to venture capitalists. To build and maintain a career serial entrepreneurs must master the assembly and re-assembly of resources across discrete firms.

8.2 Section 2. Implications for Entrepreneurship Researchers, Policy-Makers, Practitioners and Educators

8.2.1 Implications for Entrepreneurship Researchers

The thesis helps close the relative gap in our understanding of serial entrepreneurship compared to portfolio entrepreneurship. The thesis makes a number of major and minor contributions of interest to academics.

Major Contributions

1. It provides a more complete theory of serial entrepreneurship, building on the postulates and empirical work of others and also providing unique insights. The theory has five main elements whose postulates can be tested in follow-on research.

A. Extensions to economic selection theory to include negative venture outcomes and the recovery from such critical set-backs, and following from this it must now include entrepreneurial learning where human capital is not fixed and ability increases with experience.

B. Successful serial entrepreneurs practice 'serial diversification'. To achieve a successful series of ventures, and therefore a successful career, new ventures must be related to previous enterprises. These connections may not be obvious, e.g. when a business model is transferred to a different industry.

C. There are four modes of venture creation practiced by experienced multiple founders that are different from those practiced by novices. Three of the four modes involve an explicit forms of replication of previous ventures or existing business forms. When a mode of founding achieves a positive outcome it is likely to be repeated over a career.

D. The outcome of the previous venture is significant for the choice of opportunity and mode of creation for the next venture in the series. The exit conditions are: 1) a high cost negative exit, 2) an affordable low cost exit, 3) a high value successful exit, 4) a low or moderate value exit, or 5) no exit. No exit is a condition for the potential transition to

portfolio entrepreneurship. Successful or unsuccessful exits are not associated with a reduction in ambition.

E. Despite the apparently imitative nature of their mode of venture creation, serial entrepreneur founders provide both intra-industry innovation derived from deeper knowledge and inter-industry innovation by transferring knowledge and other resources to new opportunities.

2. Serial entrepreneurs can be similarly efficient as portfolio entrepreneurs through serial diversification. They also can be more economically successful than portfolio entrepreneurs through the sale of high quality innovative firms.

3. The thesis reveals more about the process of serial entrepreneurship including the types of decision, learning and cognitive processes employed. Traditional processes of information search, alertness, discovery and creation are often combined. Experienced founders see creativity in the assembly and packaging of existing resources in new ways and can detect important information clues in their peripheral vision when searching.

4. A new general model of entrepreneurship is offered that includes the recursive and dynamic nature of serial entrepreneurship driven by information processing and resource accumulation.

Minor Contributions

1. The term habitual entrepreneur should be replaced with the specific sub-types of serial and portfolio entrepreneur further sub-divided into founders, acquirers and inheritors. This thesis recommends a portfolio founder entrepreneur is defined as someone creating at least three firms owned and managed in parallel.

2. Serial entrepreneurship is distinguished from portfolio entrepreneurship by its cycle of exit and re-entry into entrepreneurship. The constructs of entry/re-entry and exit experience have been shown to have explanatory power and should be added to the nomenclature of entrepreneurial human capital. These constructs answer longstanding calls (e.g. Reuber and Fischer, 1994; 1999) for the inclusion of iterative, flow and transformational elements in entrepreneurial human capital.

For example, recent longitudinal studies of venture performance and returns to entrepreneurship rely on firm or personal earnings (e.g. Chen, 2013; Toft, Kehler, Wennberg and Kim, 2014). Further studies should include binary conditions of successful or unsuccessful exit. This will bring further clarity to the relationship between entrepreneurial experience and outcomes.

3. The current exit typology of harvests and liquidations (Wennberg, Wiklund, DeTienne and Cardon, 2010) is modified. Exits should be classified according to economic consequences. Successful exits are business sales of varying value, with a premium or surplus over book asset value. Unsuccessful exits are closures that are economically 'affordable', while failures are not.
4. As serial entrepreneurship often includes pauses and interludes that are material to their career trajectory these periods and activities should be included for further studies.
5. As most serial entrepreneurs walked away from the earn-out clauses agreed at the time of sale, the findings cast doubt on the resource-based theory of the firm's assumption of entrepreneurial dynamic capabilities being within the control of the firm.
6. Portfolio and serial founders have more in common than is reflected in the literature, such as background and a preference for using their own resources. The study reveals that portfolio entrepreneurs engage in vertical as well as horizontal diversifications. Furthermore, portfolio entrepreneurs do not diversify to reduce overall risk in a portfolio as proposed by Parker (2014).
7. The need to separate the career of the individual from the fortunes of the firm is upheld in this study. Furthermore, the study also shows that it is useful to treat opportunities as also having a distinct identity and lifecycle (e.g. Plummer, Haynie and Godesiabois, 2007). Serial entrepreneurs replicate incumbent firms and re-enter entrepreneurship to re-exploit essentially the same opportunity.
8. While the relatedness of successive ventures is assumed by some researchers (e.g. Delmar and Shan, 2006), the literature review provides a new view of relevant theory as an array of corridor narrowing (centripetal) and widening (centrifugal) forces.
9. To assist in understanding the source and nature of opportunities, the thesis recommends an extension to the means-ends opportunity framework (Eckhardt and Shane, 2003) to include the business model (George and Bock, 2011) and/or the similar construct of the means to serve (Shane, 2000). This will emphasise the entrepreneur's role in the coordination of scarce resources (Casson, 1982) and as found in this study, new forms of coordination are a source of innovation.
10. Serial founder entrepreneurs describe using both opportunity discovery and creation, sometimes separately, sometimes together, in a cognitive process called 'packaging' that uses a number of other discrete cognitive processes. Similarly, opportunity search and alertness are also described by some entrepreneurs as joint and complementary processes. This suggests that rival ontologies are

best combined in future studies. For example, the evolutionary realist approach (e.g. Alvarez and Barney, 2007; 2010) given empirical support in this thesis may prove useful.

11. Alertness (Kirzner, 1973) and search (Fiet, 1996) are constrained by prior knowledge. Also alertness without search does not usually lead to frame-breaking opportunities.

8.2.2 Implications for Policy-Makers, Practitioners and Entrepreneurship Educators

The thesis concludes with a number of recommendations for other stakeholders in entrepreneurship.

Policy Makers

1. Target support to inexperienced novice entrepreneurs, as it is here that a negative exit is most likely to occur. Position programmes that introduce entrepreneurship as a learning experience.
2. Reposition the role of small business groups such as the UK's FSB from networking to mentoring.
3. Serial entrepreneurs who 'bounce back' go on to make successful careers. The costs of failure and the barriers to re-entry should be lowered. This includes familiar proposals for less strict bankruptcy laws. In addition there should be tax incentives for banks to write-off loans and for venture capitalists to write-off losses quickly. Refinancing returning entrepreneurs could also be incentivised.
4. Provide support for unsuccessful entrepreneurs in the form of grants or vouchers for higher education to encourage a period of reflection and learning.
5. Remodel government backed schemes that encourage experienced entrepreneurs to pursue new 'blue sky' opportunities unrelated to current ventures. As the study shows, start-up experience is not enough and new opportunities must be related. New opportunities should be channelled to entrepreneurs with relevant experience using a check-list developed from the constructs used in this thesis.
6. Liquidity and adequate capitalisation of start-ups is important. The finance industry could learn from the mortgage industry in respect of the rapid turnaround of loan applications.

Practitioners (Entrepreneurs)

1. Avoid copying existing businesses in emerging or growing sectors as a method to enter entrepreneurship. For the first novice venture it is much safer to internally replicate a business and incubate a start-up from within, i.e. in employment.
2. Exercise caution towards opportunities for unrelated diversification. Be particularly cautious about international diversifications and subsidised official programmes.
3. Embrace and consider opportunities to innovate provided that the conditions of recycling and reuse of proven components and relatedness hold true. Develop cognitive models and templates of the business model/means to serve. Serial entrepreneurs can be well placed to exploit emergent industries where they have relevant experience. Start-up experience alone is insufficient.
4. Avoid business exits that have earn-out clauses or similar forms of agreement that turn the entrepreneur into an employee. Retaining a share and a seat on the Board of Directors is more likely to benefit both parties.
5. Understand that an unsuccessful business is not necessarily the end of an entrepreneurial career. Even bankruptcy can be avoided by negotiation and by giving evidence of learning from mistakes.

Educators

1. Rebalance the current emphasis on 'success stories' towards the use of theory and evidence of the factors that makes a business successful or unsuccessful.
2. Position employment and entrepreneurship as complementary not mutually exclusive pathways. This is already true for the professions such as accountancy, legal services etc. whose practitioners go on to start new firms to capitalise on their experience.
3. Provide short-courses and consultancy to entrepreneurs contemplating new opportunities or seeking growth through diversification to avoid inappropriate new ventures.
4. Provide short-courses and consultancy to entrepreneurs in difficulties or in recovery from failure.

8.2.3 Limitations of the Research

There are some limitations to the reliability and validity of the thesis. Generalisability of the findings cannot be claimed for qualitative research. Patton (2002) and other researchers must judge the transferability to other research situations. The sample is subject to survivor bias (Wiklund and Shepherd, 2003). All 26 case studies are of surviving 'persistent' entrepreneurs who were still active at the time of the study in 2014. The 'life histories' captured are not complete and further research

is required to determine the overall outcome for all of the start-ups analysed. The smaller number of portfolio entrepreneurs reduces the strength of findings in this area. In addition, the research (with two exceptions) relies on individual entrepreneurs as informants.

Finally, the results rely on a pragmatic blend of interpretivist inductive analysis triangulated by a positivist analysis of ventures singly and in aggregate. Nevertheless the analysis and interpretation are open to researcher bias. Serial entrepreneurs willing to be interviewed are hard to sample in significant numbers, and it was not possible at reasonable cost to purposefully seek out additional cases that might contradict the findings. On the other hand, the sample size compares favourably to other studies employing similar methods and could be one of the largest so far conducted.

8.2.4 Requirements for Further Research

1. The postulates of the new theory of serial entrepreneurship should be tested for their veracity on larger samples and other samples of serial and portfolio entrepreneurs.

Other specific topics for further research include:

2. Determination of the ratio of successful to unsuccessful ventures in the careers of serial entrepreneurs. It is postulated that the ratio of 2:1 in favour of unsuccessful exits in this study's sample would improve over time.
3. Establish if there is a general rule regarding the number and type of negative exit that results in either a temporary or permanent exit from entrepreneurship.
4. Determine if more is learned of relevance to a successful career from failure than from success.
5. The study supports the importance of liquidity in determining the size and quality of the opportunity exploited. Founders in this study have a strong preference for using their own financial resources. Further research is required to understand the trade-off between starting small and fast and starting with more substantial liquidity in the form of loans or equity investment.
6. The transition to portfolio entrepreneurship requires further research to examine the premise that the pre-condition for portfolio entrepreneurship is a lack of exit potential, e.g. a lower quality venture with limited growth prospects, not attractive to outside buyers, but not unattractive enough to dispose of.
7. Parker (2014) suggests that serial entrepreneurs are different from portfolio entrepreneurs in having a high preference for risk. In this study, risk preference assessed by the ambition of their

ventures at least remains constant. The absence of exit suggests that portfolio entrepreneurs have lower ability. Further research is required using suitable risk and ability constructs to determine if there are material differences between different types of experienced entrepreneurs.

8. The findings relating to how the opportunity centric process of entrepreneurship occurs in serial and portfolio founding suggests that binary categorisations of the process, (discovered or created) and outcome (innovative or imitative), are not always useful. This study suggests that evolutionary constructs (e.g. Alvarez and Barney, 2007; 2010) as described by the entrepreneurs' in their own words as 'packaging' and 'peripheral vision' have the potential to shed further light on the process.

9. McMullen and Shepherd's (2006) two-step opportunity decision process separates the recognition process from the assessment to exploit decision. For experienced founders prior knowledge and other resource positions influence both steps, but implementation considerations are the primary consideration. Further research could clarify the actual decision process.

10. Serial and portfolio entrepreneurs can make unrelated diversifications. Further research is required to understand how these opportunities arise and the cognitive and economic decision process that often leads to a negative outcome.

11. Additional research is also needed to determine if the process of innovation may be different for serial compared to portfolio entrepreneurs.

8.3 Section 3. Conclusion

Serial founder entrepreneurs, by dint of their exits from and subsequent return to venture creation are worthy of separate study. This thesis offers a new evidence based theory of venture creation by serial entrepreneurs, connecting venture outcomes to modes of venture creation and setting out the economic forces and cognitive processes at work in a successful career.

Furthermore, relatedness and other corridor effects are not inconsistent with innovation, either evolutionary or frame-breaking. While novice entrepreneurs may bring fresh insights unconstrained by the experience of venture management, serial entrepreneurs replicate successful practices into new ventures and new industries, or return from failure with an improved formula to exploit a still viable opportunity.

In bringing more clarity to serial entrepreneurship, we also reveal similarities and differences between other types of entrepreneurial behaviour. Our overall knowledge increases and further specific research questions are generated. Serial entrepreneurs focus on finding and developing one

opportunity at a time rather than on managing the dependencies of a portfolio of firms. As serial entrepreneurship often includes pauses and interludes it is important to include all of the activities that contribute to the career trajectory of a serial entrepreneur.

In conclusion, the study has contributed further theoretical and empirical progress, advancing our knowledge of serial founder entrepreneurs, their behaviours and the outcomes of their start-ups by answering the principal research question: How are the ventures of serial starter entrepreneurs related to one another? An agenda for further research has been detailed to develop our knowledge of this important group of entrepreneurs.

Appendix I Interview Briefing Letter and Research Instrument



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Re: Entrepreneurship Research – Interview Briefing

Dear,

Thank-you very much for agreeing to be interviewed as part of my research.

In order to use your valuable time effectively I am sending you this briefing that includes the format of the interview I will be using. It is a semi-structured interview. It establishes some basic facts across all the interviews, but also allows for deeper conversation.

My aim is not to write a personal profile or an entrepreneurial life history. I am researching a very specific and detailed aspect of the entrepreneurial process, with the aim of helping new entrepreneurs.

I do not have a particular theory I am trying to prove or disprove I am simply interested in facts. Your anonymity and that of your ventures are guaranteed, so you are able to respond freely. I use a voice recorder to capture our conversation.

If you have any questions please simply drop me an email to s.oregan@roehampton.ac.uk

Yours sincerely,

Interview Structure

Part 1 Background Information

1. List the enterprises or ventures in which you acted as the entrepreneur, either alone or with other entrepreneurs. (Provide basic data on dates, peak turnover, peak no of employees, if profitable etc.) This data should be prepared in advance.
2. For each enterprise where you acted entrepreneurially with others, can you recall their names and their role(s) in the enterprise?
3. Within the context of these enterprises were there occasions when you acted entrepreneurially? When for example a new enterprise was not formed but instead the organisation was transformed in such a way that it was effectively a new venture?

Part 2 The Ventures

Thinking and reflecting on your ventures in turn from beginning, to decision to develop, and through development.

4. What things did you bring to the table that were put to use within your new venture?

These things or elements can be information, knowledge (know-how), resources, or any asset you had at that time. It could be very specific e.g. information about some potential customers or employees, or specific knowledge of a technique. It could also be very general e.g. an area of customer need not covered by others, but not yet quantified.

5. When you think about the other persons who were entrepreneurial with you, what things, or elements of the venture did they bring to the table?

6. Did you use other sources of information, knowledge, resources and assets? They may have been professionals, agencies, mentors, key customers, suppliers, family members, friends, competitors, previous employers or other sources.

7. What did they bring to the table?

Part 3 The Entrepreneurial Process

Again reflecting on each venture, from beginning, to decision to develop, and through development.

8. Were any elements you brought from previous experience and your ventures used again 'as is' i.e. without change?

9. Were elements used again, but with some modification for a new venture?

10. Were any elements developed from scratch?

11. Did you ever realise you were missing something?

12. Did you actively search for missing elements using your own time or having someone else do it, perhaps as a paid professional?

13. To what extent did information, knowledge, resources and other assets come to your venture accidentally - without conscious effort?

Part 4 Looking Back and Looking Forward

14. What is an opportunity? (What isn't an opportunity?)

15. What is the essential difference from ventures that have been developed to other projects you have not pursued or were shelved?

16. What kinds of new opportunities or ventures are you considering now?

17. In what ways are these new ventures related to or unrelated to your previous ventures?

18. How did you come across your new venture, was it 'out there'?

19. What did you create that was not already 'out there' for your new venture?

Appendix II Case Summaries

Given here are short summaries of each case given in order of interview. Due to strict confidentiality promised in advance of the interviews, and also the express promise only to report findings at a higher aggregate level, only highlights can be provided. Further information about each case is embedded and cited in Chapter 7. Interested readers can find this information by following the case citations and construct a more detailed picture of each entrepreneur.

Case 1. The most prolific serial entrepreneur in the study, making 10 venture start-ups in multiple industry corridors over a 42 year career. Now considering retirement. He changed industries several times though only once due to a venture failure. This resulted in the abandonment of special knowledge and the learning of new skills in mainly emergent sectors. The entrepreneurs relied on social capital and reputation in employment to be recruited into entrepreneurship on two separate occasions. This case illustrates that trying to clone an existing business is not always successful. Also that complete failure can lead to a new direction when the entrepreneur has minimum resources with which to restart. The entrepreneur was highly creative, thinking counter intuitively and looking for what was missing. Reused key resources such as technical staff and knowledge learned in business such as software development.

Case 2. 3 start-ups in two related industries. 22 year career as an entrepreneur. He and his partner kept to the same broad industry of the UK high-tech sector. With insufficient knowledge of how to serve the new market niche of high-tech companies spotted as a customer, he and a partner formed a joint venture with an incumbent firm. When the JV broke down they started a clone in the same location. He used the proceeds of a £5million business sale to a large industry player looking to diversify, to enter another new industry of software app development. The venture is moving up the value chain to become a software producer to his former customers and similar high-tech companies.

Case 3. 2 start-ups of different versions of the same opportunity over 15 years with a two-year break between to recover. Essentially an imitator but the imperfect copy of an existing business and a lack of relevant skills led to failure. He returned after failure to restart a much improved and innovative version taking advantage of new supply and demand conditions caused by globalisation and the internet. The case illustrated that copies from the outside of a high growth company are imperfect and adaptations after failure can be innovative.

Case 4. 5 start-ups during a 33 year career. Stayed in the same professional services industry throughout after recruitment into the initial start-up. Cloned first business and sold the copy for

over £3m to a large industry player. Walked out of an earn-out deal and then lost heavily in an unrelated property business. He returned to professional services bootstrapping a minimally resourced start-up reusing skills and contacts developed in the previous venture.

Case 5. 2 ventures and 35 years as an entrepreneur. One of the case exceptions who was not a serial founder. He inherited a small family business and grew it to the largest distributor and licensor in the UK. Then changed industries and moved up the value chain through an unusual opportunity to acquire a former supplier. The case illustrates differences in acquirer's motives and also the transfer and reuse of special and relevant competencies such as foreign manufacturing, branding and retail management that were successful in developing the first family business to revitalise an ailing business in another industry.

Case 6. 6 start-ups over 24 years. He started young before going to University. Changed industries from car repair (selling the business) to software development in emerging sectors using new skills acquired at university. Used university resources to start-up as he had done while at school. Continued to adapt the central solution and business model from venture to venture moving up the value chain through several ventures to eventually find a successful niche in UK retail. The entrepreneur made a number of innovations from working very closely with customers. Exceptional social skills used to develop his ventures. Mentor helped, providing advice related to transferring to the new industry. Highly creative individual who views the process as a combination of alertness, search, discovery and creation.

Case 7. 4 start-ups over 24 years. Same print based industry through progressively larger ventures exploiting a single technical trend. Started copy of existing type of business and then with the help of a mentor changed to new sector within the same industry to pursue a new technical trend. There was VC involvement from mid-career that had a significant impact on career trajectory and personal wealth. He is using the same approach to find future opportunities and method of VC finance to grow new ventures. Though he is creative he doesn't recognise it. Describes it as the simplification of technologies and customer problems.

Case 8. 2 venture start-ups. 14 year career. In employment learned to found his first venture by copying his employer's business. Used a joint venture to fill gaps in first venture. Following the dissolution of the joint venture and a legal case re-entered the same IT services industry, adapting the business model to a small scale due to resource constraints following failure. Gradually growing to address the original size of opportunity the joint venture was set-up to exploit. Is now focussed on philanthropic not for profit ventures.

Case 9. 6 start-ups to form a portfolio over 28 years starting straight from university. All started in the same industry of popular music gradually changing in scale and scope from local to national. Two highly innovative businesses implementing new technologies that he described as filling in the obvious gaps in product offerings. Now learning how to deal with national competitors after formative years operating in a narrow local niche.

Case 10. 4 start-ups in the building industry. 33 year career. Moved up the value chain from labouring to renovations to manufacturing sophisticated types of building extensions. He simply replicated other businesses and tried to do a better job using his creative talent for design and quality high production methods. He is gradually increasing the size and sophistication of the business taking enormous risks with the assistance of expert mentors and supportive financiers.

Case 11. 4 starts-ups. 29 year career. Learned the relevant skills in employment with the aim of starting his own company once he had learned enough. He operated in the same broad industry related to telephony services but moving from B2B to much larger B2C markets by reusing particular and relevant competencies. Interim period as an investor led to attempts to found unrelated ventures that failed. Again highly innovative, but again did not recognise his own creativity. Had to learn new skills when changed industries. Tempted by international venture in the Americas but wisely declined the opportunity and remained focussed on the UK.

Case 12. Case exception of acquirer and founder, with a 19 year history of multiple entrepreneurship. 2 acquisitions and 1 start-up in different industries but still related by the reuse of common competences in warehousing and distribution. Uses a sophisticated acquisition model learned as a chartered accountant. He used a similar heuristic/template approach to search for new opportunities when starting-up an innovative venture from scratch. Recycled and reused important social capital and recruited former employee as business partner for the new start-up.

Case 13. 7 start-ups. 35 year career as an entrepreneur. Started young, both before and while at university. Same broad industry of industrial production tools with related diversifications to form a portfolio. Several unsuccessful unrelated diversifications introduced by Government agencies. The case illustrates that portfolio entrepreneurs can be tempted by high risk unrelated opportunities and that start-up experience is not enough on its own to ensure success.

Case 14. 2 start-ups. Different industries over 23 year career. First venture uses unique skills and knowledge only available in a very small number of large high-tech firms. Ventures are related through a similar approach to searching for completely new high-tech opportunities. Fundamental customer problems are solved through the development of common industry standards and

technologies where none existed before. Career is built on technical knowledge, but also sophisticated networking and intelligence gathering skills.

Case 15. 6 start-ups. 14 year career in the same broad industry of photographic services and software, including three failures in succession. Following an interlude to complete a degree and recover there was a successful small software venture in a different industry that restored the confidence of the serial entrepreneur. He was approached by a social contact (former house-mate) with similar interests who had run into trouble with his own first start-up also in photography. The serial entrepreneur transferred his learning from several failures including the concept of 'minimum viable product' to make a successful new venture together with his new partner.

Case 16. 5 start-ups over 19 years. Same broad industry of engineering CAD/CAM software related ventures moving progressively up the value chain from a distributorship to large scale international software development. Took a period of employment and incubation of new opportunities following two unsuccessful ventures, the first unrelated to engineering and the second an attempted return to a successful CAD/CAM venture. Illustrates that insufficient learning can stymie an attempt at a mature clone. The break to recover from losses by contracting in another country helped develop several new potential opportunities. One opportunity incubated in employment was started on his return to the UK.

Case 17. 6 start-ups over 14 years in business. Changed to different industries including mental health care. However, all the ventures are related through the application of the same very innovative internet solution and underlying business model. The innovation is highly transferrable and is now used by companies such as Uber. Mixed results from his own diversifications and so he has now returned to the original business using a mature clone. VC involvement from mid-career instrumental in growing the business, and also in his eventual exit from the business he founded before it made an IPO. He continually searched for a similar high growth opportunity to his first successful venture.

Case 18. 5 start-ups. Started a 23 year career by partnering with his mother. Helped start two family businesses before going it alone targeting a growth sector and set out to learn how to start his own company in this sector through employment. Changed industries after a near failure, but started a related venture by transferring the standard solution in one B2B industry to another industry. The standard solution proved to be very innovative in the other context. Later tried to start an unrelated high-tech venture and a foreign subsidiary, both of which failed.

Case 19. 6 start-ups in just 5 years. Pushed into self-employment by redundancy. Started a series of relatively small ventures serving the freelance consultancy industry. Changed industries to youth entrepreneurship education using the same networking and event management solution and business model from his previous ventures. Several businesses with mixed fortunes and is very likely to return to employment in the same sector. His ventures appear to be a series of evolutionary experiments searching for a break-through venture of sufficient quality.

Case 20. 4 start-ups. 14 year career history. Finance, City of London and family business background have all proved useful even if relevant knowledge was not used immediately. Changed from property management industry to internet information distribution through the combination of relevant knowledge of the property sector and an employee turned partner with high-tech skills and a vision of the future unseen by other participants. While moving up the value chain from service supplier to product development he made two unsuccessful but related diversifications brought to his attention by collaborators. The case illustrates how knowledge gaps can be fatal to business fortunes.

Case 21. 3 start-ups. Significant family background in entrepreneurship. Early entrant and now 23 years in the same industry of internet based services. Has been at the forefront of the development of this industry since its inception. Progressively larger and more international businesses. Career helped by very significant VC involvement since mid-career as both investors in his start-ups and as employers in other ventures in the same sector.

Case 22. 6 start-ups over 37 years, the majority in the same broad industry of legal services. He is now considering retirement in favour of his son. Insights gained from investigative services led to innovative document management venture serving the same customer base. Unsuccessful unrelated venture from an opportunity introduced by family member. Returned to same business through a mature clone when the foreign acquirer of his former business changed the then successful business model. Being a significant owner of long lasting social capital he was able to reconstitute the business from recycled resources quickly.

Case 23. 3 start-ups over 19 years. Searched for business opportunity to copy. Following the failure of original business discovered an industry transferable business model that became the basis of the search for the third venture, again with the aim of copying it. Also experienced an unsuccessful venture in a foreign market introduced by a third party. Has sold both successful businesses learning how to negotiate a sale. Retention of minority share in the successful business provided a second source of personal profit when the business was sold again for a second time.

Case 24. 6 start-ups over 30 years. Changed industries into emergent sectors and all ventures related through common skills and experience in farming and small scale construction and engineering projects. She and husband partner innovated customer services in one firm and transferred the approach to a new industry. Series of related diversifications to form a portfolio of firms in renewable energy targeting farmers in the region. Now searching to make unrelated diversifications as renewable energy industry conditions are changing as government subsidies are removed.

Case 25. 2 start-ups. 42 years as an entrepreneur in the same industry moving up the value chain from service supplier to product manufacturer spotting and seizing upon a significant technical innovation at the same time the market was expanding. Also experienced an unsuccessful related venture project in a foreign market. The case illustrates how one innovation can revitalise a traditional sector of clothing manufacture through product innovation.

Case 26. 4 start-ups over 19 years. This case contains another example of innovation by adaptation following a failure. He and his partner copied their employer's business model to make their first start-up in B2B services. The model was adapted following a severe failure where its basic flaws were exposed during a recession. Banks facilitated the restart by writing off debts and providing fresh finance. The entrepreneur encouraged employees to suggest new ideas e.g. new services, in a systematised internal opportunity qualification process. The adapted business model facilitated a start-up to a different industry that was undergoing growth in response to a 'walk-in' opportunity from a young entrepreneur. The more experienced entrepreneur was able to see the meta-connections between the two industries that would allow him to recycle, transfer and implement the same business model from B2B to a B2C industry.

Appendix III Data Gathering and Analysis – The Use of Coding

As detailed and discussed in Chapter 6, the methodology is a pragmatic combination of positive case study and interpretation using grounded theory. The researcher interpreted the subjects' responses in order to glean their relevance for the phenomenon under investigation (Berglund, 2007) in a process similar to the multi-level analysis of critical realism. The researcher then used positivist scientific theory to postulate the existence of objects and relationships which may or may not be directly observable in order to build new theory and/or confirm existing research.

The data gathering phase required the use of constructs derived or synthesised from the relevant literature necessary for answering the principal research question of how the ventures of serial founder entrepreneurs are related to one another. Most of the data had to be gathered within the context of a scheduled and pre-planned 60 to 100 minute interview using a semi-structured format. The interview structure focussed on capturing details of each venture or sub-case, the relationships between ventures and the degree of entrepreneurial recycling between ventures. The interview concludes with an open discussion on the origins of opportunities.

Phase 1. Initial Coding and Data Analysis

The initial coding of the interviews arose from the questions posed in the research instrument, supplemented by the themes and types of data that arose from the actual conversations and discussions. Given below is the list of 53 codes used in the analysis. Those marked with a * are those additional codes derived from the actual responses of the interview. Extracts or summary points were taken from each of the 26 interviews for each of the 116 ventures and labelled using the codes. While, in total there was the potential for 6000 cell entries, some codes were only populated by one or two interviews.

It is clear that the entrepreneurs were willing to discuss each venture at length and reflect on the critical events that affected their origin, development and exit.

Part 1 Background Information

1. Age/Gender*
2. Education*
3. Early Entrepreneurial Experience including family businesses*

Part 2 The Ventures

1. Name and sequence of venture
2. Founding Date

3. Exit Date
4. Peak turnover
5. Peak no of employees
6. Profitability
7. Entrepreneurial Team: Names, roles and relationships.
8. Directly Transferrable Skills, Knowledge
9. The Opportunity
10. Circumstances of Entry*
11. Circumstances of Exit: Sales value, Sales process. Arguments, Fraud and Dissolution*
12. Failure and its consequences*
13. Breaks from entrepreneurship*
14. Bootstrapping from a low resource base*
15. Financing: Own, Banks and Venture Capital*
16. Key Decisions*
17. Objectives*
18. First Mover Advantage*
19. Perception of Risk*
20. Competition
21. Value Proposition*
22. Products*
23. Innovation*
24. Employees*
25. Key Customers*
26. Markets/Market Segments*
27. Business Model*
28. Product Development*
29. Pricing*
30. Suppliers and the Supply Chain*
31. Location/Geographic Area and Accommodation*
32. Impact of New Technology including IT*
33. Environmental Conditions/Forces*
34. Strategies*

Part 3 The Entrepreneurial Process

1. Resources reused from venture to venture.

2. Information acquisition: Search or serendipitous alertness.
3. The role of networks, mentors and advisors.
4. Directly Transferable Resources*
5. A comparison of key activities between ventures including: marketing, sales, recruitment, financial and legal management. *
6. Insourcing vs. outsourcing of key activities.*

Part 4 Looking Back and Looking Forward

1. How one venture is related to others in sequence.
2. Learning*
3. Luck: Bad and Good*
4. The type and origin of opportunities that have triggered venture formation.
5. Discovery: Search or Alertness
6. Innovation and Creation
7. Assembly of Components/Packaging / Jigsaws*
8. Other Businesses*
9. Other Insights*
10. Opportunities not pursued.

A small section of the coding spreadsheet drawn-up from Case 1 is given below in Table iii.1.

Codes	Name	1. Name of Entrepreneur
		Venture 1
1	Age/gender	70 Male
1	School Age Entrepreneur	No
2	Education	Young Chartered Accountant
3	Job Experience	Chief Accountant of ITEL Ltd, but hated accountancy.
4	Entry	Invited to be MD for xx% share.
5	Partner Share	xx%
6	Bring to table	Obviously the finance skills. But more the idea behind it and the drive to implement it. Seemed a bit of fun.
7	Directly Transferrable	General management. Knowledge of City firms as customers.
8	Idea/Opportunity Origin	My idea. 165,000 sq ft building, old Tea warehouse. 4000 sq ft a room. Did two things. 1) Design a box that was exactly 50% of the size of a filing cabinet draw. 2) Put in a caged area. They had to pay £1.75 per sq ft per year. They were paying £20 per sq ft.
		At ABC Company we had rented offices in the City and knew how expensive they could be.
9	Exit	Dispute among the founders
10	Perception of risk	Minimal
11	Profitable	Yes
12	Competition	Do it yourself

Table iii.1 Section of Coding Spreadsheet (Case 1)

Phase 2. Construct Population and Analysis

In the second phase of data analysis the sub-cases of ventures were analysed to determine the relationship between them using the codes and also additional constructs derived and developed from the literature review explained at length in Chapter 6. These included;

1. Venture Entry

2. Venture Exit

3. Imitative or Innovative:

3.1 Degree of Diversification

3.2 Venture Similarity

3.3 Re-use of Prior Knowledge

3.4 Innovation:

3.4.1 Industry Stage

3.4.2 New Product Development

3.4.3 Opportunity Components

Each construct and its constituents could occupy several columns. This second phase of the analysis has 30 columns giving 3500 cell entries. A large number of different pivot tables were produced to examine potential patterns. Most do not reveal patterns with statistical strength such as comparing opportunity alertness or discovery with the innovativeness of the opportunity, suggesting a more nuanced qualitative judgement is appropriate.

A small section of the spreadsheet derived from the interview is given below in Table iii.2 and Table iii.3.

		Similarity							
Venture		Product	Custo mers	Compe tition	Suppl iers	Techn ology	Managerial Skills	Technical Skills	
1	12	1	5	1	0	1	3	1	
2	33	5	5	5	3	5	5	5	
3	27	4	4	4	3	3	5	4	
4	35	5	5	5	5	5	5	5	
5	4	0	1	0	0	0	2	1	
6	26	4	3	3	4	3	4	5	
7	30	5	4	3	4	5	4	5	
8	35	5	5	5	5	5	5	5	
9	34	5	4	5	5	5	5	5	
10	25	3	5	3	4	3	4	3	

Table iii.2 Venture Similarity (Case 1)

Use of Prior Knowledge		
Market	Means	Solution
Customers	End user	Storage
Customers	End user	Storage Formula
Customers	IT Equipment D	Mini computers
Customers	IT Equipment D	Terminals
Customers	#	#
Customers	Vehicle sales	#
Customers	Vehicle sales	#
Customers	Vehicle sales	Leasing
Customers	Vehicle sales	Leasing
Customers	Vehicle sales	#
# none		

Table iii.3 Use of Prior Knowledge (Case 1)

Phase 3. Interpretation and Theory Building

In the third phase all the data derived from the entrepreneur's case study and the results of the sub-case survey now visualised in a set of colour coded spreadsheet entries were analysed and interpreted. This phase had two parallel parts the summarisation of the data using descriptive statistics and across and within-case analysis.

Summary Descriptive Statistics

This part concentrated on describing the sample accurately and critically examining salient patterns. The 2:1 ratio of unsuccessful exits compared to successful exit was scrutinised in detail. This led to the refinement of the exit construct.

Constant Comparative Analysis

Using constant comparative case analysis (Glaser and Strauss, 1967; Strauss and Corbin, 1998), the sub-cases of ventures were grouped into theoretical classifications of alternative modes of venture creation. For example, a high similarity score and a high degree of reuse of prior knowledge suggest that the two successive start-ups are much the same and that the entrepreneur is operating within a narrow corridor. The entrepreneur's case history describes the what, when and how of the sequencing of each venture over their career. For example, a 'clone' is important in understanding how novice entrepreneurs transition to become serial entrepreneurs. Using the analysis construct perspective, a clone has near identical classification to the preceding venture. From the

entrepreneurs narrative, they describe a process of ‘rebooting’, starting essentially the same business again, commonly following a disagreement between the entrepreneurial team that causes the preceding venture to close or fail.

Further venture sub-cases from other entrepreneurs that were started under very similar circumstances were clustered together. The cluster is given a name and the theory begins to build that the circumstances that caused the previous venture to close or fail have a strong bearing on why, how and when the next venture was created. Accordingly, the ventures or sub-cases are now grouped by exit conditions to determine if this factor is significant. This further comparison fleshes out the nature of the ‘clone’ sub-type. Because this sub-type is similar to ‘adaptation’ in second ventures these two sub-types were grouped together.

The same process of across and within-case analysis was used to derive the venture creation paths of third, fourth and nth ventures. Here another similar sub-type ‘mature clone’ was discovered. Similar to cloning and adaptation in second ventures, it was added to form Internal Replication. In this way, by constant comparison, sub-types were clustered into a broad theoretical base that can be tested and enhanced by other researchers. The archetypes are grouped into 4 archetypes or super-types of behaviour.

1) Internal Replication, 2) Internal Diversification, 3) Internal Replication and Transfer, and 4) External Replication.

They are listed below and can be compared with the three super-types of novice venture creation.

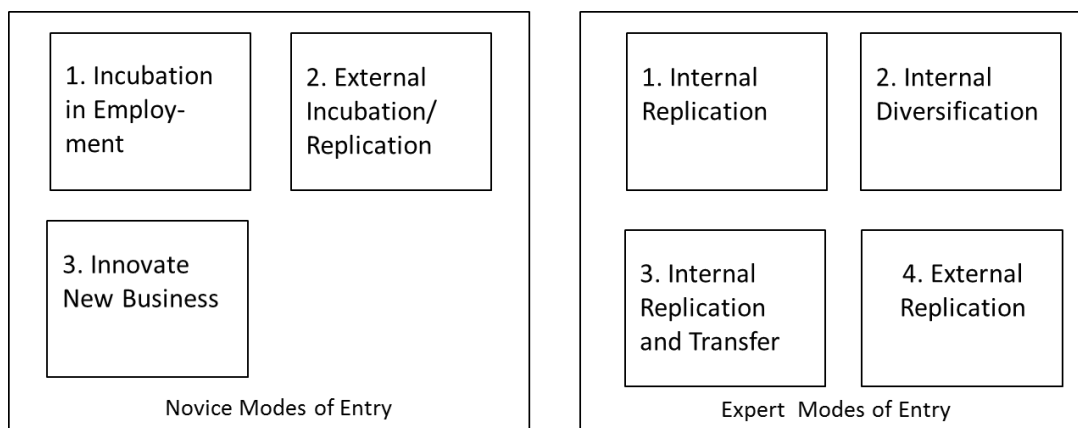


Figure iii.1 (7.11) Novice and Expert Modes of Venture Creation

Further analysis revealed that serial entrepreneurs may create ventures by repeating the same mode of creation in their careers.

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