LIANNE TAYLOR

THE ENTREPRENEURIAL PARADOX

Examining the Interplay between Entrepreneurial and Management Thinking

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Lianne Taylor

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Glossary

ATM	Asynchronous Transfer Mode
CAQDAS	Computer-Assisted Qualitative Data Analysis Systems
CE	Corporate Entrepreneurship
CEDAR	Centre for Enterprise Development and Research
CEO	Chief Operating Officer
CSI	Cognitive Style Index
CF	Conceptual Framework
CTO	Chief Technical Officer or Chief Technology Officer
DM	Decision making
ESDM	Entrepreneurial Strategic Decision making
ETCC	Entrepreneurial Team Collective Cognition
EO	Entrepreneurial Orientation
EOP	Entrepreneurial organizational plasticity
FD	Finance Director
FMCG	Fast Moving Consumer Goods
FAIMS	Field Asymmetric Ion Mobility Spectrometer
HRM	Human Resource Management
GST	General Systems Theory
ICSB	International Council for Small Business
I-E	Implicit and Explicit Cognitions
I/O	Industrial Organizational Psychology
IT	Information Technology
IRQ	Integrated Research Question

ISBE	Internal Small Business and Enterprise
KBV	Knowledge based view
KSA	Knowledge Skills and Abilities
LAIBS	Lord Ashcroft International Business School
LO	Learning Organization
LOC	Locus of Control
LTM	Long Term Memory
LMX	Leader-member exchange
MBA	Masters of Business Administration
MD	Managing Director
MOC	Management and Organizational Cognition
OL	Organizational learning
OpR	Opportunity Recognition
PhD	Doctor of Philosophy
P-O	Person Organization Fit
QD	Quality Director
SDM	Strategic Decision making
SBEF	Science-based Entrepreneurial Firm
S-R	Stimulus-Response
SME	Small-Medium Enterprises
SM	Senior Managers
UK	United Kingdom
USA	United States of America
WM	Working Memory

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Introduction and Context

We know more than we can tell

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Working as an organizational psychologist in academia and practice, I became increasingly aware of the effect of individual differences in thinking and perception, the impact on interrelationships, and the subsequent influence on growth and performance of the organization. However, I found that the differences in cognitive or structural complexity (Kelly 1955), referred to in psychological theory (Baron et al. 2001; Brockhaus and Horowitz 1986; Buehler et al. 2002; Busenitz 1996), did not explicitly inhibit organizational growth and performance in research or in practice. In addition, business and academic literature centered on underperforming or fast-growth organizations, with the result that the interaction of entrepreneurial and senior manager cognition was largely ignored in established entrepreneurial organizations in which the founders were still involved as strategic decision makers with the senior management team. My grounding in classic organizational theory such as lifecycle growth models, psychological contract, systems thinking, and traditional models of management and leadership, provided an intellectual context in which I started to consider the above issues in the

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entrepreneurship environment. In doing this I was able to bring together my knowledge and experience in organizational development theory (Senge 1990; Handy 1995) and cognitive psychological theory to provide insight into the phenomenon. I began to extend my reading to include how interrelationships and information flow link individuals within the organization, and why it forms an integral aspect of organizational growth and performance.

The definition adopted in my research, of the entrepreneur as the founder of a new business and an innovator, is derived from Schumpeter (1934), Cantillon (1734). Consistent with my experience and reading, Schumpeter also drew a distinction between managers and entrepreneurs. My context of the entrepreneurial organization is defined by Knight (1921), who extended the centrality of the individual to organizational theory by focusing on uncertainty, risk, and profit (Collins (2010); Davidsson (2005); Davidsson et al. (2002); Davidsson et al. (2006a, b, 2009, 2010)). While these two economists contributed to research by focusing on economic development and the dominance of the entrepreneur personality developed as an additional perspective from cognitive scientists, psychologists focused on individual differences in personality traits during 1970–1980. It became clear to me that research into entrepreneurial personality was inconsistent and inconclusive across entrepreneurship studies.

The empirical work in this book is evidence of the growing importance of cognition, context, and process-orientated perspectives when investigating entrepreneurs, entrepreneurial organizations, and their interrelationships.

Critical issues in this work are how and why aspects of entrepreneurial cognition affect and interact with senior managers' perceptions in the firm. The entrepreneurial cognitive dualities and paradoxes present a challenge when interacting with senior managers, exposing the differences between them. In the same way, cognitive bias such as entrepreneurial overconfidence distorts decision making and impacts on the senior manager interrelationship. Experienced entrepreneurs have more paths to consider in decision making than senior managers, resulting in bias, some of which cannot be recognized (Russo and Schoemaker 1992) by the individuals concerned.

Entrepreneurial cognition refers to the mental models used to make judgements and decisions, to identify and evaluate opportunities regarding firm growth (Mitchell et al. 2002), and are shaped by their knowledge and experience. Different levels of prior knowledge have a considerable impact on interrelationships in this work and entrepreneur-senior manager subjectivity (Kahneman and Tversky (1974); Kahneman and Tversky (1979); Kahneman et al. (2008); Kuratko et al. (2005); Lee (2000); Miller and Lloyd-Reason (2013); Kor et al. 2007) affects the identification of opportunities. The value for entrepreneurs and senior managers is that a cognitive approach to decision making, opportunity recognition, mental shortcuts, and perceptions of risk (Naldi and Davidsson (2015); Palich and Bagby 1995) can be learned, although the evidence identified some areas of challenge. With this approach, senior managers try to think like entrepreneurs and focus on value creation through exploring and exploiting ideas, although cognitive dissonance and distance can lead to conflict in their interrelationship. Cognitive distance is defined as the difference between the knowledge base of the entrepreneur and senior managers.

As these entrepreneur-senior manager interactions take place in the context of the firm, this interactive process takes into account notable temporal facets and biases of this interaction. While temporal aspects of decision making and general aspects of entrepreneurship studies have been neglected (Aldrich 2009), this study found that the process of time in decision making is salient to the interactions between the entrepreneur and senior manager and noticeably effects their interrelationship. In addition, the nature of this interaction within the context of organizational evolution, development, and growth is considered to be crucial to our understanding.

The intention of this book is to explain the cognitive and interrelational complexities of established entrepreneurial organizations as they develop and evolve from a process perspective, using case studies. The process view is significantly more meaningful in this research because it captures and explains the interplay between the entrepreneur and senior managers in a way that is richly context specific, complex and non-linear. This empirical work is the first to use the interrelatedness between the entrepreneur and senior manager as the unit of analysis in established entrepreneurial firms while considering the individual and organizational level paradoxes.

Cognition in this context is a broad range of mental activities which include perception, sense-making, decision-making, opportunity recognition, biases, the way in which information is identified and categorized, and emotions (Gavetti and Levinthal 2000) and dissimilarity in cognitive levels Nooteboom at al. 2007).

The under-researched nature of established entrepreneurial firms could arise because of the difficulties in investigating interrelationships which are indeterminately related to changing thinking, processes, and context over a period of time. My research acknowledges the importance of gaining insight into established firms, by exploring the frequency and intensity of entrepreneurial events of new products and services and operational models over a period of time with sustainable results.

These established firms are sometimes trapped between the paradoxical need to change and react to demanding time frames, versus favoring established practices and processes. Understanding the psychology of how entrepreneurs and managers think, behave, and interact, helps businesses evolve and avoids the possibility of terminal problems arising as entrepreneurial businesses grow and mature, during periods of uncertainty. The aim is that the evidence and analysis will change practice and contribute community themes of academic enquiry that focuses on the entrepreneurial process.

The investigation of three established entrepreneurial firms include Firm A, which design, develop and test new and existing products and services for the contract pharmaceutical, biotech, and healthcare industries; Firm B, which are specialists in electrical testing, fixed wire testing, portable appliance testing, and periodic inspection; and Firm C, which create new businesses based on advances in technology (digital printing, communications, instrumentations, medical products drug discovery, micro devices, optics software). The entrepreneurs between them had a combined experience of eighty years of entrepreneurial business experience and knowledge.

For the purposes of this work, not only do I focus on the individuals (entrepreneurs and senior managers) in the organizational system but also the systems and processes as a whole presented from the psychological and organizational behavior (OB) perspectives. In this way this work focuses on the interrelational variables such as the entrepreneur, senior managers, and the decisions and opportunities they engage with. Although not an intentional outcome of this work, the evidence of entrepreneurial leadership is significant as it permeates established entrepreneurial firms as they are striving to continue to innovate and grow. Entrepreneurial organizational plasticity (EOP) used for the first time here is thus the ability of these businesses to adapt, shaped by their interconnectivity and interrelationships. Entrepreneurship students, academics, practitioners of entrepreneurship and organizational theorists can benefit from using dual or multiple perspectives when investigating entrepreneurial organizations.

Temporal facets in strategic decision making are inadequately incorporated into research, but are shown here to be important in understanding what, how, why, and when the interplay happens between an entrepreneur and senior managers. Different points of entrepreneurial intensity (Kuratko and Covin 2005) are relative in this study to the interrelationship between the entrepreneur and senior managers.

This dynamic interplay between actors is critical when considering the contextual changes that result from decision making cognitive processes. Their interaction and interplay has moderating or mediating affects on the developing and evolving organizational system.

Adjunct to cognitive and classic organizational research are knowledge and information-flow theories that link individuals within the organization. In this way, the intention of this book is not to focus on the centrality of entrepreneurial cognition or the entrepreneurial organization as separate units of analysis, but to center on 'how' the frequency of interaction and interrelationships affects organizational issues. These include the relationships between the entrepreneur and senior managers and the differences between the senior managers that have an impact on the EOP of the firm.

The cognitive lens is therefore an effective tool capturing the interaction between actors in this context. The starting paradigmatic perspective is that the agent (the entrepreneur) sits within a social context (the organization) in which they influence others, by enacting entrepreneurial cognitive processes. In turn, the social structure has an influence on the entrepreneur, which will affect the way in which the organization grows and performs. The view that these two processes are not mutually exclusive is consistent with my personal and professional experience.

This study of entrepreneurial cognition and established entrepreneurial organizations combines two complex fields with overlapping paradoxical issues. A prevailing view in organizational theory is that mature entrepreneurial organizations and family firms decline once the founder leaves the business. The first paradox is that of the entrepreneurial cognitive duality approach in decision making which has an impact on the interrelationship with the senior managers and subsequent demands on the developing organization. More specifically, the entrepreneurial cognitionattributioncycle and the adaptive new senior manager decision making processes form ambiguous and conflicting interrelationships. The first part of this study investigated how and why entrepreneurial cognition effects the interaction with senior managers' perception in the organization. The impact of growth or decline in cognition-successattribution theory presents some understanding into this entrepreneurial process. Specifically, the ingrained implicit mental representations and entrepreneurial cognitive processes have to have a reciprocal effect in order for senior managers to learn and the organization to develop.

The second paradox, between the entrepreneur as autocratic decision maker (Likert 1967) versus the benefits of shared cognition (Tripsas and Gavetti 2000), is regarded in this research as significant to the ongoing growth and performance of the organization. Insight from this research provides understanding of the impact of imprinting, entrepreneurial tacit knowledge and experience in their interrelationship with senior managers. There are challenges for the entrepreneur in sharing and codifying tacit knowledge for senior managers because it is sometimes inaccessible (Stewart 1997; Smith 2001). The information and knowledge cannot be extracted from the entrepreneur and transferred to the senior manager without a context and differences in experience and cognition add another level of complexity (Nonaka and Takeuchi (1995), Nooteboom (2000), Richmond (1993)). In addition, the entrepreneurial context is unstable, unpredictable, and uncertain and the ability to adapt cognitively makes the transference of tacit knowledge more challenging. This research shows how relevant the entrepreneur-senior manager face-to-face interaction is in this process. The flow of knowledge between the entrepreneur and senior managers is at risk because of misunderstandings, cognitive limitations, and incorrect perceptions of their interrelationship.

The third paradox is the entrepreneur-senior manager future successor relationship which is underpinned by the six themes of incongruence and communication; fear and expectations; and success and learning. The impact of these concepts either has a positive or negative influence on their relationship.

The examples of established firms presented in this book are shown navigating their way through these entrepreneurial paradoxes as managerial control is gradually transferred to potential successors. In this way, the second research question addressed the temporal factors regarding the interaction between entrepreneurial cognition and senior managers. The important temporal phenomena of imprinting decisions, addresses how entrepreneurial cognitive processes emerge, evolve, change, and are communicated over a period of time and are addressed in subsequent chapters. This process-driven lens builds up a realistic picture of how the interrelationship between the entrepreneur and the senior managers change over time.

Continuous-growth organizations suffer from a lack of longitudinal empirical research and knowledge on their internal development processes and interactions that contribute to firm development. Research on small-and medium sized enterprise (SME), although experiencing an increase (Davidsson et al. 2006a, b; Parry 2010) in research, has not considered how entrepreneurs and senior managers in entrepreneurial established firms view business growth and development. Although growth is normally considered a firm level construct, individuals and interdependencies collectively reflect its features (Alchian and Demsetz 1972; Russo and Schoemaker (1992); Sternberg and Grigorenko (1997); Stinchcombe (1965)) and this work is defined by the entrepreneurs and senior managers. Their definition of growth is in part aligned with more generally defined capabilities of market share, profitability, size, and assets ((Koryak et al. 2015) but include contextualized strategic issues such as recruitment, technology, sales and marketing, and manufacturing. The definitions of business growth used in my research reflect what the entrepreneurs perceive as strategically important and central to their organization's growth and success. Growth in my research denotes an increase in amount and size due to internal process of development, where growth is considered as a process and not a static point (Penrose 1959). I agree with Achtenhagen et al. (2010) that the growth literature is fragmented and further academic research is needed to be more aligned with practitioner definitions of growth to create value and impact. This argument is in keeping with my own experience as a business founder and researcher. For the purposes of my study, the concept of established entrepreneurial organizations as continuous-growth organizations is derived from the lifecycle and stage literature (Achtenhagen et al. 2010). Early or high-growth organizations continue to dominate the literature, while continuous-growth organizations are under-researched with little knowledge on the internal development processes referred to by Penrose (1959).

Although many established organizations are prone to failure and decline in maturity, the evolution of the three examples in this book reflect a pattern of evolution and growth that is traceable through the interaction with each other and their respective organizations. By interacting with entrepreneurs and senior managers on a regular basis I was able to keep track of the strategic issues affecting their interrelationship.

The third research question addresses how bias in entrepreneurial cognition affects their relationship with the management team whilst having created significant firms. The paradoxes of the entrepreneurial cognition-attribution-success cycle, the plasticity of the organization (EOP), and the complex interrelationships is in essence the thesis of the book. However, this research recognizes the fluidity of the entrepreneurial environment; it is not suggesting that every organization will, or should have, the patterns reflected in these interrelationships. The focus is specifically on what the firms in this study have done over a period of more than three decades to evolve and develop in the context of their interrelationship, answering the fourth and final research question. This view reflects early configuration theory (Miller 2011) which was lost in entrepreneurial orientation (EO) research that different organizations will behave differently depending on the interaction between the individual parts and the different structures (Mintzberg 1973, 1978). The evidence in this study contributes to the typologies, focused on differentiation which can further be developed on established entrepreneurial organizations and their complex entrepreneur-senior manager interactions. Although a context-specific approach might limit generalizability, the insight provided in this work enhances empirically valid knowledge that arises from established entrepreneurial firms. The most relevant firm-level representation is the multidimensional EO construct which looks at levels of risk-taking, innovativeness, and proactivity (Lumpkin and Dess 1996).

The longitudinal approach shows the plasticity of organizations as they change, and how entrepreneurs and senior managers can benefit from the collective mind to secure the right changes; integrating and transferring entrepreneurial experience, thinking, and leadership with new management approaches. In this way this work contributes knowledge to academia and practice that is empirical and cumulative by providing insight derived from a longitudinal qualitative study. The contextualized findings, offer rich and specific data by adopting a configuration approach (Miller 2011).

The cognition-based perspective has been successful in understanding overall decision making in entrepreneurial businesses (Mitchell et al. 2002). With cognitive science and organizational and management perspectives in mind, six themes underpin the evidence in the interrelationship between the entrepreneur and senior managers and are traceable throughout the book. Theoretical saturation was reached when no new concepts and themes emerged (Strauss 1987) after Set I interviews.

These themes and patterns identified were consistent for the firms

- Incongruence and communication.
- Fear and success of successful strategic decision making and opportunity recognition.
- Learning and expectations.

While these themes are discussed throughout the book, the four interlinking concepts forming part of the theoretical framework and underpinning the arguments presented are:

1. entrepreneurial cognitive processes such as decision making, opportunity recognition alertness and schemas, and the interplay with senior manager perception;
2. temporal issues;
3. cognitive biases;
4. how the interrelationship affects growth and performance.

The six research propositions shown in Table 1.1 are derived from the research questions and form part of the theoretical perspective. These statements reflect the unique aspects of this research and act as suggestions for future researchers to consider and build upon.

1.1 The Practical Significance

The research approach is in line with the earlier 1930s non-reductionist argument (Bygrave 1989) to studying entrepreneurship, which states that individual entrepreneurs operate as part of a complex system in mutual relationships with each other and nature. It is therefore significant for

Table 1.1 Research propositions

Propositions	Source (these represent examples from the literature)
1. Entrepreneurs use different cognitive processes to managers and are more effected by cognitive biases than others but are unware of how it affects their interrelationship and unable to access unconscious thoughts and practices	Busenitz and Lau (1996), Gaglio and Katz (2001), Smith (2001), Mitchell et al. (2002), Busenitz et al. (2003), Tversky and Kahneman (1973), Busenitz and Barney (1997), Baron (1998), Mitchel et al. (2004), Baron (2004a, b), Wagner and Sternberg (1987)
2. Entrepreneurial growth is heterogeneous and evolves over time	Penrose (1959, 1995), (Davidsson (2015)
3. Experienced entrepreneurs use their prior knowledge and prior experience to make decisions and spot new opportunities/develop new patterns (specifically related to tacit knowledge)	Polanyi (1967), Sternberg (1997), Leibowitz and Beckman (1998), Gregoire et al. (2010)
4. Entrepreneurs' timing around decision making reflects their knowledge and experience and is different to senior managers and influences their interrelationship	Tversky and Kahneman (1973), Plous (1993), Bluedorn and Martin (2008)
5a). Sense-making is composed of communication and is a challenge for entrepreneurs in sharing tacit knowledge	Gioia and Chittipeddi (1996), Weick (2009)
5b). Sense-giving is different for entrepreneurs and other stakeholders	
6. Entrepreneurs interact with their business in a mutually reinforcing, interrelated way which is different to senior managers, effecting their inter-relationship	von Bertalanffy (1968), Senge (1990), Covin and Slevin (1991), Markman and Baron (2003), Shepherd et al. (2010), Vaghely and Julien (2010)

entrepreneurs and senior managers to understand the nature and impact of their differences and how this affects the organization. In addition, earlier studies have identified that the frequency of interaction affects the identification of organizational issues (Dutton and Duncan 1987; Thomas and McDaniel 1990). The practical implications of the evidence here is that the senior managers who spend more time with the entrepreneur, not only begin to think like him, but also has insight into why and how decisions were made and opportunities enacted.

The paradox between the entrepreneur as autocratic decision maker (Likert 1967) versus the benefits of shared cognition (Tripsas and Gavetti 2000), are regarded in this research as critical to the organization's growth and performance. In this research entrepreneurs are unaware of how they are perceived by senior managers. Entrepreneurs are alert to new opportunities and the creation of economic wealth, it is therefore considered important that we understand how they use, share and integrate existing information and knowledge with senior managers when making decisions. Understanding these interrelated concepts is also relevant for organizational succession planning and learning. The influences on cognitive interactions, shared cognition, and an understanding of entrepreneurial cognitive success need to be understood, and the limitations made explicit. Von Bertalanffy's (1934) open systems approach to entrepreneurial cognitive processes has wider reach in the organization than Schumpeter's (1934) earlier economic perspectives that have centralized the entrepreneur in generating growth. In this way the practical significance of expert entrepreneurs with an excess of seven years' experience, as defined by Sarasvathy (2008), and their interactions with senior managers can be examined.

This conceptual and empirical grounding is especially significant in entrepreneurial cognition research because of the gap in a systematic and integrated approach to entrepreneurship studies identified by Gregoire et al. (2010). For the purposes of this study the words interplay or interaction are used interchangeably to describe the reciprocal action between the entrepreneur and senior managers.

1.2 The Theoretical Contribution

Entrepreneurs are often known to cognitively construct their worlds based on their own perceptions, which are different from those around them. This involves being alert to new opportunities and making decisions in uncertain and ambiguous environments with little resources. Much is known about the decision making and opportunity recognition (OpR) of entrepreneurs and managers within larger organizations, but little academic research can be found regarding the interplay between entrepreneurial cognition and other stakeholders in small-medium enterprises (SMEs) and larger entrepreneurial firms and its reciprocal effects.

At present, entrepreneurial cognition and bias are disparate concepts with regards to the impact it has on interrelationships with senior managers. Even more disparate are the temporal, growth, performance, and organizational interlinking concepts. By exploring how these interrelationships respond and are affected by each other, these concepts can be linked to form a theoretical foundation for investigation. Mitchell et al. (2007) suggest that the cognitive approach to entrepreneurship is still in its early stages of development and provides an under-researched area to explore the gap in knowledge regarding multi-levels of study. The theoretical gap identified exists today, and justifies the need for this research into the interaction of entrepreneurial cognition on interrelationships, growth, and performance.

1.3 The Relevance of Senior Manager Perception in Organizations

There are widely accepted studies (Miller 1996; Busenitz and Barney 1997; Sarasvathy 2001, 2008) that entrepreneur's decision making and opportunity recognition are the main drivers of growth in their organization. However, in established SMEs, management teams form part of the organization's operational and strategic decision making with responsibility to execute these decisions. Therefore, it is significant for the growth and performance of these organizations to understand the different cognitive processes, expectations, perceptions, and experiences affecting the interaction between the entrepreneur and the management team in executing these decisions. Baron (2004) showed that cognition can affect the success of the entrepreneur and cognition has also been used in organizational studies to change the mindset of senior managers (Gioia et al. 1994). However, the exploration of the interaction between the entrepreneur and senior managers in SME's attracts limited attention in studies of established entrepreneurial organizations (Gregoire et al. 2010).

The significance of senior managers is that they are interacting regularly with the entrepreneur in key decisions within the business. In addition, the entrepreneurial organization is repeatedly producing and delivering ideas and opportunities for new products and services (Jelinek and Litterer 1995: 137) that involve interrelationships with managers, entrepreneurs, and decision makers.

In summary, the book is an effort to provide insight and understanding of evolving established entrepreneurial organizations and the complexities in harnessing and sustaining growth through their interactions, interdependencies, and interrelationships. The chapters include a combination of empirical data and knowledge collected over a five-year period as well as the analysis.

1.4 Summary of Chapters

Chapter 2 (Theoretical Perspectives) briefly explores key entrepreneurial cognition and attribution theories. In addition, interrelated constructs that have previously been restricted to individual-level dynamics and larger organizations in management and organizational theory are reviewed.

Chapter 3 (Methodology and Firms as Cases) uses examples of three established entrepreneurial organizations in an inductive exploratory study in which the founder and senior management are interacting and engaging with strategic decisions. Six themes of interplay between entrepreneurial and management cognition, help to understand the interrelationship dynamic. Interactions with the entrepreneur and senior managers were undertaken every three months and changes in strategic issues tracked.

Chapter 4 (Entrepreneurial Paradox: A Theoretical Framework) introduces the conceptual framework underpinning the research. The biases, temporal, growth, performance, and organizational-interlinking concepts are explored, presenting how entrepreneur-senior manager interrelationships respond, and are influenced and affected by each other.

Chapter 5 (Experience, Knowledge Transfer and Entrepreneurial Learning Experience) discusses the impact of entrepreneurial experience on the transfer of tacit knowledge between the entrepreneur and senior managers. In this chapter the way in which actors and organizations learn or don't learn can mediate or moderate entrepreneurial and senior management interrelationships. Chapters 6, 7, 8 and 9 include empirical data between the entrepreneur and senior managers.

Chapter 6 (The Cognition-SuccessAttribution Cycle) examines the effect of the cognition-success-attribution cycle on the interrelationship between the entrepreneur and the senior management and the consequences for organizational development and evolution. This chapter provides an interpretation derived from the empirical evidence that cognitive diversity as well as differences in perception and expectations have an impact on this phenomenon.

Chapter 7 (Cognitive Dissonance between Entrepreneurs and Senior Management) discusses the cognitive dissonance between entrepreneurs and management and discusses how the entrepreneur's decision making and OpR (opportunity recognition) affected the interaction between the entrepreneur and managers' perception. Characteristics of open systems thinking and change is represented by the interplay of entrepreneurial cognition and management perception.

Chapters 8 (Organizationally Defined Growth and the Interplay with Cognition and Bias) focuses on the organizationally defined growth of evolving and developing established entrepreneurial organizations, in which the entrepreneur is still primarily involved in strategic decision making and opportunity recognition and exploration. The evolution of these successful firms over a period of up to twenty-nine years is discussed and the complexity of the interplay between the entrepreneur and management team provided as examples.

Chapter 9 (Temporality and the Significance of Entrepreneurial Age) focuses on the temporal aspects of when and how entrepreneurs and management undertake strategic decisions that affect growth. The changes and stability of these interrelationships over a period of time underpins the entire book with the focal point of a twelve month interviewing process. The issues of changing patterns in cognition and behavior are explored in Sets I, II and III over this period with all the actors.

The impact of entrepreneurial age of up to twenty-nine years for two entrepreneurial firms studied, and sixteen years for one, are examined by analyzing core growth issues identified by each business.

Chapter 10 (Open Systems Thinking and the Entrepreneurial Paradox) shows how the conceptual framework incorporates the open systems concepts of input, output and transformation in a feedback loop (von Bertalanffy 1968; Senge 1990) that reinforced growth as a system of interlinking parts with mature entrepreneurial organizations. This is a key concept underpinning this work.

Chapter 11 The Complex and Elusive Nature of Entrepreneurial Leadership presents 'charisma' (Schein 1987) as the other aspect of the psychological contract relevant to the interrelationship between the entrepreneur and senior managers in leadership. Classic organizational theories which have contributed to our present day understanding of decision making and organizational behavior are used to analyze the phenomenon. Unexpected findings of entrepreneurial leaderships are presented.

Chapter 12 (Conclusions and Future Research Opportunities) draws conclusions from the evidence, highlighting their contribution to academia and practice. This chapter also introduces research propositions for others to test as hypotheses in their respective contexts in order to extend our understanding of how individual concepts influence each other in established entrepreneurial organizational settings.

Glossary of Terms[1]

Adaptive Capacity The ability of an organization to adapt when the system in which it operates is changing.

Absorptive Capacity A firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends which is increased by having prior knowledge.

Causal Ambiguity The firm cannot determine the causes of performance due to complexity, tacit information, or complex interactions.

Cognition Cognition is defined as the transformation, reduction, elaboration, storage, and recovery of information (Neisser 1967). The use of the phrase 'entrepreneurial cognition' refers to the mental representations or schemas that entrepreneurs use to represent new and existing information, decision-making, and opportunity recognition.

Cognitive Duality The ability of an individual to use both short cut mental representations and linear causal reasoning when making a decision or evaluating an opportunity.

Continuous Growth For the purposes of this study, the concept of established entrepreneurial organizations as continuous-growth organizations is derived from the lifecycle and stage literature (Achtenhagen 2010, Penrose).

[1] A Glossary of terms is provided for consistency and clarity because many concepts referenced have various definitions and interpretations. The following are presented in alphabetical order.

Entrepreneur The use of the term is consistent with Schumpeter (1934) definition as the founder of a new business and innovator, drawing a distinction between managers and entrepreneurs.

Entrepreneurial Process The process approach used by Sarasvathy (2001, 2008) to study entrepreneurial activity captures the interaction between entrepreneurial cognition and senior manager perception in the context of the organization.

Established Organizations Established entrepreneurial organizations are regarded as continuous-growth organizations in excess of ten years and are differentiated from early or high-growth companies (Achtenhagen et al. 2010) in lifecycle and stage models.

Explicit Knowledge Quantifiable and relatively easily transferred and systematically communicated between individuals. It can be captured and is sometimes documented.

Gestalt Psychology The whole is more than the sum of its parts. Developed by German Gestalt psychologists referring to patterns that cannot be reduced.

Growth A significant factor in the presentation of the pattern of growth in this book, is that ongoing growth is defined by the established entrepreneurial organizations. These definitions, by the founder and management team, are considered as contributing to the strategic direction of each business reflecting heterogeneity. In addition, but not central to the empirical data presented, is the traditional assumptions and definitions of growth drawn from academic literature to provide an academic framework.

Imprinting In line with prior work in psychology, imprinting is time-sensitive (i.e., occurs at sensitive stages of life) learning process that initiates a development trajectory (i.e., produces persistent outcomes).

Interplay For the purposes of this study the words interplay or interaction are used interchangeably to describe the reciprocal action between the entrepreneur and senior managers.

Narratives Narratives are constructed stories and accounts of events that are shared to convey meaning between individuals.

Ongoing When concepts such as cognitive processes, interrelationships and growth and/or behavior occurs during a given period of time, or stops and occurs again.

Organizational Climate Shared perceptions of practices, procedures and policies among an organization's actors with regard to these fundamental properties. (Reichers and Schneider 1990)

Paradox Paradox is used here as a set of interrelated concepts that exist at the same time, but persist over a period of time and contradict each other.

Phenomena The phenomena in this work is the observable interrelationship between the entrepreneur and senior management over a period of the investigation.

Tacit Knowledge Socially and culturally specific knowledge that resides and is stored within individuals. Being understood without openly expressing your thoughts.

Temporal Facets Time is given theoretical meaning in this work by defining the points within. There are several examples in the text that reflect the development of changing interrelationship patterns over time.

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2
Theoretical Perspectives

2.1 Introduction

In order to understand entrepreneur-senior manager interplay as the unit of analysis, individual and organizational theory were addressed. In this way the literature and theory discussed in this chapter are derived from entrepreneurship, cognitive science, organizational, and systems thinking literature. The substantive literature on entrepreneurial cognition contributes to our understanding of similarities and differences in information processing, decision making, and opportunity recognition. In addition, the literature that suggests these differences have other influences on the entrepreneurial process is considered alongside the implications for organizational growth and subsequent interrelationships. Furthermore, the literature on the interplay between entrepreneurial cognition and the organizations that are accepted as conceptual models in social science (Mitchell et al. 2007) are examined. A brief background to the historical use of interrelated constructs that have been restricted to individual-level dynamics (Haynie et al. 2010), and larger organizations in management and organizational research in the form of systems thinking (von Bertalanffy 1968; Senge 1990) is considered. By considering

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individual and organizational-level theories a comprehensive exploration of research, identified overlapping concepts and approaches.

2.2 Entrepreneurial Decision Making

Research that has attempted to understand, define and categorize entrepreneurs has dominated literature since the 1920s (Knight 1921; Schumpeter 1934; Kirzner 1973; McClelland 1987; Miller and Lloyd-Reason 2013). Early economic literature defines the entrepreneur as the creator of a new venture (Schumpeter 1934; Low and MacMillan 1988), centralizing the entrepreneur in this process. Others define an entrepreneur as one who searches for, discovers, and exploits fresh opportunities, creating new products and services in order to make them commercially successful (Shane and Venkataraman 2000).

Craik (1943) was the first to introduce the concept of mental models and use cognitive studies in order to understand how people think, behave, and act in an environment. The dominance of inconclusive typologies on entrepreneurial personality officially came to an end with Neisser (1967), who changed the way the entrepreneur was studied by shifting the research from a behavioral to a cognitive perspective. Neisser also concluded that cognitive psychology needed to focus less on linear information processing models and to include the study of perception and behavior. The distinct manner in which individuals process information in order to recognize opportunity brings with it a research debate on differences between entrepreneurs and others in terms of their cognitive or thinking styles. Miller (1987) claimed that analytical cognitive style was risk-averse and that problem solving and decision making was incremental. This was in contrast to a holistic cognitive style, which is less risk-averse, goes beyond the norm of existing frameworks, and makes larger steps in decision making.

The two dimensions of cognitive style index (CSI) have some similarity with Mintzberg's (1978) 'entrepreneurial' and 'planning' modes. He observed growth in an entrepreneurial organization and found different modes of decision making amongst the entrepreneurs and managers. He claimed that the entrepreneur thought in terms of 'sprints' and 'pauses' with regards to growth. By studying the changing growth patterns, he was able to contrast the entrepreneurial mode with the planning mode and showed how entrepreneurs moved adeptly between narrower and broader perspectives. Although the CSI dimensions of intuitive and analytical, and Mintzberg's (1978) entrepreneurial and planning modes are similar in definition, the arguments contradict each other. Through a longitudinal study, Mintzberg demonstrated that because expertise knowledge can reside within the entrepreneur and management by engaging intimately with the detail of products, both are able to switch between entrepreneurial and planning mode. The CSI argument by contrast, positions the entrepreneur in either the analytical or intuitive mode irrespective of product or organizational knowledge.

Knowledge-based theories however, add another perspective showing that a firm's success depends on the ability of the entrepreneur to enhance, share, and integrate its knowledge base distinguishing between tacit and explicit knowledge (Smith 2001).

Cognitive differences were also underscored by Kaish and Gilard (1991), who assessed the number of words, and the length of time that entrepreneurs and managers took to read them. They found that entrepreneurs use non-verbal scanning, and paid special attention to risk cues, while managers focused on the financial cues of the opportunity. However, Busenitz (1996) did not achieve these results with a repeat study on assessing the entrepreneurial alertness hypothesis. Researchers continued to find that entrepreneurs used more heuristic-based (mental short cuts) decision making than managers (Busentiz and Lau 1996; Busenitz and Barney 1997; Mitchell et al. 2002; Busenitz et al. 2005). In other studies, Sarasvathy et al. (1998) used think-aloud verbal protocols to show that entrepreneurs and bankers think and process information differently. However, Markman and Baron (2003) recognized the need for further study into differences like how entrepreneurs use configurations to identify opportunities.

Entrepreneurial cognition research continued to gain momentum between the 1990s and early 2000 as a framework within which to investigate how entrepreneurs think (Baron 1998), and how it influenced communication and action (Baron 2004). The framework is purported by Mitchell et al. (2002, 2007) to be the knowledge structure entrepreneurs use to make assessments, judgments, or decisions for opportunity evaluation and growth. By this definition, the researchers contextualised entrepreneurial cognition within their own unique domain of opportunity evaluation and growth, thus externalizing entrepreneurial cognition. This knowledge is recognized in knowledge-based theory to be largely tacit and original thought is embodied in the founder or inventor (Lowe 2006; Polanyi 1967).

Mitchell et al. (2007) in a special journal review on entrepreneurial cognition, extended the research area by setting research boundaries and clarifying the use of definitions. They firstly examined four approaches that dominated the literature at that time: heuristic-based logic (Tversky and Kahneman 1973, 1974); perception processes and alertness (Kirzner 1973; Kaish and Gilard 1991); entrepreneurial experience in information processing (Mitchell 1996) and effectual reasoning (Sarasvathy 2001). Although the four approaches were different, the authors acknowledged the commonality in the explanations of these approaches.

Mitchell et al. (2007) then considered West's (2007) empirical work in which he developed entrepreneurial team-collective cognition (ETCC) that extends entrepreneurial-cognition research. Mitchell et al.'s (2007) use of innovation and diffusion as a framework to explain the emergence of entrepreneurial cognition was adopted from Rogers (2003) who presented the factors and timeline involved that emerge when a new idea, or product, becomes accepted by a wider audience. The use of this framework by Mitchell et al. (2007) reflects the peer-to-peer nature of academia that Rodgers argued, produced higher levels of diffusion sooner than mass-market discussions of an innovation. In this way, the application of the innovation and diffusion framework to academia offers an insight into how new fields of research become accepted.

Vaghely and Julien (2010) later contributed to entrepreneurial cognition literature by concluding that entrepreneurs engaged in decision making by changing from using information that they have rationally internalized to information that is subconsciously made up through reconstruction. This conclusion fits with the four approaches stated earlier by Mitchell et al. (2007) on the use of information processing in the entrepreneurial experience.

2.3 Rational Versus Effectuation

The rational decision-making model that has been extensively challenged by entrepreneurial cognition researchers cannot describe the realities of strategic decision making (Simon 1959; Allison 1971).

Rational decision making assumes that individuals make rational decisions and behave on purpose (Eisenhardt and Zbaracki 1992). Historically however, the rational model of decision making dominated strategic and entrepreneurial decision-making literature and assumed that choices are made on the basis of the entrepreneur's probability judgments and by maximizing expected utility (Alvarez and Barney 2006; Ye et al. 2008). Effectuation posits a strategic approach which builds on previous research of cognitive differences, that entrepreneurs use very different decision making processes and redraw existing information into new opportunities (Sarasvathy 2004; Wiltbank et al. 2006). Although there are differences in cognition and managers can learn the entrepreneurial approach to decision making, this argument still supports Mintzberg's (1978) earlier claim that the entrepreneurial mode of thinking can be learned.

Although Sarasvathy (2001b) proposed that the causal model of rational thinking does not adequately describe how entrepreneurs actually behave, her study supported other empirical studies by Allinson et al. (2000). Supporting Sarasvathy (2001); Corbett (2002) also found that successful entrepreneurs demonstrated a greater intuitive thinking style versus managers who prefer an analytical or linear approach to information processing and decision making.

Table 2.1 identifies separate schools of thought in entrepreneurial decision making with opposing ends of a continuum over a period of more than thirty years of research.

Table 2.1 Entrepreneurial decision making

Concept	Researchers
Entrepreneurial and planning mode	Mintzberg (1978)
Heuristic and analytical	Allinson and Hayes (1996), Vaghely and Julien (2010)
Effectual and causal	Sarasvathy (2001)
Intuitive thinking style	Allinson et al. (2000), Corbett (2002)
Intuitive and rational; automatic and controlled	Vermeulen and Curseu (2008)
Linear and non-linear thinking	Groves et al. (2011)

2.4 Frameworks for Entrepreneurial Decision Making

Mitchell et al. (2007) proposed that research into entrepreneurs would be enriched by drawing concepts from both entrepreneurship and cognitive research fields. In addition, they argued that any entrepreneurial perception and thinking processes should take place within a context, because an entrepreneur is constantly communicating and interacting with the business. In this way they support Brigham et al.'s (2007) argument that instead of categorizing the study of entrepreneurs, researchers should focus on the interactive relationship between the entrepreneur and their work context.

Entrepreneurial strategic decision making (ESDM) (Vermeulen and Curseu 2008) extends the cognitive determinants criteria for entrepreneurial cognition research suggested by Mitchel et al. (2007), but the two frameworks overlap on the concepts of personality and environment. Although there are many theories on management and organizational decision making, ESDM is seen to be different because of the complexity of the decisions, the uncertainty of the situation, and the time constraints that entrepreneurs experience.

Vermeulen and Curseu developed the triadic reciprocal framework to decision making. This generic cognitive model for ESDM argues that entrepreneurs assimilate information using a two-way process of automatic (intuitive) and controlled (rational) processing or 'dual-processing', also called heuristic and systematic thinking (Baron 2004). The interplay between these two cognitive systems underpin strategic entrepreneurial decision making (Dane and Pratt 2007) and is consistent with earlier studies on entrepreneurial cognitive differences.

Groves et al.'s (2011) empirical study of 219 professionals confirmed part of the argument for the differences between entrepreneurial cognition and non-entrepreneurial cognition. Their study offered support for ESDM that entrepreneurs switched between linear and non-linear decision making processes. The researchers defined non-linear thinking as intuitive, creative, and emotional, and linear thinking as analytical, rational, and logical. They found that the entrepreneurs switched more than actors, accountants, and front- line managers but the same as senior executives.

Another finding was the link between how long an organization was in business and its ability to switch between linear and non-linear thinking, emphasizing the importance of experience and age in cognitive development. Their finding that senior managers and entrepreneurs had similar profiles and balanced linear and non-linear decision making is similar to Mintzberg's (1978) argument that cognitive processing can be learned.

2.5 Temporal Theories in Decision making

Temporal influences on cognition were not considered by the Gregoire et al. (2010) review of entrepreneurial cognition articles, and until recently have been largely ignored (Ployhart et al. 2002; Aldrich 2009; Miller and Sardias 2015). Miller and Sardias (2015) explored temporal aspects of entrepreneurial decision making in early-stage businesses, while entrepreneurs simultaneously navigated their way through conflicting and opposing thoughts. However, as an aspect affecting decision making, temporality has previously only been considered in terms of new venture creation and the entrepreneur's perception of timing with tasks (Bird 1992; Bluedorn and Denhardt 1988; Bluedorn 2002) rather than in other stages such as with established firms.

A study based on Type A-Type B personality models (Freidman and Rosenman 1974) found that the more polychromic the individual, the greater the striving towards achievement and the more extroverted they were (Digman 1990). But few studies such as these investigate how this has changed over time in relation to behavior cognition or growth in established firms. Das and Teng (1997) asserted that cognitive and entrepreneurship research failed to incorporate time as a variable, adding that a framework which includes traits, cognitive factors, and time, needs to be developed.

More recently Bluedorn and Martin (2008) undertook a study into past and future temporal depths of entrepreneurs and noted a positive correlation. They suggested that understanding temporal issues and the importance of time is another way of understanding entrepreneurs and the contexts within which they work. The context has also been considered important by Avolio (2007) looked at in terms of leaders and followers.

Bluedorn and Martin (2008) suggested that there was a gap in research findings with regards to temporal depth and entrepreneurial decision making.

2.6 Opportunity Recognition, Alertness and Cognitive Learning

Another aspect of entrepreneurial cognition was defined by Kirzner (1973) as alertness or the ability to notice without searching, to recognize overlooked opportunities that have not been seen by others, in order to generate economic values such as profit (Baron 2004, 2006). Kirzner suggested that more alert entrepreneurs have more accurate mental models, also called 'schemas', that drive opportunity recognition.

Busenitz (1996) argued that studies of the differences in alertness between entrepreneurs and non-entrepreneurs have produced mixed results and require significantly improved empirical and theoretical research. In this way, Gaglio and Katz (2001) developed a conceptual model of entrepreneurial alertness, hypothesizing that individuals who possess this alertness schema will notice change in the market place, and adjust their schemas accordingly (Foss and Klein 2010). And because of this alertness, Baron (2004) separately argued that entrepreneurs would be able to adapt their mental framework to 'think outside of the box'. Although, how this adaptation process takes place is unclear from their research.

However, studies on the entrepreneur and cognitive processes such as decision making and opportunity recognition do not take into account Festinger's (1957) general theory of 'cognitive dissonance'. He defined cognitive dissonance as cognitive elements that exist when an individual deviates from reality. Festinger also argued that the existence of dissonance would drive individuals to achieve cognitive consonance (Baron 2007) when integrating new information with existing information to make a decision. Not much attention is given to cognitive dissonance in the entrepreneurship literature, but Shaver (in Baron et al. 2007: 336) asserted that it is a reasonable explanation to understand the behavior in failing entrepreneurial organizations. In this way, reactions and interactions between stakeholders in terms of the reduction of cognitive dissonance in decision making can be explained through this theory.

More specifically, Festinger (1957) argued that the factors relating to the importance of the decision, the attractiveness of an alternative decision, and other cognitive elements would determine how stakeholders think about complying with a decision that was made.

The discovery of opportunity is based on experience and information that some people have and others may not have (Baron 2006), and complements the research processes of entrepreneurs (Miller 1981; Nosek 2007; Pervin 1996; Vermeulen and Curseu 2008). In this way, the decision to exploit an opportunity is characterized by individual differences that include cognitive processing and was highlighted earlier (Busenitz and Lau 1996; Busenitz and Barney 1997; Gaglio and Katz 2001; Mitchell et al. 2007).

Baron's (2004) assertion that the cognitive lens is more useful than the economic lens aligns with Gregoire et al.'s (2010) later arguments, and is included in their analysis using the cognitive perspective in entrepreneurship. Baron's (2004) perspective draws attention to the individual's role in opportunity recognition which is distinctly different to the more complex dynamic perspective of entrepreneurial cognition identified by Gregoire et al. (2010).

Information processing is defined as the ability to seek and integrate new knowledge that might influence an individual's opportunity recognition processes (Lumpkin and Lichtenstein 2005). Although they focused on learning, they claimed that entrepreneurs transform information and data into knowledge for the organization in order to increase strategic assets. Vaghely and Julien (2010) also used the insight of information-process theories of algorithmic and heuristic information processing to demonstrate how entrepreneurs identify opportunities. The two main aspects of their framework are first, the algorithmic thought processing, which is categorized by intuition, patterns, and problem solving; and second, the heuristic thought processing which is categorized by sensemaking (Weick 1979), discussion, interpretation, and intuition.

2.7 Cognitive Biases and Heuristics

Cognitive mechanisms such as bias and heuristics influence entrepreneurial decision making in rational and non-rational ways (Eisenhardt and Zbaracki 1992). Heuristics are mental short cuts and a set of decision rules that help decision makers cope with uncertainty (Busenitz and Barney 1997; Simon and Houghton 2002; Sarasvathy 2008; Venkataraman 1989; Venkataraman et al. 1990). Heuristics may also lead to behavioral bias that could result in potentially severe decisional errors (Tversky and Kahneman 1973; Forbes 2005). Fiske and Taylor (1991) stated that bias and heuristics help entrepreneurs to make decisions when they do not have existing schemas. Gilbert et al. (1992) added that by limiting cognitive overload the entrepreneur is able to deal with more information. These arguments support Baron's (1998) assertion that certain conditions lead the entrepreneur to make decisions that are influenced by bias because of limited information processing capacity and the desire to minimize mental effort. However, in support of entrepreneurial cognitive biases, Van den Steen (2004) included optimism, over-confidence, and illusion of control in his model on biases, arguing that when over-optimism leads to failure individuals will often blame exogenous factors, and when successful they will attribute it to their own action. The contradictory findings could in part be explained by Casson (2010) who cautioned that trying to understand the influence of entrepreneurial cognitive bias, one has to consider the methodological implications when collecting data about the decision making processes. These processes could be situationally dependant, and are complex especially when the organizational response is not aligned to the entrepreneur's expectations. Casson's (2010) argument is reinforced by Gregoire et al.'s (2010) assertion that there is a need for stronger conceptual and empirical foundations in entrepreneurial cognition research.

2.8 General Systems Theory (GST)

General systems theory is a concept originally derived from the study of botanical organisms by von Bertalanffy (1968) and later used in organizational studies by Senge (1990). Both offer an explanation of how complex relationships influence each another in mutually reinforcing ways. Systems thinking is an empirical field in which the interrelationships presented, conceptually form a generic and historic platform to explore further dynamic interrelationship models in organizational and entrepreneurial studies. von Bertalanffy argued that a collection of parts with inputs, processes, outputs, and outcomes are interacting in a constant and reinforcing feedback loop. He also emphasized the importance of communication between parts, as being intrinsic, and not as an outside event ensuring the successful operation of a whole system. In turn, the social structure (the organization) has an influence on the entrepreneur, which will affect the way in which the organization grows. These two processes are not mutually exclusive, but do however reflect an on-going interplay. Specifically, von Bertalanffy (1968) argued that if one element in the system were to change, then it would affect other parts or processes within that system. This illustrates the interdependency of parts that is the central tenet in open systems thinking. In this way, interrelationships can result in synergy which is when the whole is greater than the sum of its parts. If the whole is less than the sum of its parts then the result is dysergy. Both outcomes, synergy and dysergy, are determined by the interactions and feedback systems in the organization. Senge (1990) recognized that systems thinking could be viewed as a conceptual framework. He proposed extending von Bertalanffy's model by suggesting that four extra levels operate within a system. Senge saw systems theory as interrelationships rather than linear causeand-effect chains. These four levels or 'disciplines' include patterns, mental models, systems, and events. In this way he demonstrated the transferability of open systems thinking to a business and organizational context that demonstrated the generic potential for organizational analysis of von Bertalanffy's (1968) original application. In support of this mutually reinforcing model, Scheider and Angelmar (1993) argued that individual and collective cognition served as stimuli to change each other which von Bertalanffy (1968) concluded was ultimately self-regulating. In this way, configuration theory is an organizational-level theory that builds on the notion that in order for a firm to perform, there has to be congruence between relationship type, characteristics and business strategy (Mintzberg 1979; Zaefarian and Henneberg 2010). A summary of the interaction and orientation of characteristics are presented in Table 2.1 showing either one way or interactive dynamic models of action between the entrepreneur and the organization. In addition, Table 2.1 clarifies the research focus and specific characteristics that have been undertaken since von Bertalanffy's (1968) open system thinking until Shepherd et al.'s (2010) conceptual model on the entrepreneurial mindset and environment (Table 2.2).

Table 2.2 Interplay models

Model	Author and date	Interactive and orientation	Characteristics
General systems theory	von Bertalanffy (1968)	Whole system	Process of change Interrelated parts Mutually reinforcing
Configuration theory	Mintzberg (1978), Miller and Friesen (1984b)	Holistic Reciprocal Non-linear Multiple	Stable Presence of elements results in predictability Consistent
Entrepreneurial Orientation (EO) Energy Conversion	Miller (1983) Covin and Slevin (1991), Lumpkin and Dess (1996)	Two-way: Entrepreneurial and environment Process orientation Conceptual and empirical	Converts capabilities into products and services for customers Entrepreneurial posture, culture and structure versus financial performance Organizational level perspective Organizational behavior
Entrepreneurial Orientation (EO)	Lumpkin and Dess (1996), Wang (2008)	Multiple dimensions Process orientation Cognitive components	EO Contingency framework Performance is context specific EO and learning organization (LO)
Stage models versus dynamic states	Greiner (1972), Adizes (1979), Churchill and Lewis (1983)	One way/linear Conceptual and empirical	Speculative Personality emphasis at different growth stages

(*continued*)

Table 2.2 (continued)

Model	Author and date	Interactive and orientation	Characteristics
Person and entrepreneurship it	Pervin (1968), Kirton (1976, 1978, 1989, 2003), Kirzner (1979), Chan (1996)	One way Conceptual	Cognitive misfit-dominant style versus work context Style fit to circumstances Interplay between opportunity recognition and social skills
P-E fit	Markman and Baron (2003)	Dynamic/reciprocal elements Conceptual Multiple	Interplay between person and entrepreneurship
Sensemaking	Weick (2009)	Reciprocal exchanges	Entrepreneur and environment Understanding the context Sensemaking Cognitive interdependence between workflow and enactment
Psychological attributes and processes	Shane (2007)	One way Conceptual	Relationship between entrepreneur, opportunity and decision-making Organizational performance emphasis
ETCC	West (2007)	Dual Conceptual	Start-ups Team cognition
Dynamic state	Levie and Lichtenstein (2010)	Dynamic/ interactive Conceptual Multiple	Between the organization and entrepreneur Continuous

(*continued*)

Table 2.2 (continued)

Model	Author and date	Interactive and orientation	Characteristics
Dynamic spiral loops	Shepherd et al. (2010)	Process model Dynamic/reciprocal Conceptual Dual	Positive and negative relationship Entrepreneurial mindset and organizational culture Multiple and reinforcing feedback loops

2.9 Configuration Theory

It was Mintzberg (1978) who developed the notion of configurations as the interplay of strategy, environment, and organizational structure. In this way the constructs that he used overlapped with systems thinking (Miller and Friesen 1984b), but focused on five different internal structures of an organization. The five configurations are the entrepreneurial, bureaucratic, professional, divisional, and adhocracy organizations. Configuration theorists argue that coherence between elements and the presence of some elements can lead to reliable predictions in a configuration (Miller and Mintzberg 1983: 57; Shepherd and DeTienne 2005; Shepherd et al 2007; Simon et al. 2002). Levie (1986) added that the predictability and stability of a configuration would only change during periods of radical organizational change such as in the entrepreneurial organization when the founder retires.

Lifecycle stage models is the idea of using configurations to link context, structure, and performance as a trajectory (Hanks et al. 1994). Although the linear configuration is in contradiction to the interrelated and continuous constructs of open systems thinking, the development model of growth in stages had significant impact in practice in organizational consultancy and research. The lack of empirical basis has been argued by Levie and Lichtenstein (2010), in light of dynamic growth models and configurations that focus on performance and characteristics not previously studied in entrepreneurship. The lack of consensus on linear and non-linear organizational growth in the literature is compounded by the differences of perception between entrepreneurs and academics regarding what constitutes business growth (Achtenhagen et al. 2010; Davidsson et al. 2002, 2006, 2009, 2010; Delmar 1997, 2000; Delmar et al. 2003; Eisenhardt 1989; Gilbert et al. 2006). Although Levie and Lichtenstein (2010) challenged the acceptance of linear models of growth, Achtenhagen et al. focused more specifically on the lack of focus on the entrepreneur's perception of growth which they regarded as relevant. As a result of the findings, they suggested a re-conceptualization of business growth that is more relevant and meaningful for both practitioners and academics. Researchers have now recognized that firm growth is varied and heterogeneous and have focused on what these differences are and how it happens and the consequences of these differences to the organization (Shepherd and Wiklund 2009; Achtenhagen et al. 2010; Davidsson 2010; Davidsson et al. 2015; Mintzberg 1973, 1983; Mintzberg and Waters 1982, 1985).

2.10 Lifecycle Stage Models to Dynamic State Models

Linear lifecycle stage models (Greiner 1972, 1998; Adizes 1979; Galbraith 1982; Churchill and Lewis 1983) dominated up to forty years of research into how organizations transition across stages of growth. However, in a review of 104 models, Levie and Lichtenstein (2010) found no consensus concerning the number of growth stages or the factors that are required in order to progress. The argument that each stage is characterized by single-loop cause and effect relationships (Hornsby et al. 1992, 2002) failed to recognize the dynamic on-going reinforcing feedback loop and the constant interdependencies of organizational factors (von Bertalanffy 1968). In an attempt to address these issues, Levie and Lichtenstein (2010) developed the dynamic state model. Levie and Lichtenstein (2010) conceptualized the potential of an untapped market as 'opportunity tension' by using constructs, relationships, and drivers as a way of challenging traditional lifecycle models. They reflect briefly on the cognitive aspect suggesting that the entrepreneur is driven by 'perceived capability' even when the market does not yet exist. They hint at the temporal aspects of the dynamic model that can change over time in an adaptive system as management expectations differ and individual agendas develop. In this way, the dynamic state model is similar to von Bertalanffy's (1968) open-complex system and the energy-conservation characteristics in Covin and Slevin's (1991) entrepreneurial orientation model. All three of these models, incorporate the organization of resources for the benefit of the customer (Katz and Gartner 1988). Furthermore, their report on empirical assessment of the conceptual models showed little support for the Greiner (1972) or Churchill and Lewis (1983) models for the sequences of growth. On the basis of their research, Levie and Lichtenstein (2010) argued for the replacement of stage theory with dynamic state theory, which focuses on the entrepreneur's drive to grow the organization.

An example of a configuration is Covin and Slevin (1991) who coined the term 'entrepreneurial orientation' (EO) and developed three dimensions – innovativeness, risk-taking, and proactivity to demonstrate how an organization went about being entrepreneurial. They developed EO and the interrelationship between high performance and posture, and the subsequent influence it had on the interrelationships of external, strategic, and internal variables in the energy conversion system. When applied to entrepreneurship, Dess et al. (1997) suggested that configuration theory captured the complex interrelationships of the entrepreneurial orientation of an organization. In the same way that open systems theory captures the whole system, they argue that configuration refers to the notion that the whole is more than a sum of the isolated parts of the organization which von Bertalanffy (1968) regarded as synergy in a system. It was mentioned earlier that the focus on organizational performance and growth are the common threads that link open systems theory, lifecycle stage models, and configuration theory. However, a major difference is that Covin and Slevin's (1991) configuration approach used entrepreneurial behavior rather than psychological personality profiles used in lifecycle stage models as an indicator of organizational performance. A common argument between lifecycle stage theory and EO configuration is that firm size and age are relevant for performance. While

EO refers to processes, practices, and decision making, the empirical findings on the positive relationship between firm performance and EO are still inconclusive and context specific (Lumpkin and Dess 1996; Sue et al. 2011).

Although there is an argument that configuration theory suffers from a lack of meaningful constructs and relationships, (Dess et al. 1993), Lumpkin and Dess (1996, 2001) modified EO by adding two extra dimensions, autonomy and competitive aggression to the model and linking it to the exploitation of opportunities. They regard an organization as being entrepreneurial if it engages in autonomy, innovativeness, risk-taking, proactivity, and competitive aggressiveness. Although their model is based on new start-ups, they hint that if organizations decline to take risks and become 'overly passive' they lose the entrepreneurial edge, but there is no clear suggestion why and how this might occur. While EO provides researchers with a framework to explore an organization's ability to act entrepreneurially and increase performance, Covin et al. (2006) found that learning from strategy affected growth rate. The idea of learning was developed further by Wang (2008) who extended EO by considering how medium-large organizations learn. The findings that a learning organization (LO) mediates the performance of an organization support Covin et al.'s (2006) argument that the need for entrepreneurial organizations to learn from strategic mistakes is more important than in conservative organizations. Based on these findings, Wang (2008) emphasized the importance of future research in EO and LO to consider the age and size of organizations. Although Harrison and Leitch (2005) suggested that organizational learning (OL) is still in its early stage of being adopted in entrepreneurship studies and with little available empirical research, Lumpkin and Lichtenstein (2005) developed a framework that linked OL to the cognitive aspect of opportunity recognition. These qualities are referred to as an organization's ability to create, acquire, and transfer new knowledge and subsequently modify behavior to reflect the acquired knowledge and insight. This modification of behavior is similar to von Bertalanffy's (1968) self-regulatory open system thinking earlier, in which through learning, there is synergy in the organization after any intended change has occurred. After combining OL and opportunity recognition, Lumpkin and Lichtenstein (2005) proposed three approaches; cognitive, behavior, and action. Unlike lifecycle stage theories, their framework includes the cognitive aspects of using new and existing knowledge to develop customer solutions, behavior aspects of streamlining processes, and action to engage with the organization. The cognitive aspect of Lumpkin and Lichtenstein's (2005) model was further developed by Shepherd et al. (2010). They presented an iterative process of multiple feedback loops between mindset and organization culture. Although Shepherd et al. (2010) offered no empirical basis for their model, their conceptual dynamic feedback model attempts to bridge the gap between the individual and the organization arguing that the mindset and the culture equally affect each other. However, the model fails to explain the complex cognitive concepts of the iterative and reinforcing entrepreneurial mindset with the organization.

2.11 Shared and Collective Cognition

Meyer and Dean (1990) found that the lack of a shared perspective between the entrepreneur and strategic decision makers resulted in a lack of appreciation of the suggested strategy by the entrepreneur. Their study suggests that shared cognition enabled the organization to progress with a focus on consistent purpose and actions. Nosek and McNeese (1997) contributed to this view by adding that knowledge sharing and transfer between business members of a team is linked to efficiency and effectiveness in teams and reduced bureaucracy. However, Tripsas and Gavetti (2000) noted that researchers have paid little attention to the interplay between individual and team cognition across organizational hierarchies and dynamic state models. In their study, Tripsas and Gavetti gave consideration to the role of shared cognition and capability with regards to inertia in an established entrepreneurial digital imaging organization. They focused on how the organization adapted from analog to digital imaging, and discovered that an important indicator of success was the relationship between managerial cognition and organizational adaptability. In addition, the absence of shared cognition in Tripsas and Gavetti's study led to management clashes which extended studies on the cognitive differences between entrepreneurs and non-entrepreneurs (Busenitz and Lau 1996; Busenitz and Barney 1997; Mitchell et al. 2000; Sarasvathy 2001; Gaglio and Katz 2001; Corbett and Hmieleski 2007; Covin and Slevin 1986, 1989, 1997) beyond the centrality of the entrepreneur. Although Tripsas and Gavetti (2000) findings support studies on the benefits of shared cognition, the organization successfully made the transition from analog to digital without successfully managing a shared cognitive approach. They argued that the success was due to the lasting influence of the co-founding entrepreneur, but warned of the potential danger to growth of not having shared cognition, given that not all entrepreneurs can have a lasting effect on organizational capabilities and cognition. West (1997, 1998, 2007) contributed to the debate at start-up level suggesting that shared cognition between the entrepreneur and management led to success. He developed the entrepreneurial team-collective cognition (ETCC) model with two key structural properties of differentiation and integration in which the top management team had different cognitive processes. He suggested that a lack of integration of cognition and uncoordinated action across the levels of entrepreneur and management can lead to opportunities not being followed up, potential destruction of the organization, and lack of team motivation. While Ensley et al. (2002) found that relationship conflict amongst top management teams led to reduced cohesiveness and growth, Lim et al. (2013) went further and supported West's finding that too much conflict clouds shared judgment.

2.12 Communication Through Sensemaking and Sensegiving

The notion of making and giving sense in entrepreneurship is largely linked to how the entrepreneurs interpret and translate decision making (Daft and Weick 1984), and the way others interpret information that is communicated to them (Balogun 2003). Given the relevance of the interpretation and communication of information in organizations, Gioia and Chittipeddi (1991) argued that sensegiving is integral to research on entrepreneurial cognition as it refers to an attempt to influence others (Maitlis and Lawrence 2007).

It was mentioned earlier that sensemaking enables people to make sense of information (Nosek and McNeese 1997) and that the flow of information enhances performance (Ensley et al. 2002). In this way, sensemaking is seen as a search for meaning in the on-going collection of information, which can be different for managers and employees respectively (Weick 2009). Weick suggested that in organizing this process, individuals use conversation, text and mutual effort that is intrinsically linked to communication. However, Busenitz. et al. (2003) argued that if knowledge and information is diverging and hidden, then there is limited exchange of knowledge. Yin (2008) claimed that if there was an exchange of accurate information at top management level, then it would be simpler to make sense of and interpret information that could improve performance.

The way in which the entrepreneur gives sense to the organization can be interpreted in a multiplicity of ways, referred to by Weick (1991) as 'equivocality'. Although in the case of Weick's study, it was used to describe a political opportunity possessed by the individual in order to influence the identity of the organization and other stakeholders. In this example, sensemaking and sensegiving explores the psychological processes the entrepreneur goes through when interacting with their environment. The concept of 'testing the water' was used earlier by Mintzberg (1978) to describe the way entrepreneurs make sense of the environment before they dive into an opportunity.

The argument by Weick (2009); Warglien (2002) and Jennings and Greenwood (2003) is that sensemaking can be treated as reciprocal exchanges between the entrepreneur and the environment. Although Gioia and Chittipeddi (1991) argue that the focus of sensemaking has been in establishing organizational identity for leaders within a company. They asserted that research has not focused on the iterative process of sensemaking with regards to performance aspects in the organization. The emphasis on communication was developed further by Taylor and Van Every (2000: 58), who suggested that 'symbolically encoded representations' of circumstances, become actions through interactive talking and texting. They claimed that the level, direction, and type of communication an entrepreneur used would mediate the effect of sensegiving to the business.

Weick (2009) later linked the organization and sensemaking arguing that in order to understand sensemaking, the context within which decisions are made has to be studied. He argued further for cognitive interdependence between workflow and the way it is enacted, recognizing that there was a limited amount of research on how entrepreneurs make sense of the environment and organizational sensemaking. This 'enactment' process is seen to be part of entrepreneurial decision-making (Weick 1979; Busenitz and Barney 1997; Baron and Markman 2003; Busenitz and Barney 1996; Cohen and Levinthal 1990). But as Holt and Macpherson (2010) have argued, little is known of how sensemaking occurs within entrepreneurial conditions.

In more recent research by Mitchell et al. (2011) and Cornelissen and Clark (2010), communication as a mediating effect when influencing the cognition of others has been emphasized. Mitchell et al. (2011) examined entrepreneurial communication with regard to feedback, and maintained that when an entrepreneur received feedback from managers, which they could validate or correct, cognitive differences could be reduced. However, Cornelissen and Clarke (2010) found that the inner thoughts and imaginations of entrepreneurs are not spoken or even necessarily 'speakable'. While there isn't much research on organizational sensegiving, Steier (2000) suggests that the level, direction, and type of communication will mediate the effect of sensegiving to the business. In addition, Gallen (2006) emphasized that the way in which entrepreneurs give sense regarding information, is due to their perception of the information, rather than any variation in the available information.

2.13 Person-Organization Fit (P-O)

P-O entrepreneurship research is concerned with the interplay or interaction between the entrepreneur and the opportunity (Markman and Baron 2003; Brigham et al. 2007). P-O fit builds on empirical and conceptual studies in larger organizations, with little attention being paid to P-O fit in SMEs (small to medium enterprises) (Markman and Baron 2003).

Although P-O fit is defined in both organizational and entrepreneurship research as the match between an individual's knowledge, skills, personality, performance, and job satisfaction (Kristof 1996), the traditional models do not include entrepreneurial cognition.

Although P-O looked specifically at the fit between the entrepreneur and the organization, the model did not discuss 'how' the particular individual aspects of entrepreneurial cognition, for example the ability to recognize opportunities, interacted with the organization. In addition, the relationship between the entrepreneur and the organization is ignored although it does build on individual differences such as knowledge, skills, and ability.

This chapter reviewed entrepreneurial cognition, differences, and ambiguities between entrepreneurs and non-entrepreneurs. However, the inconsistency in the literature in being able to attribute success to entrepreneurial cognition in its entirety means that the context within which entrepreneurs operate has to be taken into account. An examination of the organizational context has shown that there are various combinations of constructs between the entrepreneur and the organization which either support linear, dual, or multiple models of interaction.

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3

Methodology and Firms as Cases

3.1 Introduction

This chapter presents the research strategy and provides the philosophical foundation directly linking the research questions and the data collection process. A unique and important part of this research is the use of a case-study methodology, involving interviews with multiple actors and multiple firms which contextualizes the interactions between the entrepreneur and senior managers using issues that are strategically linked to decision making and growth in the firm. By adopting a longitudinal approach, the interrelatedness and interdependencies between the entrepreneur and senior managers as the unit of analysis, enhances the meaningfulness of the information gathered. Entrepreneur-senior manager interaction has not previously been used as the unit of analysis in entrepreneurship studies of established entrepreneurial firms. The sequence of events and interactions were important in capturing the unfolding interrelationship and the impact on growth of the firm. By adopting this process approach, meaningful, rich, context- specific data was gathered to reflect the complex nature of the relationship between the entrepreneur and senior managers.

Included here are the selection criteria for the firms using email data for triangulation and the methodology employed.

L. Taylor, *The Entrepreneurial Paradox*,
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3.2 Rationale for the Research Approach and Firm-Study Methodology

In order to design the research theoretical perspectives, literature from cognition, management, and organizational literature have been used. In addition, my professional experience as an organizational psychologist, business founder, and academic steered the design of the research questions. As a result the primary research question explored how entrepreneurial cognitive processes, such as strategic decision making and opportunity recognition, interplay with management perception. The three supplementary questions that address the supporting issues are concerned with bias, temporality, growth, and performance. The four research questions were then answered by combining these disparate concepts that emerged from the literature review in a new way to investigate these interrelationships. The research approach is inductive and the conceptual framework provided the format in which the research was designed, the fieldwork undertaken, and the findings were analyzed.

The aims and objectives of this research are best suited to an interpretivist- constructionist ontology which states that there is no objective reality (Krauss 2005). The idea that everyone experiences life from their own perspective, are consistent with this research. This constructivist ontology posits that meaning lies in cognition, and is not external to the individual. The reason for this view is that reality is constructed and interpreted in society by individuals (Denscombe 2007). With this in mind, the most appropriate philosophical position for gaining insight into the interplay between entrepreneurial cognition and senior managers' perception is through a social-constructivist perspective. A constructivist approach also allows for "multiple knowledges" to coexist when there is a lack of consensus (Guba and Lincoln 1994: 113) which is relevant for this research that investigates the entrepreneur and senior manager interaction.

This process approach to the research is part of an ongoing discussion amongst researchers in entrepreneurship who argue that it is the most suitable epistemological approach (Bygrave 1989; Zahra 2007). The inductive approach adopted in this research "will develop and construct theory" (Trafford and Leshem 2008: 97) and is qualitative because it aims to seek meaning and interpretation rather than measurement of the social world (Creswell 2007). In this way, my research takes a phenomenological perspective since it is based on the perception of the entrepreneurs and the senior managers about their interactions and all the bias associated with retrieving the past, as well as my own perception and analysis of their responses.

The research adopted was inductive which Bloomberg and Volpe (2008) stressed, captures the process of interaction and is most suited to firm-study design. As a methodology, firm-study research allows for the analysis of a phenomenon or system that is bound by time or place (Miles and Huberman 1994; Creswell 2007), using multiple-data sources to understand individual and comparative firms (Yin 2008). By using this paradigm I was able to investigate how participants socially constructed their interrelationship through their own point of view in the natural organizational context of the firm.

Indeed, the firm-study methodology and the use of interviews have been used extensively in entrepreneurial cognition studies to investigate individual cognitive differences (Tripsas and Gavetti 2000; Sarasvathy 2001; Vaghely and Julien 2010), EO (Edmond and Wiklund in Landstrom and Lohrke 2010), entrepreneurial communication (Cornelissen et al. 2012), and in organizational and management literature in interplay theories (Mintzberg 1978, 1983). In addition, Dutta and Thornhill (2008) used a firm-study method to understand the way cognitive style affects growth in a business at an individual and organizational level.

And more recently, the need to use firm studies to understand the behavior of entrepreneurs has been suggested by researchers who have called for a mixture of methods to study entrepreneurs and their environment (Gregoire et al. 2010). In other research, Witmeur and Fayolle (2011) used the firm-study method to develop a typology of entrepreneurial growth in four firm studies to show a transition between configurations. They compared these firms against organizational and strategic idea types (Mintzberg 1978) and were able to derive ideal types and matched them consistently with the configurations they observed. In addition, Vaghely and Julien (2010) used ten SMEs as firm studies at the individual level to explore the different forms of cognitive processing that entrepreneurs use to identify opportunities. These studies reflect that the orthodoxy for this type of investigation is a firm-study methodology. Given the wealth and depth of such investigations, this suggests that it is an appropriate and proven mode of enquiry. My decision therefore was influenced by scholarly tradition, custom, and practices in this field.

3.3 Method: Established Entrepreneurial Firms as Cases

The case-study method answers the questions of how and why a phenomenon occurs in the organizational setting in which the interviews take place (Yin 2008). He added that the events in a real-life setting are out of the control of the researcher and can change at any time. For my research, these factors all hold true: How and why the interrelationship between the entrepreneur and the senior managers occurred, and the impact of these factors on each other, were out of my control. The suitability of using firms as cases is further highlighted by Denscombe's (2011) suggestion that as a form of enquiry, considerable detail can be explored in the study of processes and relationships within a setting in which understanding (rather than generalizability) should be the focus of qualitative research. In order to increase our understanding, this research uses propositions as a research platform on which to build interpretative rather than statistical generalization (Yin 2008).

A multiple-firm approach was used in this research because it enabled the use of multiple-data sources and subsequent data triangulation across more than one source (Denscombe 2011). Eisenhardt (1989) suggested that a multiple-firm-study method allows for configurations to be easily seen and replicated, creating a pattern in which theory can be developed. Firms investigated formed two phases. Phase I was composed of nine firms of entrepreneurs and one managing director that allowed me to refine the interview questions. The purpose of Phase I was to assess the suitability of the firms for further exploration against four selection criteria. Three firms were selected on this basis for Phase II exploration of the interrelated relationships and processes between the entrepreneur and senior managers' perception. In doing so, this research followed

Denscombe's (2011) approach that using firm studies means research can discover how several variables affect one another.

The use of a sample of three firms allowed for a longitudinal approach in which interview data could be collected from entrepreneurs and senior managers at regular intervals over a twelve-month period. This provided an opportunity to explore the empirical data for meaning in the interrelationships within each firm and look for patterns in the interrelationships across the three firms and between interview periods. As Yin (2008) argued cross-firm analysis forms an important part of theory development.

3.4 Firm Selection Criteria

Creswell (2007) suggested that firms are selected purposefully in order to meet the specific criteria that were set beforehand. This means that a judgment in selecting firms was used to produce relevant data. Accordingly these firms were not randomly selected, but selected on the basis of distinctive features that aligned with a firm-study approach (Denscombe 2011). The selection of firms took place in two phases. The key purpose of Phase I was to identify firms for further investigation using the research questions as a guide for developing a set of selection criteria. The selection of firms used for Phase I were extracted from the 'Entrepreneur in Residence Network'. As Sanders et al. (2000) asserted, heterogeneous sampling was used so that patterns could be observed across the small sample of nine nine in Phase I. These entrepreneurs were participants in both Phases I (Table 3.1 Firm Profiles) and II of this research.

The ten interviews took place on the business premises of each respondent, and these meetings lasted between 60 and 90 minutes. In the first interview (Firm A) the entrepreneur and senior manager were interviewed. The reason for interviewing a senior manager as well as an entrepreneur in Firm A, was to add rigor to the data- collection process, and to assess whether by interviewing only the entrepreneur, enough data could be collected to answer further in-depth research questions in Phase II. On the basis of the interview with one entrepreneur and one senior manager in Phase I, it was deemed that interviewing only

Table 3.1 Phase I firm profiles

Firm	Tenure	Decision making	Sector-specific focus	Financial growth
A	20+ years	Founder trying to hand over to CEO	Contract pharmaceutical, biotech, and healthcare industries	Involved in business growth, but trying to hand over to CEO
B	10+ years	Founder primarily	Specialists in electrical testing, fixed wire testing, portable appliance testing, periodic inspection	Founder fully involved in business growth
C	20+ years	22 Co-founders 3 remaining	Creating new business based on advances in technology (digital printing, communications, instrumentations, medical products drug discovery, micro-devices, optics software)	One founder acting as Chairman Also involved in business development And leading growth in product and international development
D	17+ years	3 Co-founders	Publishing and consultancy	Grew the business to 25 people Sold the business to Daily Mail
E	50+ years	Son of the founder	Manufactures and supplies standard bespoke temperature controlled laboratory equipment for incubating, shaking, and mixing samples	Took over from his father 9 years ago Involved in management and growth
F	10+ years	4 Co-founders	Technology, software, micro systems	2000 employees by the time they sold the company Sold the business in 1999

(*continued*)

Table 3.1 (continued)

Firm	Tenure	Decision making	Sector-specific focus	Financial growth
G	10+ years	International trade advisor	A members organization for health and life science companies	Regional development agency supporting their international business development activities in life sciences
H	6+ years	3 Co-founder	Makes micro-chip gas sensors, nano-technology	Raised 2 million in 2004, raised 50 million to date Involved in business growth with CEO
I	10+ years	Founder	Specialist recruitment	Opening offices in London, New York and France

the entrepreneur in each firm would provide enough data on each firm to make a decision on which firms to select for Phase II. Each participant was asked a set of questions in order to establish the most suitable fit between each firm and the data required to meet the research questions. The questions were divided into three sections focusing first on background and cognition; second, the organization's sector, size, and growth; and third, interactions, communications, and relationships within the company and temporal aspects of these interactions. In order to select firms that met the specific criteria, clear boundaries needed to be set. This was achieved through applying four selection criteria:

(i) *Level of Interaction with Senior Managers*

To qualify for further investigation in Phase II, the entrepreneur had to have daily interactions with senior managers with regards to decision making and opportunity recognition in the business. The senior managers referred to in this study interacted constantly with the entrepreneur. They have been chosen because of their regular interaction with the entrepreneur on decision making and issues pertaining to growth and performance of the organization. Other senior managers were excluded because they were not involved interactively in this process.

(ii) *Participation in Decision Making with the Entrepreneur*

This study investigates the way in which the entrepreneur made decisions in an interactive way and how senior managers perceived the communication. For this reason, the entrepreneurs and senior managers needed to participate in the decisions about issue domains. Issue domains for each firm create a boundary within which specific organizational issues could be explored in context. Additionally, they focus the interactions on strategic decisions rather than dayto-day operational decisions. Exploring decision-making interactions regarding issue domains between the entrepreneur and senior managers allowed themes to emerge, develop, and unfold.

(iii) *Participation in Opportunity Recognition for Growth with the Entrepreneur*

The way in which entrepreneurs interacted with senior managers with regards to opportunity recognition, forms part of the research questions. Entrepreneurs are constantly looking for new opportunities and coming up with new ideas, finding and seeking new information, and connecting the dots that others around them don't see. However, empirical research investigating the interaction between entrepreneur cognition and senior manager perception with regards to this entrepreneurial process is currently limited. Baron (2004a, b) identified the importance of spotting new opportunities in order for organizations to grow, and my conceptual framework explained this interplay with entrepreneurs. Two years later, (Baron 2006) extended this view by suggesting that in developing entrepreneurial organizations, managers are also taking part in spotting opportunities, but feel the frustration of not knowing how entrepreneurs go about it. Data in the three firms in this work was collected from the entrepreneurs and senior managers to show how the entrepreneur in each firm approached spotting opportunities and communicating the process interactively within the context of identified issue domains.

(iv) ***Growth, Development and Access for Twelve Months***

For the purposes of this study it was important that access to all the entrepreneurs and senior managers was possible for a period of 12 months. There were three reasons for this. First, the type of entrepreneurial cognition and bias that interplays with the senior managers' perceptions is ongoing. Second, the temporal aspects of entrepreneurial cognition and third, the context within which the interactions took place extended beyond one point of data collection. In order to capture the interaction, entrepreneurial decision making and opportunity recognition with senior managers had to be in the present and not retrospective. The senior managers' reactions associated with entrepreneurial bias and the reciprocal response communicated to them, had to be explored in the relevant time frame in order to capture the interlinks and interdependencies. In addition, the temporal aspect of entrepreneurial cognition such as decision making and how senior managers perceive this interrelationship forms part of this investigation. Changes within the context in which entrepreneurial decision making and senior managers' perceptions take place are also regarded as having an impact on the interplay. For this reason, a longer period to explore these interrelationships was essential for this study. The result of this selection process can be seen in Table 3.2.

Based on the results in Table 3.2, Firms A, B, and C were selected for further investigation.

The profile of the entrepreneurs and senior managers' interviewed in Phase II are presented in Table 3.3. The purpose of this Phase was to collect and analyze data that could answer the research questions. The three firms selected for Phase II data collection committed to the interview process for twelve months and identified individuals they interacted with

Table 3.2 Summary of Phase I criteria for further investigation

Firms	Interaction with senior managers	Decision-making	Opportunity recognition	Access and financial growth	Meets criteria for Phase II
A	Daily	Yes	Actively	Founder involved in business growth. Accessible	Yes
B	Daily	Yes	Actively	Founder fully involved in business growth. Accessible	Yes
C	Daily	Yes	Actively	Founder involved in business development And leading growth in product and international development Accessible	Yes
D	No	No	No	Grew the business to 25 people Sold the business to Daily Mail. Not accessible	No
E	Limited	Partly	Actively	Took over from his father 9 years ago Involved in management and growth. Limited accessibility	Limited available time

(*continued*)

Table 3.2 (continued)

Firms	Interaction with senior managers	Decision-making	Opportunity recognition	Access and financial growth	Meets criteria for Phase II
F	No	No	No	2000 employees by the time they sold the company Sold the business in 1999. Not accessible	No
G	No	No	Actively	Growth from 6 people to 75 people. Not accessible	No
H	No	Yes	Yes	Regional development agency supporting their international business development activities in life sciences. Not accessible	No
I	Limited	Joined with other founders	Yes	Raised 2 million in 2004, raised 50 million to date. Involved in business growth with CEO. Not accessible	No
J	No	No	Yes	Opening offices in London, New York and France. Not accessible	No

Table 3.3 Phase II firm profiles

Firms	Tenure	Strategic decision-making	Sector-specific focus	Financial growth (opportunity recognition)
A	20+	Founder trying to hand over to CEO and management team	Contract pharmaceutical biotech and healthcare industries	Involved in business growth, but trying to hand over to CEO
B	10+ years	Founder primarily and management team	Specialists in electrical testing, fixed wire testing, portable appliance testing, periodic inspection	Founder fully involved in business growth
C	20+ years	Founder and management team	Creating new business based on advances in technology (digital printing, communications, instrumentations, medical products drug discovery, micro-devices, optics software)	One founder acting as Chairman Also involved in business development And leading growth in product and international development

regularly in the management team. The number of senior managers interviewed was between two and five per firm, and their involvement was agreed with the respective entrepreneurs.

Table 3.4 summarizes the senior managers who were selected by the respective entrepreneurs as individuals with whom they interacted most often regarding decision making and opportunity recognition. Phase II interviews took place every three months in Set I, II, and III depending on the availability of the entrepreneurs and senior managers.

Empirical data from the entrepreneurs and the senior managers was collected using semi-structured interviews.

Table 3.4 Entrepreneurs and senior managers interviewed

Date and sets	Firm-study	Participants (entrepreneur and senior managers-SM)	Title
Set I, II and III	A	Entrepreneur	Founder
		SM 1	Managing director
		SM 2	Finance director
		SM 3	Operations director
		SM 4	Quality controller
Set I, II and III	B	Entrepreneur	Founder
		SM 5	Marketing coordinator
		SM 6	Financial controller
Set I, II and III	C	Entrepreneur	Founder
		SM 7	Managing director
		SM 8	Group manager
		SM 9	Group manager
		SM 10	Senior project leader

3.5 Phase I Firm Selection and Phase II Data Coding

This section presents a descriptive account of the nine firms in Phase I derived from the interviews of entrepreneurs and senior managers, and the analytical data coding process. Direct quotes are shown in italics to represent the thoughts and perceptions of the entrepreneur and senior managers from these interviews.

The analytical data process took place with entrepreneurs and senior managers from three firms identified to categorize the empirical data into meaningful concepts. The selection criteria for the entrepreneurs and senior managers and the data coding process for Phase II are presented next.

Firms A-I Selection

Table 3.5 below illustrates a synopsis of the nine firms used in this research. In Firms A, B, C, E, G, H, and I, the founders were still strategically involved in the business, and interacted with the management team. In order to meet the objectives of the study, entrepreneurs and senior

Table 3.5 Synopsis of Firms A-I

Firm	Tenure	Sector-specific focus
A	20+ years	Contract pharmaceutical, biotech and healthcare industries
B	10+ years	Specialists in electrical testing, fixed wire testing, portable appliance testing, periodic inspection
C	20+ years	Creating new business based on advances in technology (digital printing, communications, instrumentations, medical products drug discovery, micro-devices, optics software)
D	17+ years	Publishing and consultancy
E	50+ years	Manufactures and supplies standard bespoke temperature controlled laboratory equipment for incubating, shaking and mixing samples
F	10+ years	Technology, software, micro systems
G	10+ years	A members organization for health and life science companies
H	6+ years	Makes micro-chip gas sensors, nano-technology
I	10+ years	Specialist recruitment

Note: The shaded area represents the three firms selected for Phase II interviews. Using the four selection criteria identified, the following section presents the findings and the decisions for further investigation

managers had to have regular interaction over strategic and operational decisions regarding the organization's growth and performance.

The tenure of the firms ranged from six years (Firm H) to fifty years (Firm E), although in Firm E, the entrepreneur took over the family business from his father forty years after start-up.

Firm A Profile

Firm A is a privately owned organization employing approximately 72 people, which services the pharmaceutical, biotech, and healthcare industries through attracting and fulfilling contracts for clients. These services include chemical and physical analysis of pharmaceutical products, identifying the chemical composition of packaging used, and developing new chemical entities into pharmaceutical products. More recently, the organization had invested in a manufacturing suite to enhance their subcontracting offer to clients and increase their market share.

Three entrepreneurs originally founded the organization and were actively involved in decision making. The entrepreneur interviewed is the chairman who had a partial role as the managing director (MD) while trying to hand over the MD role to the senior manager, who had been with the organization for several years. The second co-founder, the entrepreneur's wife, is the finance director; the third co-founder is the quality director. Other members of the entrepreneur's family worked in the business: his son, who is the business developer had worked for ten years in the organization, and his brother-in-law is a project manager. The organization appears to have a socialist culture, in that everybody is treated equally, with no special benefits for executives such as company cars or private health insurance. The organization did not own any intellectual property and operated a consultancy model, charging their time to clients rather than selling products. The incoming MD considered it to be a people and products-based business, rather than a manufacturing business. However, unlike some other service-sector organizations, they operated in a heavily regulated environment. Because of these regulations, several processes had been implemented which were subsequently monitored and controlled both internally and externally. The MD highlighted that he and the entrepreneur had a similar cognitive process and approached decisions in a similar way even though he noted differences in their background. He mentioned that the entrepreneur followed a technical and commercial route before starting the organization, while he gained experience by working in sales and marketing before joining the company.

Entrepreneurial Interaction with Senior Managers

The MD mentioned that he interacted and managed the relationship with both the entrepreneur and the organization. He sometimes found this to be a challenge, because of the twenty-years' experience that the entrepreneur had in building it. Although he was aware that there were differences in experience, he was not conscious of the impact this had on his relationship with the entrepreneur.

Senior Manager (SM)

> *That's something that we're going through this year, it's something that (the entrepreneur) and I are just sitting down now and talking about, some of the different options.*

The senior manager felt that the entrepreneur did not manage the relationship with him, and that succession management was clearly a difficult aspect for the entrepreneur.

SM

> *Obviously you wouldn't hand over your baby after 20 years and say there you go, you look after it now and get on with it. I think again it's quite an interesting situation to manage, it requires management of both the founder and the company.*

However, the SM did feel that he had actively made a steady impact on the company in the five to six years since the entrepreneur first handed him the role of MD. It was clear from the interviews with both the entrepreneur and the SM that they communicated daily, and that further exploration of the issues they discussed, such as succession management, manufacturing, and recruiting would provide a rich environment for Phase II investigation.

Entrepreneurial Participation in Decision Making

The second criterion, derived from the research questions, was to assess if the entrepreneur was still involved significantly in the strategic and operational decision-making process. Both confirmed that they were interactively engaged with this process.

Entrepreneur

> *So it is really then around your pricing strategy, right from understanding how much work you can get done in a day. So there's a lot of work in the front end to get that planned efficiently.*

The senior manager viewed himself, rather than the entrepreneur, as being responsible for the success of certain aspects of the organization's growth. There was constant interaction between the entrepreneur and the SM with regards to driving things forward in the organization. This was regarded by both as a key interaction.

Entrepreneurial Participation in Opportunity Recognition

At the time of this interview the organization appeared to be experiencing significant change and growth. Firm A's growth was defined as productivity, the number of employees and consultancy time sold to clients. Because of this approach, the senior manager felt that growth was restricted and increasing growth quickly would be a challenge.

MD

> *I think there's an interest in how you change pace of growth. Can you do it in a company that is mature? You know you can step up the mark to growing at 50% a year or 100% a year, or does the size of the company become naturally limiting at some point? In order to grow they have to be more efficient, and increase productivity.*

He defined growth as the achievement of client satisfaction, which he regarded as his contribution to the organization. Both the entrepreneur and MD constantly mentioned that the organization needed to change in order to grow.

Entrepreneur

> *So it's a transition for them as well that they need to be moving on and moving upwards in terms of their thinking and what they are doing. It's been very positive so far, we've grown by getting on to nearly 20% this year…looking to do the same again next year.*

Firm A showed that the entrepreneur and the SM interacted daily with regards to decision making and looking for growth opportunities.

Availability of the Entrepreneur and the SMs

In Firm A, the entrepreneur and senior managers were available to discuss major operational and decision-making issues. This offered the level of interaction that was needed for the research in Phase II. The organization was also changing as a result of the global recession that started in 2008 and was still in a state of change. This environment provided several opportunities to explore the reciprocal dynamic between the entrepreneur and SM as they worked through these changes and challenges.

After the interview with the entrepreneur and the senior manager, I decided that Firm A was a suitable for Phase II exploration.

Firm B Profile

Firm B is a privately owned organization founded in 1993 by the entrepreneur to assist clients with their responsibilities under the Electricity Work Act 1989. They are specialists in Health and Safety Compliance Services, which include testing on portable appliances, electrical goods, emergency lighting, fire alarm, and maintenance and detection services. The organization had a network of over 100 field-based engineers working in over 35,000 locations throughout the UK. The engineering team was supported by a further 40 staff in management, planning, administration, and sales. Contracts with clients of all sizes, ranged from small one-off contracts to individual national contracts. It was still managed by the entrepreneur, who was the predominant decision maker, working alongside the senior managers.

Entrepreneurial Interaction with the SM

The entrepreneur in Firm B interacted with the SM in a selection of ways depending on the strategic or operational decision that was required. Depending on how the business operated, sales conducted, standard of operations set, and relationships with clients were undertaken, he would be actively involved and claimed to be aware of what was going on.

Entrepreneur

> *They can see the line between how the business operates, how (I) operate, and the standards I expect to follow and everybody else to follow.*

The entrepreneur expected a reciprocal type of interaction in the way he wanted to be treated. He believed that people needed to be managed and pulled "into line from time to time", because they forgot to "do the basics" and didn't work as fast as he did.

Entrepreneur

> *I expect people to treat me how I treat them and vice versa. I think it's…I don't think I'm, I don't think I'm as demanding as people think I am. But people would say I'm quite demanding of them. But I think I also give a lot, I expect a lot, but I also give a lot in all aspects of life, without demanding something in return, but I'm probably in some ways I expect something in return. If I'm putting a lot of effort into something I expect someone to also put the same effort into the other side so that it balances.*

The entrepreneur believed that the business was fundamentally about people and relationships, but argued that he still needed to "clamp down" from time to time even though he was more passionate about these relationships, than he was about the business. He felt that the external relationships with customers formed a key part of their business and he therefore interacted constantly internally and externally looking for new opportunities to grow the organization. This made the organization suitable for Phase II investigation.

Entrepreneurial Participation in Strategic Decision-Making

The entrepreneur was the key decision maker in this organization and was actively involved at all levels of the decision-making process. Although he had a management team he could share the decision-making process with, the entrepreneur saw himself as the one who enforced decisions in order to instigate change and make progress.

Entrepreneur

> *I think business generally, especially if they have been set up by the principle, they go through a very rapid learning curve and that there is a constant change as the company grows. And it's how you manage that change and manage the*

> *people within that dynamic and actually getting people to understand we need to make… we need to go forward, and that we constantly ask them to do new things which they maybe not used to. So they are constantly not comfortable, they are constantly at the edge of their comfort zone.*

He saw himself as a mentor or coach who needed to set high expectations for SM to deliver, by pushing them to meet their potential. Even though he didn't enjoy the process of pushing people, he was very active in decision making and challenged senior managers when they had made a decision. The interaction with SM in decision making made the organization suitable for Phase II study.

Entrepreneurial Participation in Opportunity Recognition

The entrepreneur was very focused and involved in ensuring an efficient sales process in order to increase sales and maintain good customer satisfaction. He regarded the sales process as having a positive "knock-on" effect which affected all other departments in the organization.

Entrepreneur

> *If you do actually get on the telephone and see if they receive it and overcome objections and follow up, funny enough, you get the sales. And then that has another effect, because things are buoyant suddenly the engineering department is busy, the sales department is busy.*

He believed that the relationships with customers, as well as strong business principles would grow the organization, and the higher salaries enjoyed by senior managers was evidence of this. The growth activity confirmed the organization's suitability for Phase II firm-study analysis.

Availability of the Entrepreneur and the SM

The entrepreneur was very aware of time and its value and made reference to it throughout the interview. He appeared to encourage staff to use their time effectively.

Entrepreneur

Once you get a process in place and you get systems, policies procedures that people can follow, it speeds up the effectiveness of the business, it means that we produce more within a limited time, within a shorter time frame.

He agreed to take part in Phase II of the research, as he was interested in the outcome, and enjoyed using his time to do different things outside of the business.

Firm C Profile

Firm C is an independent employee-owned organization founded in 1987 initially by eight co-founders. Two founders were still actively involved in various aspects of the business. The entrepreneur in this research is the MD for one of the organization's operating subsidiaries, of which he is also part Chairman for the umbrella organization itself, of which the other founder is part-time Chairman. The core competence of the business is in creating new businesses based on advances in technology such as digital printing, communications, instrumentations, electronics and sensors, micro-devices, medical products, drug discovery, micro-devices, optics software, and systems. The organization developed and commercialized these various technologies and products for a wide range of markets and worked closely with global clients. The culture of the organization was innovative and creative, with mostly informal communications between all levels of the management and employee teams. At the time of this research there were three hundred and fifty employees divided into seven groups each with a Group Head, and separate portfolio of clients, products, and development work. The organization regarded recruitment as an important strategic advantage and focused on recruiting commercially-minded, highly talented individuals.

Interaction with the SM

The entrepreneur interacted with Group Heads across the seven groups. He was also responsible for global relationships in Japan, Korea, China, America, and Europe. His daily interactions were with the senior manager who was in the process of taking over the CEO role from the entrepreneur. His weekly and monthly interactions also involved other Group Heads in both formal meetings and informal communication when issues needed to be discussed.

Entrepreneur

> *I'm also Managing Director of the – partnership which was the original sort of incubator/contract arm of the business. So I'm still Managing Director of that. I do have a deputy who assists with that so, erm, so I split my time between the group, and that business.*

Interactions were usually driven by the SM, who wanted feedback from the entrepreneur with regards to decision making, or challenges they faced.

Entrepreneur

> *The ideal form of leadership management is where you're more or less invisible. Um, actually, it's sort of light touch, doesn't mean disconnected. I tell my people that report to me, I expect them to know everything that's happening within their business.*

He preferred to lead from the front, but found it increasingly harder now that he was MD, and more hands-on with regards to the operations of the organization. However, the majority of his interactions involved aspects of the culture, values, and ethics, while he was trying to hand over the strategic decision making to one of the SMs who was interviewed in Phase II. These interactions made the organization suitable for Phase II investigation.

Entrepreneurial Participation in Decision-Making

The entrepreneur was involved in decision making in both his role as MD and chairman, interacting with Group Heads throughout the process.

Entrepreneur

> *..it's not independent, you know, so it does rely on collaborating with other people, it's not a strategy of collaboration, if you like, but each bit of the business can, well…it's small enough that people can see and be seen, and hear and be heard, take responsibility, feel involvement, and decide we're going to do this.*

The entrepreneur preferred not to make any decisions, which he believed should be made by the senior managers, but instead encouraged them to take ownership and make decisions independently of each other. He would encourage this process by asking them questions rather than giving them the answers. During this questioning process, the senior managers produced decisions themselves which they communicated to him. He believed that part of the delegation process was to exercise judgment in a situation when a senior manager made a decision, rather than dictate what should be done. Additionally, the element of trust between the SMs himself, enabled a decision to be made quickly without waiting for a committee of senior managers to get together first. This interaction made the organization suitable for Phase II investigation.

Entrepreneurial Participation in Opportunity Recognition

The entrepreneur's role in looking for new opportunities had changed from following up on sales opportunities, to more strategic networking, development and design opportunities through long-term relationships. The front-line sales opportunities and responsibilities had been transferred to the senior managers in his group and across to the other groups. His interactions with SMs involved him asking the right questions regarding discussions about opportunities and strategic decisions. He believed that by asking the right questions, the individual and organization could be successful.

Although the entrepreneur was no longer directly involved with selling, he interacted with and managed the SM, who was still growing that section of the business in China.

Entrepreneur

> *We were the first people in China, who were forming a bridge to China, so that people in the West could develop a product, and have it manufactured in China, satisfactorily. And um, and so we've been out in China while it's all been growing and things like that.*

The entrepreneur was also actively involved in ensuring that various parts of the business continued to grow by not targeting the same markets.

Entrepreneur

> *I sort of initiated, I guess, it's situations like that where it sort of falls to me to resolve the situation. Um, so actually what we did we reviewed the strategy of this business, and it stopped doing that bespoke stuff and focused on its core business.*

The organization did not have a formal long-term strategy for growth because they were constantly searching for and finding new opportunities and innovating according to the changes in the environment. The interaction between the entrepreneur and the senior managers made the organization suitable for Phase II study.

Availability of the Entrepreneur and the SM

The entrepreneur was very aware of time, and regarded time as "running out". I received agreement and commitment from the entrepreneur to interview him and four SMs. The senior managers were selected by the entrepreneur on the basis of the most interaction he had with them. He was fully involved in the recruitment process and met everyone who was interviewed, which was one of the regular interactions with the senior managers that the entrepreneur wanted to explore in Phase II of this research.

Firm D Profile

Firm D is a publishing organization founded in 1989, and which was sold several years later by the entrepreneur because she felt that her personal goals and values were no longer being met. They grew from a UK

Cambridge-based publishing organization, to an international publishing organization when their clients began using the internet to source information and conduct research. The core competence of the business was to sell consultancy and system installations to larger organizations and university departments. They also provided international recruitment services and research anywhere in the world for fast-moving consumer goods (FMCG) clients. Because the entrepreneur had sold the organization, she no longer interacted with any senior managers, or participated in decision making, and opportunity recognition. The firm was therefore not suitable for Phase II investigation.

Firm E Profile

Firm E was an independent, privately owned company, founded in 1952 to manufacture and design equipment for sample preparation, scientific analysis, data acquisition, and data analysis, as well as providing solutions to the global scientific and industrial markets. The entrepreneur took over the business from his father, after having had his own business for fifteen years. He is the MD and responsible for transformational change in the organization from manual systems to computerized systems and processes. His strategic plan to modernize the organization had taken nine years, rather than the estimated five years he had anticipated. The organizational transition led to severe challenges for the entrepreneur, who wanted to grow quickly by increasing the company's market share, product range, and turnover. However, because of the extent of the internal challenges, neither he, nor the organization was able to take part in Phase II of this research. The time required was too demanding for the entrepreneur, and an exploration of the interactions with his SM would have led to further tension in an already strained relationship. Therefore, further investigation into Firm E was not possible.

Firm F Profile

Firm F is a Data Communications organization that became the leading developer of ATM (*Asynchronous Transfer Mode*) data network in Cambridge and Pittsburg, USA. The entrepreneur was initially responsible for the finance and business strategy, including raising venture capital. He then ran the software engineering group, building it up to a team of 200 engineers eventually being responsible for technical strategy as the Chief Technology Officer (CTO). In 1999, when it employed over 2000 employees and had annual revenues of over $600 million, the organization was sold for $4.5 billion. The entrepreneur continued as CTO until April 2000.

The entrepreneur was no longer involved in the organization, and was now an active angel investor and mentor to start-up businesses in the UK and US. In September 2001 he co-founded, and was currently Chairman of an investment group of seasoned technology and bio-technology entrepreneurs who invested in and mentored technology start-ups in Cambridge, UK. Since 2002, the group had invested nearly £10 million in over twenty technology and bio-technology businesses, mostly based in Cambridge, UK. Firm F was not suitable for further investigation because the entrepreneur met none of the four criteria.

Firm G Profile

Firm G is a member's organization for health and life science organizations, designed to facilitate collaborations between academic organizations and research institutes. It is a notfor-profit company set up to facilitate better links between the organization and the industry. They had a bio-incubator arm and an agenda to feed the government's investment strategy. The entrepreneur became the regional international trade advisor for bio-technology and the pharmaceutical industry, working for UK trade and investment in 2005 before running the organization. Firm G now consisted mostly of service-sector organizations in medical biotechnology, medical devices, contract research organizations, technical service providers, design consultancies and commercial service providers. Although the entrepreneur assisted and communicated with entrepreneurial organizations, she did not have senior managers as employees, and was not involved in decision making or opportunity recognition for growth within an organization. On this basis, as a member organization, I decided that this firm was not suitable for Phase II exploration.

Firm H Profile

Firm H is a university spin-out nano-technology organization founded in 2005 and run by three young entrepreneurs who are still full time employees in the organization. Their products were used around the world in numerous industry sectors for the detection and analysis of chemicals. By using leading-edge nano-fabrication techniques, the organization had developed a complete chemical detection system on a very small chip called 'Field Asymmetric Ion Mobility Spectrometer' (FAIMS). The chip had the ability to monitor a broad range of chemicals rapidly at very low quantities with high confidence.

The organization had raised \$50 million from start-up and operated with forty employees in both the UK and USA. Their product range had extended to the development of gas sensors for the detection of toxic gases and industrial process control where instruments were used to detect contamination in food and beverage products. The research and development part of the organization is based in Cambridge, UK, and the commercially focused part is based in the USA. Firm H met three of the four criteria for Phase II of the research. The entrepreneur interacted daily with SM on decision making and recognizing opportunities for growth, but was unable to commit to twelve months that was required for Phase II. The entrepreneur travelled extensively to the USA and had limited time due to tight schedules which made this firm unsuitable for inclusion in Phase II.

Firm I Profile

Firm I is a privately owned global specialist recruitment organization focused on the Service Sector, Museums and Heritage, Sports, Aviation and Airlines, and Hotels and Hospitality. In eight years the entrepreneur and senior managers had grown the organization into eight companies within the group with offices and employees in the UK, USA, Qatar and France. Within the Sports sector, their recruitment operations were being undertaken in China, South Africa, Mauritius and Brazil. They were the first company to win a contract with the Qatar Museums Authority, and their contracts in Qatar were a significant part of their growth. The entrepreneur resided in the South of France, and even though he was willing to take part in Phase II of the research, the timing and logistics of travelling were too expensive and challenging. On this basis, Firm I was not selected for further investigation.

On the basis of the above selection criteria three firms were selected for Phase II as presented in Table 3.6.

Table 3.6 Three firms in Phase II

Firm	(i) Interaction with SM	(ii) Decision-making	(iii) Opportunity recognition	(iv)Financial growth	Meets criteria for Phase II
A	Daily	YES	Actively	Founder involved in business growth	YES
B	Daily	YES	Actively	Founder fully involved in business growth	YES
C	Daily	YES	Actively	Founder involved in business development And leading growth in product and international development	YES

In these three firms the entrepreneurs interacted daily with the SM on strategic decision making and recognizing opportunities for business development. Each entrepreneur committed to the length of time for Phase II interviews and recommended senior managers who could participate.

The empirical data collected from these firms was collected through semi-structured interviews and then analyzed. In developing theory, Baxter and Jack (2008) stressed the importance of the business context. In this way, issue domains regarded by Maitlis and Lawrence (2007) as setting the context have been used but called strategic issues because it is more reflective of the growth aspects. For the purposes of exploring the interaction between the entrepreneur and senior managers, issues that were of strategic importance to the business's growth were identified by the entrepreneur as domains in which they individually or collectively made decisions. All further inclusion of issue domains in this research refer to the work of Maitlis and Lawrence (2007). The three firms resulting from the selection criteria used in Phase I are represented in Table 3.7 with the issue domains identified by the entrepreneur.

The relevance of each issue domain to the data collected and analyzed is explained in more detail in subsequent chapters.

3.6 Rationale for a Longitudinal Approach

A longitudinal approach was undertaken in order to capture strategic issue changes over time and across each firm in Phase II. The opportunity to spend 12 months with each firm allowed me the time to use multiple methods to gain insight into how these psychological processes and interactions between the entrepreneur and the SM in the organization worked. The temporal aspect is a key feature of the entrepreneurial process, especially cognitive processes and is integral to the research design. The flow of events over time is characteristic of qualitative research in which researchers can see what happens chronologically (Miles and Huberman 1994), and capture the changes in decision making and interactions within a context.

While the temporal aspect is considered in this research to be an advantage, there are distinct disadvantages as well, noted in cognitive research. The thinking processes of individuals can change and distort perspectives over time (Mitchell et al. 2002). The temporal contextual boundaries of this research are set however, and consideration of these potentially changing perspectives are explained in the section on data triangulation in terms of the reliability of the data from multiple participants. In longitudinal research, once saturation has been reached then a decision has to be made regarding the further collection of data. For example, Lincoln and Guba (1985) highlighted that data collection should stop once data sources have been exhausted, and little extra information can be extrapolated regarding the phenomenon and when

Table 3.7 Firms A, B, C and issue domains

Name of firm	Issue domains/strategic issues
Firm A	Manufacturing Succession Recruitment
Firm B	Sales and marketing Recruitment Technology
Firm C	Recruitment Business development Strategy and vision

categories have been saturated and firmly established. For my research, data saturation was reached after Set III interviews with the entrepreneur and senior managers at the end of 12 months and a total of 39 interviews in 62 hours in Phase II. This was achieved by asking the same set of interview questions each time, and exploring changes of how and why regarding the issue domain if they did occur. The time-line for the data collection is presented in Fig. 3.1.

3.7 Semi-Structured Interviews

Semi-structured interviews are best suited for this research because of the flexibility to skip over some questions if the issues had already been answered in order to ensure the flow of the interview. In contrast, structured interviews are based on a set of standardized and identical questions. The formality and lack of flexibility within interview settings made this system inappropriate to explore how the entrepreneurial decision making was perceived by the SMs.

The semi-structured interviews in both Phases I and II, were electronically recorded, transcripts were typed up immediately after the interviews, and discussed with participants to check for accuracy. Transcribing the audio recordings of interviews took between three and eight hours, depending on the length of each interview and the quality of the recording. Although this was time-consuming, it meant that I could also identify themes for the next set of interviews during this process.

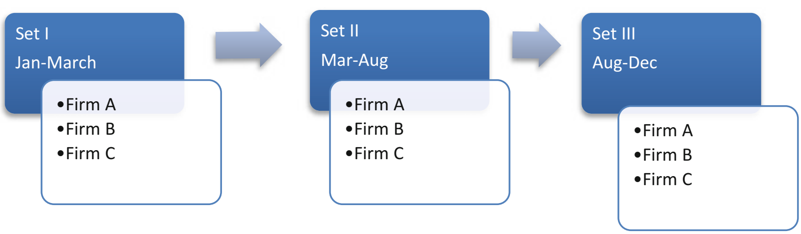

Fig. 3.1 Phase II data collection time-line

Open-ended questions were used which enabled participants to elaborate further on issues (Denscombe 2011; Easterby-Smith et al. 2009) that were derived from the research questions, literature, themes identified earlier, and my own experience of working with entrepreneurs. The transcripts of Phase I entrepreneurs and senior managers were emailed to the entrepreneurs and senior managers to be checked for accuracy. The transcripts were agreed and returned without any modifications, which suggested that the recording and content of the interview was accurate. Phase II semi-structured interviews were developed with the use of the research questions, literature review and conceptual framework. The questions focused on four conceptual areas;

1 entrepreneurial cognitive processes such as decision making, opportunity recognition alertness and schemas, and the interplay with senior managers perception;
2 temporal issues;
3 cognitive biases;
4 how the interrelationship affected growth and performance.

This data collection process allowed me to explore how the entrepreneurs and SMs felt, thought, perceived, and experienced these concepts.

The entrepreneur and senior managers received transcripts of the interviews before the next interview. During this interview process any changes and inconsistencies were discussed so that inaccuracies could be corrected. This process was repeated for each set of interviews. An advantage of interviewing over a period of 12 months was that I had the opportunity in interviews to check my biases and correct my assumptions through the data collection and analysis phases.

I recognize the limitations of using semi-structured interviews because of their retrospective aspect. However, my research accounts for memory failure and attribution biases by asking participants the same open questions and the email data collected reflected the communication between the entrepreneur and the senior managers. The data from entrepreneurs and SMs with regards to issue domains captured any similarities and differences of why and how these interactions happened over the period of Sets I, II, and III interviews.

3.8 Email Data as Triangulation

Yin (2008) recommended using different sources of evidence in firm-study research rather than a single interview or document in a way that the lines of enquiry converge in a process of triangulation. In my research, the email data of interactions falls within Patton's (2002) definition of data triangulation. In data triangulation, different data sources corroborate the same phenomenon to give a richer appreciation of meanings than might appear in the analysis of data that was collected from one source or in one format. The use of email data in qualitative research methodologies is a recent action that has grown considerably since the increased use of the internet in business, providing data that was not previously available (Denzin and Lincoln 2000; Wakkee et al., in Neergaard and Ulhoi 2007). Wakkee et al. suggested that the interpretation of email data is confirmed with the email sender to ensure accuracy and understanding.

This research used data triangulation from SM interviews, internet sources, and email as multiple sources (Easterby-Smith et al. 2009). Email data was collected from Firms A and Firm C at the end of twelve months of interviewing. The email data reflected communication with regards to ongoing issue domains discussed in the interviews with the entrepreneur and SMs. An advantage of this form of electronic data is that new and old interactions between the entrepreneur and SMs that would not normally be collected in a one-hour interview could be obtained through electronic sources. Additionally, the richness of using email as a qualitative data source provided levels of instant feedback and the use of natural language between the entrepreneur and the senior managers. I read the email data for exchanges of information and knowledge to check for accuracy in the data collected in the interview. Using these electronic interactions, I was able to supplement the data by finding words and discussions that created a fuller picture of the phenomenon discussed faceto-face. The issue domains were used to search the emails for any convergence or divergence from the interaction. In the analysis process, I was able to integrate the data when comparing the interactions between SMs and the entrepreneur. If the email confirmed and supported interview data, it was incorporated into the categories coded in Nvivo 9 and if the email challenged the interview data then another category was formed for analysis purposes.

3.9 Cognitive Maps

Cognitive maps were first used in psychology by Tolman (1948) as a cue to access mental representations of everyday phenomenon in the form of a drawing. In my research it was used as part of the data collection process in Set II interviews. Klein and Cooper (1982) used cognitive maps in this way to represent entrepreneurial knowledge. I found that each cognitive map assisted in the accurate overview account of the entrepreneurial cognition and interaction processes. After drawing the map, I used it in Set III interviews as a way of presenting Set II data I had collected to the entrepreneurs. By drawing the cognitive maps using the entrepreneurs' words I was able to clarify their words and their meanings during the interview. The process of talking through the cognitive maps with the entrepreneur allowed more detailed data to be collected for each issue domain, and avoided premature assumptions about what was happening in each business (Miles and Huberman 1994). Cognitive maps were only used in semi-structured interviews with the entrepreneur in each firm, and not the Sms due to the available research time. During and after the interviews with entrepreneurs over their cognitive map, field notes were taken in order to pursue further, and question differences between each set of interviews.

The cognitive map in Fig. 3.2 served as a tool to confirm the evidence previously collected from the entrepreneur and provided a graphical 'snapshot' of the whole interview. By showing the entrepreneur the map, I was able to confirm the processes that lead to certain decisions and interactions with the senior managers. When the entrepreneur studied the map, he was able to follow the connections and triggers that led to a particular decision and either added, confirmed, or disputed the information. If the entrepreneur disputed my account of his thinking process, I would use the map to explore if there was another link that was missed and amend the data in my analysis.

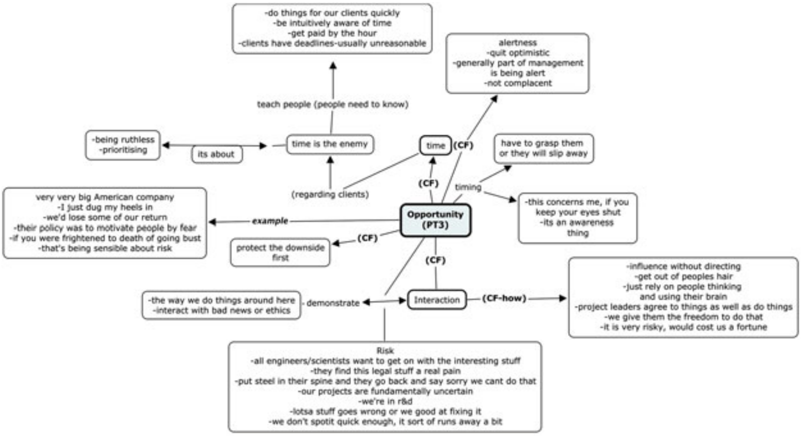

Fig. 3.2 Cognitive map for opportunity recognition

Following the collection of data through semi-structured interviews and email, Nvivo9 was used to code the empirical data in the first part of the analysis.

3.10 Data Coding

Coding is the process of examining the raw qualitative data in the form of words, phrases, sentences, or paragraphs and assigning codes or labels. The qualitative data was coded using a computer-assisted qualitative data analysis system (CAQDAS). Welsh (2002) stated that QSR Nvivo9 could store, prepare, organize and analyze complex data by the following. There is some discussion that the use of CAQDAS introduces distance between the researcher and the data. However, it is not possible to code and analyze data without complete emersion and re-reading the transcripts (and other texts) through thoroughly and consistently. Part of the categorizing and coding analytical process is to make decisions about what is important, or what is conceptually relevant to the phenomenon being investigated and a computer cannot make these judgment decisions (Tesch 1990). For this research, CAQDAS is only regarded as a form of assistance in the theoretical and analytical process and does not replace my interaction with the data. The data coding process included both inductive and deductive coding.

First and Second Stage Coding

Nvivo9 was used to code both interview and email data, which is a deductive coding process. This was followed by an inductive process called open coding (Corbin and Strauss 1990: 181), looking for themes and categories which resembled the grounded theory approach of discovering, naming, and categorizing phenomena. The terms used in this first stage of coding were derived from several sources of data such as verbatim words and phrases used by participants and those terms that are used in entrepreneurship, cognition, and organizational literature. The email data was manually coded rather than using Nvivo9 to avoid the frequency of words being regarded as more meaningful than those less frequently used. At this stage of the data coding, axial coding, which selectively looked for relationships and connections between themes and words was used.

3.11 Data Coding in Phase II

The interview transcripts were read several times to identify common themes. The first step in the email coding process was to upload all email data into the Nvivo9 folder. The second step was to read through the final list of codes developed from the axial coding processes of the interviews. The third step was to read through the emails and select relevant words and phrases, which fitted into the labels and categories generated from the open and axial coding processes. A manual process of highlighting the relevant text from emails was used, taking into account the frequency of the same word in the conversation. In this way, both the frequency and relevance of the words were taken into consideration in the analysis. Email data was only available for Firms A and C. Sixty-two hours of recorded data were collected from undertaking the Set I, Set II, and Set III interviews.

3.12 Summary

This chapter focused on the methodology used to explore the interplay between entrepreneurial cognitive processes and senior managers' perception. In order to achieve insight into why and how this happens, an interpretive approach with a firm-study methodology was used. Phases I and II of the methodology were described and the selection criteria of the firms were then discussed.

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4

Entrepreneurial Paradox: A Theoretical Framework

4.1 Introduction

This chapter draws on entrepreneurial cognition and organizational literature in order to provide a map for the empirical work to be undertaken. The purpose of the conceptual framework in this chapter is to make explicit the decisions to examine particular relationships regarded as important, that in turn affect the kind of data to be collected and analyzed (Trafford and Leshman 2008). I do not consider it sufficient to study entrepreneurial cognition as a single phenomenon, but need to examine their interrelationships with their closest senior managers in the context of the firm. The links between the individual level concepts and organizational level are presented here in order for the interplay to be examined in a systematic way. The decision to select particular concepts are recognized to be subjective (Anderson et al. 1999) and are my representations of the relevant factors that affect the interrelationship between the entrepreneur and the senior managers. The view adopted here is that when investigating established entrepreneurial firms, the objective of the firm to continuously add value through understanding and operationalizing their interrelationships is critical. In this way

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the integration of entrepreneurial experience and new senior manager thinking can encourage entrepreneurial action in the firm.

This chapter discusses the theories underpinning the conceptual framework, the components of the conceptual framework and the limitations thereto.

4.2 Underpinning of the Conceptual Framework

The literature reviewed demonstrates strong empirical and conceptual support for the differences between entrepreneurial cognition and non-entrepreneurs (Kaish and Gilard 1991; Busentiz and Lau 1996; Busenitz and Barney 1996; Sarasvathy et al. 1998; Mitchell et al. 2002a, b; Busenitz et al. 2005; Sarasvathy et al. 1998; Baron and Markman 2003; Miller and Droge 1986). However, the influence of these differences on entrepreneur and senior manager interrelationships and shared cognition is limited. In order to understand how differences in entrepreneurial cognition interacts with senior managers' perception, organizational theories are used in conjunction with individual level theories. The examination of the literature revealed that conceptualization of the interplay between the entrepreneurial level of cognition and the organization level of analysis was found to be limited. In this way, a combination of elements from individual and organizational level theories has been used to form the conceptual framework.

An individual level theory by Vaghely and Julien (2010) concerned with the algorithmic-heuristic duality in entrepreneurial information processing highlights entrepreneurial cognitive differences and gives information on the conceptual framework. The reason for the selection of their theory is twofold. First, Vaghely and Julien's (2010) model builds on previous research that emphasizes the differences in entrepreneurial cognition and non-entrepreneurs' cognitive processes (Busenitz 1996; Gaglio and Katz 2001; Mitchell et al. 2002a, b; Groves et al. 2011), giving it an empirical and validated foundation. Second, the model is comprehensive in the dimensions that it represents from the influence of intuition biases (Tversky and Kahneman 1974; Busenitz et al. 1997) and patterns in algorithmic thought processing (Vermeulen and Curseu 2008) to sensemaking (Weick 1979) and intuition in heuristic thought processing (Mintzberg 1978; Groves et al. 2011). These concepts are all relevant to the research questions in this study.

Although the relationship between entrepreneurial cognition and time is not often explored in the literature, time is considered important to the cognitive aspects of opportunity recognition and in regard to an organization's growth trajectory (Kirzner 1979; Korunka et al. 2003) and decision making (Miller and Sardais 2015). This conceptual framework is developed on the foundation that interrelations between the concepts of entrepreneurial cognition, bias, temporality, and communication affect growth and performance on a continuous basis.

Miller (1992) developed the Icarus Paradox to interpret the success and failure of corporate organizations in a confidence-success-attribution cyclical model. He argued that success reduced the entrepreneurial incentive to learn. In my study the metaphor includes entrepreneurial cognition and bias such as the over-confidence bias also witnessed in the cognition-success-attribution cycle. This moderate adaption of the Icarus cycle is developed on the research assumption that entrepreneurial cognition is affected significantly by bias and senior managers are not. The evidence showed that the entrepreneur had experience in building a successful organization, and the cognitive aspects and bias contributed to that success. However, this work focuses on the context within which this success occurred, specifically how their communication with their closest senior managers contributed to their knowledge and information acquisition. The paradox referred to by Miller (1992) is that the more successful the entrepreneur, (the closer to the sun Icarus flew), the more the success went to his head and he ignored advice of those around him or her. As a result, Icarus flew too close to the sun which resulted in disaster. The metaphor implies that an entrepreneurs' success will impede their judgement and potentially, their organizations will decline. Elements of this entrepreneurial experience can be witnessed in the evidence that has been given, but more important to this work are temporality and the interaction between organizational factors and senior managers in established entrepreneurial firms. Attribution theory (Heider 1958) underpins this paradox and captures the idea of how individuals perceived events (external attributions), thoughts and behaviors (internal attribution) and to what their attributions were made. In addition, attribution theory was used to illustrate that entrepreneurs and senior managers in the firms attributed entrepreneurial success to entrepreneurial cognition, and failures to external sources. Notwithstanding Rotter's (1966) locus of control, which, at an individual level, argued that entrepreneurs were more likely to have an internal locus of control and attribute failure to themselves more than most others.

The psychological perspective focuses on the centrality of the entrepreneur and needs to firstly consider the rationale and assumptions based on the individual level concepts deemed relevant to this investigation. These are presented in Table 4.1. These concepts emerged from the conceptual perspectives discussed earlier in the review of the literature and are now been used in a different way to build the theoretical position of this study.

At the organizational level, the original EO constructs emphasized different organizational contexts that would influence risk taking, innovation and proactivity (Miller 1983). EO was originally informed by Mintzberg's (1979) structure and strategy according to the configuration and size of organizations. This firm-level construct assesses how entrepreneurial the firm is by considering these three concepts and is the most useful framework with which to understand the entrepreneurial nature of the firms used in this study. This emphasis on configuration is core to most of the EO research which emerged primarily from the strategic management literature, and is also the underpinning view in this work. Miller (1981, 1986, 1987a, 1996) and Miller and Friesen (1978, 1984a) and Miller and Le Breton-Miller (2005, 2006) have argued that

Table 4.1 Rationale for constructs contributing to theoretical underpinning

Concepts	Rationale
Entrepreneurial cognition	Differences in cognition (Vaghely and Julien 2010)
Entrepreneurial biases	Affects entrepreneurial cognition (Kahneman and Tversky 1979; Baron 1998)
Temporality	Interwoven relationships and entrepreneurial characteristics modify the organization over time (Korunka et al. 2003)
Communication	The ability to give sense and make sense affects performance (Weick 1979)

EO studies should focus on smaller number of firms so that typologies can be developed (Miller 2011a). The evidence from Firm A, B, and C contributes towards typologies on size, age, and sector of established entrepreneurial firms.

Lumpkin and Dess's (1996) developed the EO model and added competitive aggressiveness and autonomy. By including these concepts, their model informs the organizational level of this conceptual framework, and further links it to organizational theory. The EO dimensions of autonomy, innovativeness, risk taking, proactivity, and competitive advantage represent the entrepreneur as well as the organization. The focus of the interactions in the EO model is primarily on performance and the positive influence of risk taking that Cantillon (1734) regarded as central to the entrepreneur. Although in strategic decision making, participation was found to have a moderating effect on EO affecting performance (Covin et al. 2006). This means that Covin et al. (2006) found that when senior decision makers use autocratic and non-participative methods to make major operating and strategic decisions, it has a positive effect on growth. This finding has important implications for this research because the evidence in Chap. 11 The Complex and Elusive Nature of Entrepreneurship Leadership shows the autocratic nature of entrepreneurial leadership regarding decision making and the flow of information in Firms A, B, and C.

Following on from these assumptions about the relevance of interactions of decision making and growth, the selection of this model to underpin my conceptual framework can be summarized in five points;

1. the model has interrelated multi-dimensions of EO and organizational factors such as strategy-making processes, firm resources and top management team characteristics. Therefore, as a mainly empirical body of research the effect of the concepts on each other can be explored;
2. the EO dimensions can vary independently (Scholhammer et al. 1982);
3. further research opportunities have been highlighted by Lumpkin and Dess (1996), who suggest that EO dimensions or constructs should be

developed, such as how entrepreneurs see risk, and Edmond and Wiklund (2010) call for moderating effects on EO to be undertaken;

4. EO has a comprehensive empirical and conceptual basis in organization studies, but has not been widely explored at the individual level (Edmond and Wiklund in Landstrom and Lohrke 2010);
5. the use of case studies to catalogue and develop the EO mechanism is considered an 'ideal' basis to contribute to cumulative EO research (Edmond and Wiklund in Landstrom and Lohrke 2010).

The use of Lumpkin and Dess's (1996) model as a theoretical foundation for this research builds on the entrepreneurial cognition strategy for research that is centered on the interaction between cognitive elements, processes, and levels of analysis (Gregoire et al. 2010). As a researcher this offers me an opportunity to contribute empirically and theoretically to a growing cognitive perspective in entrepreneurship and offers a secure conceptual framework that can be used for further research.

Lumpkin and Dess's (1996) model is a modification of Covin and Slevin's (1991) earlier model in which they coined the term 'entrepreneurial orientation'. Covin and Slevin accelerated EO empirical research and demonstrated that it was a useful configuration for further organizational and entrepreneurship research (Landstrom et al. 2010) and has since been widely researched (Lumpkin and Dess 1996, 2001; Covin et al. 2006; Huang et al. 2010). Although widely used, the originators of EO (Miller 1983; Covin and Slevin 1991; Lumpkin and Dess 1996) have suggested that the emphasis on differentiation and configuration was lost and that a focus on differences in context when studying firms must be taken into account to develop rich data.

This said, research areas that have extended the EO model include the effect of time on EO and methodological grounding (Wiklund 1999); theoretical grounding of the constructs (Wiklund and Shepherd 2005) and relating the EO model to growth (Covin et al. 2006). Covin and Slevin (1991) also undertook empirical work on corporate entrepreneurship and in this way EO formed the conceptual basis for studying entrepreneurial behavior in larger corporations (Krauss et al. 2011). They argued that external, internal, and strategic variables have a strong effect on the entrepreneurial posture or position of an organization that in turn affects performance. The dynamic interaction enabled the organization to change and adapt, and thereby increased its capacity to perform through the interaction of the three dimensions: innovativeness, risk taking, and proactivity.

The Lumpkin and Dess (1996) model was extended by Kropp and Zolin (2008) after a study with high-tech start-ups and technology development firms. The performance measure dimension that included, sales growth, market share, profitability, overall performance, and stakeholder satisfaction were extended to include commercialization, technology transfer, and survival. The constructs of technology development and transfer, sales growth and overall performance were all identified by the entrepreneurs as significant to the ongoing development of their firms.

Other researchers emphasized the control of internal and external contingent factors when performance is examined (Wiklund 1999; Wiklund and Shepherd 2005; Rauch et al. 2004; Walter et al. 2005; Covin et al. 2006). Lumpkin and Dess (2001) went further to test the dimensions of proactivity and competitive aggressiveness on 95 organizations with entrepreneurs and top-level decision makers. They found that a different approach to entrepreneurial decision making by entrepreneurs and top-level executives had different effects on a firm's performance especially with regard to external factors. In addition, their findings revealed that proactivity was appropriate in rapidly changing environments, with several opportunities for young organizations and that competitive aggressiveness benefits mature industries where competition is fierce. However, they concluded that EO is not always positively related to performance and added that the organization's conditions and external environment is a significant contributing factor.

The concept of opportunity recognition modified the EO model even further. Wiklund and Shepherd (2005) argued that opportunity recognition is positively related to a firm's performance and that EO enhances this relationship. Researchers that have focused mainly on the performance areas of the EO model also found that size was influenced by EO

(Rauch et al. 2004), and that access to financial resources contributed to performance (Wiklund and Shepherd 2005).

Stam and Elfring (2008) claimed that EO is not enough for a new entrant to increase its wealth (Covin and Slevin 1986; Ireland et al. 2003), and investigated the contribution that social capital and networks made (Walter et al. 2005). Their empirical study found support for EO in terms of how networks increase performance in new ventures. Renko et al. (2009) have also examined the relationship between EO factors in an empirical study on biotechnology start-ups. They found a link between technology capability and product innovativeness, while other researchers have argued that EO is determined by the context in which organizations operate (Covin et al. 2006). This argument is relevant for the established technology firm, Firm C, because although twenty-eight years old it remains innovative and proactive, designing and developing new technology and businesses.

Further EO studies relevant to this research are the ability of the model to explain the iterative learning experience between entrepreneurial cognition and senior managers. Wang (2008) looked at an organization's ability to maximize EO through learning (Senge 1990). While Wang (2008) argued that the model of looking at the effect of EO on performance is deficient, the study contributed to the literature by demonstrating that a learning organization mediates EO and organizational strategy moderates the effect of EO. Wang (2008) claimed that for medium-to-large organizations, improvement to performance is dependent on the distribution of the entrepreneurial spirit across organizational levels, a commitment to learn, and a shared vision. In Wang's study, a shared vision was found to be a crucial element in the mediating effect of LO in EO and performance. Although researchers have modified and tested various dimensions, the model still remains unaltered, and combined with entrepreneurial cognition theories forms the theoretical foundation for the components of this conceptual framework. Table 4.2 summarizes further EO research.

Table 4.2 represents research spanning 30 years of EO dimensions that have been tested, developed, and principally limited to examining start-ups or medium-large organizations. This research modifies and builds on the EO (Lumpkin and Dess 1996) model and introduces the interaction

Table 4.2 Additional dimensions to entrepreneurial orientation

Relevant research	Dimensions
Mintzberg (1979)	EO + organizational context, typology, structure and strategy
Miller (1983)	EO
Covin and Slevin (1983)	EO + corporate entrepreneurship
Lumpkin and Dess (1996)	EO + proactivity + competitive aggressiveness
Kropp and Zolin (1996)	EO + commercialization, technology transfer and survival
Wiklund (1999)	EO + time
Lumpkin and Dess (2001)	EO + different types of decision making
Wiklund and Shepherd (2005)	EO + opportunity recognition
Rauch et al. (2004)	EO + performance, size and access to finance
Wiklund (1999), Rauch et al. (2004), Covin et al. (2006)	EO + controlling internal and external factors
Covin et al. (2006)	EO + moderating effect on growth of entrepreneurial participative decision making
Stam and Elfring (2008), Walter et al. (2005)	EO + social capital and networks
Wang (2008)	EO + organizational learning
Covin and Lictenstein (2012)	EO + measurement
Boso and Cadogan (2013)	EO + market orientation as success drivers in export

of the concepts of entrepreneurial cognition, bias, temporality, senior manager perception, growth, and performance.

4.3 Components of the Conceptual Framework

The basis of this conceptual framework is drawn from the empirical and conceptual work of the Lumpkin and Dess (1996) EO model and is underpinned by an open-systems thinking approach on how each concept is interconnected and interdependent (von Bertalanffy 1968). The EO model consists of the dimensions of entrepreneurial orientation, environmental factors, organizational factors, and performance. Lumpkin and Dess (1996) stated that the way in which elements of the model are configured will influence the performance, but did not discuss a theoretical configuration that explained the interrelationship between entrepreneurial cognitive aspects, temporality, senior manager perception, and organizational growth and performance.

EO is hereby extended to include entrepreneurial cognition and bias, and the specific EO dimension is modified to include aspects of decision making, opportunity recognition, alertness, and schemas because entrepreneurial cognition research has found that it affects performance (Tripsas and Gavetti 2000).

The EO dimension of performance as sales growth, market share, profitability, overall performance, and stakeholder satisfaction is maintained but modified to include commercialization, technology and aspects of survival (Kropp and Zolin 1996). The element of organizational factors in the EO model (Lumpkin and Dess 1996) is top management team characteristics and is changed to 'senior manager perception' to include other management levels with which the entrepreneur interacts. External environmental factors are not within the boundaries of this research and so are not included in the conceptual framework.

There is no feedback loop from performance to the dimensions EO or organizational factors in the Lumpkin and Dess (1996) model. In this conceptual framework the interplay between entrepreneurial cognition and senior managers is linked to temporality, bias, and performance and feeds into the interaction between entrepreneurial cognition and senior managers. The feedback loop in this conceptual framework suggests that these concepts have an iterative and reinforcing effect on each other.

Figure 4.1 represents the dimensions and linkages between these concepts that have been informed by the literature and my experience of the phenomenon. The interplay between these concepts demonstrates the continuous reinforcing dynamic nature of the entrepreneurial process.

In Lumpkin and Dess' (1996) model, the entrepreneurial organization is regarded as an extension of the entrepreneur. The dimension autonomy is the independent decision maker and idea generator (Mintzberg 1973) in Lumpkin and Dess' (1996) model, and is regarded as an aspect of cognition in the conceptual framework. The mindset of an entrepreneur is inextricably linked to the organization through the dimension of senior manager perception and is very interdependent (Ireland et al. 2003)

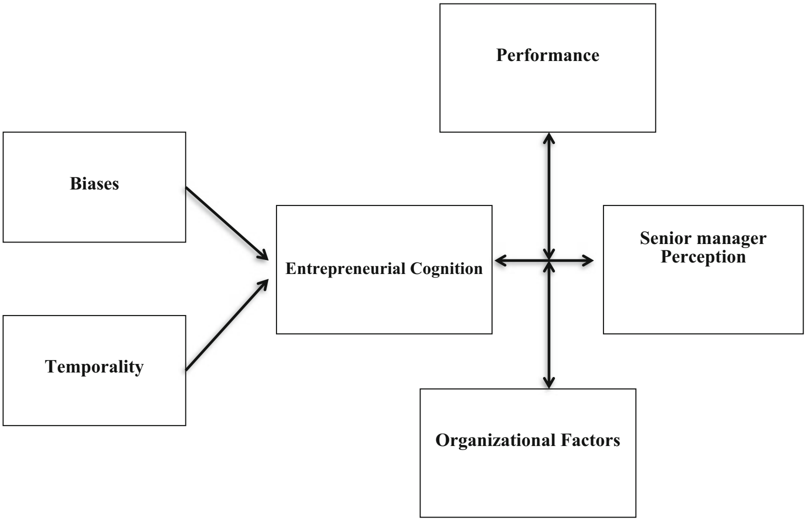

Fig. 4.1 Conceptual framework

and represented within the conceptual framework. The critical aspect of this conceptual framework is the interrelationship between the way entrepreneurial cognition is communicated to the senior managers and the way this communication is perceived and fed back to the entrepreneur as represented in open-systems thinking. Linking these concepts builds on the differences between entrepreneurs and non-entrepreneurs cognition in the literature.

In this conceptual framework I have extended the EO model by conceptually presenting the interplay between the dimensions of entrepreneurial cognition and senior manager perception that affects performance, which in turn affects the interrelationship. More specifically, entrepreneurs are going through a cognitive process in which they scan, analyze, and interpret their environment in order to recognize an opportunity.

The entrepreneurial process of opportunity recognition contributes to performing organizations (Markman and Baron 2003). However, research shows that these organizations perform and grow through a contribution from non-entrepreneurs through shared cognition (Tripsas and Gavetti 2000), and entrepreneurs communicating their strategic decision making (Vermeulen and Curseu 2008). Although contradicting this argument, it was mentioned earlier in EO research, that participative entrepreneurial strategic decision making has a moderating effect on performance (Covin et al. 2006).

The process of entrepreneurial cognition and bias is dependent on the organizational context (Casson 2010). This conceptual framework considers the organizational factors that the entrepreneur and senior managers are discussing that influences the interrelationship. This builds on Covin et al.'s (2006) argument that the context of the organization will determine the EO of an organization.

At an organizational level, EO (Lumpkin and Dess 1996) refers to innovativeness in the entrepreneurial process (Schumpeter 1934) that reflects an organization's capacity for new ideas and their willingness for new and creative practices (Miller 1987). In the conceptual framework, the process of innovativeness is extended to include an entrepreneur's cognitive process of opportunity recognition and alertness.

The entrepreneurial cognitive dimension of alertness influences the speed at which the entrepreneur interacts with the organization (Gaglio and Katz 2001), and temporality is considered as a dimension that influences this interaction. Furthermore, the assumptions made in the conceptual framework are based on Vaghely and Julien's (2010) argument that opportunity identification and recognition is sensitive and dependent on time, which has been ignored by other theories. This cognitive process enables entrepreneurs to see opportunities others cannot see and is regarded as proactivity in EO (Miller and Friesen 1978; Lumpkin and Dess 1996) and entrepreneurs acting on future needs by Venkataraman (1989). In addition, timing of entrepreneurial decision making is considered with respect to their communication and the flow of information with the senior managers.

The literature on entrepreneurial cognitive dimension of decision making states that the entrepreneur is either using heuristics or analysis to make decisions, and adeptly switches between two cognitive processing systems (Busenitz and Barney 1997; Vaghely and Julien 2010). The conceptual framework extends this aspect of decision making to explore how these differences make sense (Weick 1979) to senior managers in the decision making process within the context (Casson 2010) or issue domains (Maitlis 2005), also called strategic issues in this work, with which they interact. Individual cognitive differences such as decision making and opportunity recognition between entrepreneurial cognition and non-entrepreneurs may affect the interaction between the entrepreneur and the senior managers and has a mediating effect in shared cognition (Busenitz and Barney 1997; Cornelissen and Clarke 2010; Baron and Markman 2003; Miller and Droge 1986). In addition, entrepreneurial cognition is affected by biases (Tversky and Kahneman 1973) that non-entrepreneurs are less affected by (Baron 1998). Based on this literature, biases are considered an important conceptual component of the interaction between the entrepreneur and the senior managers in this conceptual framework. Casson (2010) reinforced this view that entrepreneurs use their experience to represent knowledge and patterns that is different to managers' schemas. The bias dimension is an extension of the EO model and includes over-confidence, representativeness, intuition, optimism, planning fallacy, and illusion of control. These biases are aspects of cognition that (1) influence the way in which the entrepreneur frames a problem, takes in information and makes decisions (Tversky and Kahneman 1973; Shane 2007); (2) has a heavily weighted role to play in entrepreneur's decision making (Busenitz and Barney 1997; Baron 1998; Simon et al. 2000); (3) show that entrepreneurs are more susceptible than others (Baron 2004) and (4) have been linked to growth (Mintzberg 1978, 1982). The influence of biases is therefore regarded as significant in the interplay between entrepreneurial cognition and senior managers' perception.

The temporal concept reflects the time line associated with entrepreneurial cognition such as decision making, opportunity recognition, and alertness to opportunities and when they communicate these cognitive processes to senior managers. It was noted in earlier research that timing with regards to opportunity recognition and reaction to the market are important aspects of entrepreneurship. In addition, actions and interventions in the organization by entrepreneurs and senior managers have a temporal aspect to them (Balkin et al. 2000). Timing is therefore considered as an important aspect of the interplay in this conceptual framework.

The performance dimension forms part of the EO model. In addition, entrepreneurial literature has linked growth and venture creation in entrepreneurial firms to entrepreneurial cognitive aspects such as decision making and opportunity recognition (Mitchell et al. 2002a, b, 2007; Wright and Stigliani 2013). Lumpkin and Dess (1996) provided an empirical and conceptual basis, claiming that organizational factors influence EO and subsequently lead to performance. But their EO model does not include a reciprocal dimension for the cognitive interrelationship between the entrepreneur and senior manager contribution to performance. In this way, the conceptual framework extends the EO model by exploring the influence of performance on the interrelationship between the dimensions of entrepreneurial cognition and senior manager perceptions and includes growth in the conceptual framework. This framework is the first conceptualization of the interplay between entrepreneurial cognition and senior manager perception, building on entrepreneurship cognition research and organizational dynamic studies on interrelationships. At this point of the research, the conceptual framework represents assumptions that are based on theoretical perspectives that have been extracted from literature and my professional experience about the importance of these dimensions.

In order to investigate the interplay between entrepreneurial cognition and senior manager perception, this chapter has explained the theories that have collectively formed part of the conceptual framework. In doing so, the interrelated concepts of entrepreneurial cognition, senior managers, temporality, biases, communication, and performance were combined to undertake the research. The next chapter will provide the evidence of how entrepreneurs experience, the transfer of tacit knowledge, and entrepreneur and organizational learning influence the entrepreneur-senior manager interrelationship.

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5

Experience, Knowledge Transfer and Entrepreneurial Learning

5.1 Introduction

This chapter presents the identifiable patterns derived from the entrepreneur-senior managers' interactions to ascertain the implicit reciprocal and causal relationships of experience, knowledge sharing, and entrepreneurial learning. Although not specifically cause-effect focused, experience, knowledge transfer, and entrepreneurial learning are regarded as key concepts affecting the entrepreneur-senior manager relationship. We know that entrepreneurial prior experience has an effect on opportunity recognition and realization, but not the effect on their interrelationships with senior managers in the context of an established entrepreneurial firm. As environments change, there are certain aspects of knowledge and experience that are imprinted and reappear in entrepreneurial decision making (Marquis and Tilcsik 2013; Mathias et al. 2015) without entrepreneurs and senior managers fully understanding the underpinning themes that have led to this. Knowledge is seen by some researchers as a strategic resource (Eisenhardt and Santos 2002) which allows firms to upscale and in the case of technology and intellectual property rich businesses, provides a competitive advantage (Grant and Baden-Fuller 2004). This has

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significant implications for established firms in which the entrepreneur is handing over control to future successors and has to pass the baton in terms of tacit knowledge and experience.

Analysis of the empirical evidence led to the emergence of six abstract themes: incongruence; fear; expectations; communication; success and learning. Figure 5.1 presents a higher-level abstraction to show the six themes from the cognitive psychological and organizational perspectives. In order to understand the significance of configuration theory in this work, entrepreneurial and organizational learning are presented to analyze the cause of the cognitive distance and dissonance from the evidence. More specifically, through understanding single and double-loop learning, further insight into the reasons for cognitive dissonance (Festinger 1962) in their interrelationships (Argyris and Schön 1975, 1978; Senge 1990) is interpreted. The evidence for how senior managers deal with cognitive dissonance resulting from their interaction with entrepreneurial decision making shows them trying to psychologically seek consistency by reducing the differences in thinking. The role of common backgrounds and experience is also considered in the findings.

Fig. 5.1 Themes and layers of analysis

The themes and patterns identified regarding the interaction between the entrepreneur and senior managers were consistent for the firms over the longitudinal interview period of twelve months. The sample size of three firms proved to be sufficient to collect the required empirical data and theoretical saturation was reached when no new concepts and themes emerged (Strauss 1987) during Sets II and III interviews. This section introduces the contribution of the cognitive and organizational modes of analysis. The cognitive psychological perspective was used because it can be applied at the individual, group, and organization level of analysis (Huff et al. 2002; Hodgkinson and Healey 2008) in order to gain insight in the entrepreneur-senior manager relationship.

Lumpkin and Lichtenstein (2005) provided a framework for the analysis of the interactions, perceptions and communication between the entrepreneurs and senior managers. In addition, the Politis (2005) model illustrated how transformation of entrepreneurial experience into knowledge has an interaction effect on senior managers. Another mechanism for understanding the interaction between entrepreneurial cognition and senior manager perception is Crossan et al. (1999). Their model offered an explanation for the barriers and limitations faced by senior managers that subsequently affected the interrelationship with the entrepreneurs. Finally, the theory of psychological contracts (Schein 1987) offered an explanation for cognitive misfit between the entrepreneur and senior managers with insight into the complexities of expectations in their interrelationships. This theory highlights aspects of roles and responsibilities (Handy 1993) that were then discussed within Likert's (1967) four systems of analysis (exploitive authoritative, benevolent authoritative, consultative, and participative). Aspects of each of these theories are used to provide meaning in this chapter Table 5.1.

The following table shows the category analysis derived from the interviews with entrepreneurs and senior managers Table 5.2.

Stake's (1995) four ways of interpreting the data provided additional rigor to the data analysis process:

- issues related from a number of instances;
- direct interpretation from a single instance;
- establishing patterns from categories;

Table 5.1 Comparison across firms A, B and C

Factors	Firm A	Firm B	Firm C
Significance of age	20 years	10 years	20 years
	Entrepreneurs allowed some participative decision making	Entrepreneur made autonomous decisions	Entrepreneurs allowed some participative decision making
	Established norms were in place	Norms were still changing	Established norms were in place
Industry and size	Pharmaceutical	Electrical Services	Technology Design and Development
	+70 employees	+80 employees	+350 employees as shareholders
Organizational culture (Schein 1998)	Well defined duties with a tendency towards formal systems and processes. Regarded as a medium-size firm	Well defined duties with a tendency towards formal systems and processes. Regarded as a medium-size firm	Relatively flexible structure; lateral rather than hierarchical communications and control. Regarded as a large firm
Incongruent theme	Senior manager's cognition, perception of timing on OpR is incongruent with the entrepreneur. The closer the senior manager cognition is to entrepreneur and high level interaction reduces incongruence between the entrepreneur and senior manager	Senior manager's cognition, perception of timing on OpR is incongruent with the entrepreneur. The closer senior manager cognition is to the entrepreneurs and high level of interaction reduces incongruence	Senior manager's cognition, perception of timing on OpR is incongruent with the entrepreneur. The closer senior manager cognition is to entrepreneurs and high level interaction reduces incongruence
Communication theme	Lack of ability to communicate cognitive processes led to cognitive dissonance	Lack of ability to communicate cognitive processes led to cognitive dissonance	Lack of ability to communicate cognitive processes led to cognitive dissonance

(*continued*)

Table 5.1 (continued)

Factors	Firm A	Firm B	Firm C
Fear theme	Senior manager's fearful to make decisions the further away their line of communication is from the entrepreneur	Senior manager's fearful to make decisions in case the entrepreneur disagrees or they fail	Senior manager's fearful to make decisions the further away the line of communication is from the entrepreneur
Success theme	Evidence of cognition-success-attribution was slowly being diluted as confidence and integration of senior manager increased	Strong evidence for entrepreneurial cognition-success-attribution Espoused Theory rather than theory in practice about recognition of senior manager contribution to decision making	Evidence of cognition-success-attribution was slowly being diluted as confidence and integration of senior manager increased
Expectation theme	Expectation of being the dominant decision maker beginning to change over the period of the interviews	Entrepreneur expected senior managers to accept autonomous decision making throughout the period of the interviews	Slow incorporation of senior manager in decision making as congruence increased
Learning theme	Showed signs of beginning to use cognitive and action learning	Did not use cognitive and action approaches to learning	Showed signs of beginning to use cognitive and action learning
	Little evidence of double-loop learning	Single-Loop learning rather than double-loop learning	Little evidence of double-loop learning
	Beginning signs of same-different traditional S-R	S-R was still different-same	Beginning signs of same-different traditional S-R

(*continued*)

Table 5.2 Category analysis for firms A, B and C

Category	Firm A	Firm B	Firm C
Decision making, insight			
Entrepreneur had already made a decision when he spoke to senior managers	Y	Y	Y
Entrepreneur could see what senior managers needed to do/decide	Y	Y	Y
Entrepreneur influenced or directed the senior managers decision making	I	D	I
Used both analytical and intuitive decision making	Y	Y	Y
Entrepreneur led senior managers to believe their input counted before he made the decision	Y	Y	Y
Entrepreneur let senior managers make their own decisions	Y	N	Y
Entrepreneur would veto something he disagreed with	Y	Y	Y
Senior managers were influenced by the entrepreneurs' cognitive process and timing	Y	Y	Y
Alert, information gathering			
Entrepreneur used information gathering to justify a decision he had already made	Y	Y	Y
Entrepreneur controlled information he gave to senior managers	Y	Y	Y
Lack of information led to senior managers frustration and confusion	Y	Y	Y
Experience, opportunity			
Entrepreneur used his experience to make decisions while senior managers needed more facts	Y	Y	Y
Entrepreneur felt he was still involved in opportunity recognition	Y	Y	Y
Senior managers felt entrepreneur was not involved in opportunity recognition	Y	N	Y
Senior manager felt the entrepreneurs lack of experience in new areas limited growth	Y	Y	Y

(continude)

Table 5.2 (continued)

Category	Firm A	Firm B	Firm C
Insight, pattern recognition			
Entrepreneur could not get the senior managers to see what he could see	Y	Y	Y
Senior managers felt they could not see what the entrepreneur could	Y	Y	Y
Change			
Entrepreneur made changes in the organization	Y	Y	Y
Paradoxically senior managers felt the entrepreneur did not like change	Y	Y	Y
Organization experienced change in issue domains	Y	Y	Y
Generation			
Senior managers felt there was a generation gap between them and the entrepreneur	Y	Y	Y
Entrepreneur 'mellowed' with age	Y	Y	Y
Temporality			
Entrepreneur felt senior managers should work quicker	Y	Y	N
Senior managers felt that the entrepreneur had forgotten how long things took	Y	Y	Y
Entrepreneur was more relaxed with each Set I, II and III	Y	Y	Y
Entrepreneur took his time making a decision	Y	Y	Y
Optimism			
Positive	Y	Y	Y
Realistic	Y	Y	Y
Sensemaking and sensegiving			
Entrepreneur felt senior managers did not take responsibility, or relate client satisfaction to their salaries	Y	Y	Y
Senior managers felt that they did relate their jobs to their salaries	Y	Y	Y
Interaction and relationships			

(continude)

Table 5.2 (continued)

Category	Firm A	Firm B	Firm C
Uncertainty between what the entrepreneur was doing and what senior managers thought he was doing	Y	Y	Y
Senior managers wanted more clarity from the entrepreneur	Y	Y	Y
Entrepreneur was stepping back and senior managers wanted more time with him	Y	N	Y
Senior managers felt the entrepreneur was a good communicator	IS 3 only	N	N
The entrepreneur had formalized meetings with employees, managers, group heads, and senior managers	Y	Y	Y
Succession planning was taking time from entrepreneur to Managing Director and CEO (IS 1 and IS 7)	Y	Not happening	Y
Senior managers tried to please the entrepreneur with what they said and did	Y (except IS1)	Y	Y (except IS7)
Entrepreneur had never been challenged by the senior managers	Y	Y	Y
Entrepreneur trusted that people would get the job done independent of him and to his standard	N	N	N
Entrepreneur pushed people to get the job done	N	Y	N
Growth			
Entrepreneur felt organization should be bigger than it was	Y	Y	N
Senior managers felt the entrepreneur did not take risks	Y	Y	Y
Entrepreneur felt senior managers did not have the same vision as he did	Y	Y	Y
Growing through recruitment	N	Y	N
Entrepreneur had a strategy for growth	N	N	N
Senior manager felt that he was responsible for growth and not the entrepreneur (MD-IS1 and CEO-IS7)	Y	N	Y

Key: *Y* yes, *N* no, *I* influence, *D* direct

- generalizations from the three Firms that can be learned.

Research by Wang (2008) claimed that for medium to-large organizations, improvement to performance is dependent on the distribution of the entrepreneurial spirit across organizational levels, a commitment to learn, and a shared vision. In Wang's study, a shared vision was found to be a crucial element in the mediating effect of LO in EO and performance. By using Stake's four ways of interpreting the data, the following paradoxical constructs were derived.

5.2 Incongruent and Communication Themes

Incongruence can be explained using an effectuation lens (Sarasvathy 2001). Effectuation theory differs from rational choice decision theories since it is characterized by uncertainty and rational choice is exemplified by pre-existent goals, strategic objectives (Knight 1921), and ambiguity. The entrepreneurs in the firms used effectual reasoning but were misperceived by most of the senior managers, as making decisions quickly without enough information. However, this was incongruent with the entrepreneur's decision-making processes, which took longer than was perceived by senior managers. The senior manager perception was also incongruent with their own decision making processes.

The following quote by the entrepreneur's wife and finance director senior manager demonstrated their different perceptions to the other three senior managers due to the close and regular nature of the interrelationship. The analysis illustrated that she displayed an accurate interpretation of the entrepreneur's analytical cognitive process because she interacted the most with him over a period of years.

Firm B, Senior Manager

> *He does not make snap decisions. He is very cautious in his decision-making process.*

However, the evidence demonstrated that entrepreneurs used both rational and effectual decision-making processing dependent on the situation (Sarasvathy 2010). The temporal aspects of when information was shared with the senior managers also caused incongruence. When combined, this heterogeneity within the top management team is evidence that diverse cognitions and experience leads to conflict and dysfunction (Kamm and Nurick 1993; Miller et al. 1998).

Senior manager misperception illustrated that they failed to see that unlike themselves, who only used causal reasoning that focused on a given set of means to achieve results, entrepreneurs used both. The entrepreneurs 'limited the downside' of decisions, which was characteristic of effectuation (Sarasvathy 2010) and prospect theory, and the senior managers were less able in this respect.

Firm B, Entrepreneur

> *They know never to just bring me one set of answers, or what they think. I always look at the 'what if factor', what if something goes wrong. How are we exposed, what are the upsides, what are the downsides, to try and think about all that before I can make a decision…*

These differences contributed to incongruent cognitive processes that moderated their interrelationship. In this example the entrepreneur was expecting the senior manager to find the information regarding the strategic issue and to have the knowledge on how to handle it without explaining what he was thinking.

The senior managers then perceived the entrepreneur to be risk averse which widened the gap between entrepreneurial thinking and senior manager perception and is evidence of how the cognitive distance interferes with their interaction. Senior managers' expectation was that the entrepreneur should take risks and did not understand the temporal cognitive processes of information gathering, analysis and mental shortcuts.

Sarasvathy's (2001) use of effectuation reflected in my evidence of entrepreneurial thinking, builds on Mintzberg's (1978) work that entrepreneurial thinking has been learned in successful medium to-large organizations. This opposing view in knowledge-based theory is evident that heterogeneity in top entrepreneurial teams can result in successful communication if the entrepreneur is able to share his or her thought processes. Sarasvathy's and Mintzberg's approach can be applied to the senior managers who switched between entrepreneurial and planning mode in a similar way to entrepreneurs and therefore have reduced cognitive distance.

Firm A and C senior managers who interacted more frequently with the entrepreneur learned increasingly to think like the entrepreneur and also switched to planning mode when necessary in their managerial capacity. This was down to senior manager learning rather than entrepreneurial sense giving. This increased communication and regular interaction had positive results because the senior managers directly witnessed and experienced the temporal aspects of the entrepreneur's information gathering and decision-making processes. Therefore, the perception that the entrepreneur made quick decisions with insufficient facts was reduced or eliminated. However, the dominance and success of the entrepreneur's decision making largely influenced the degree to which senior managers were cognitively aligned. This is evidence that tacit knowledge is challenging to access and communicate, requiring extensive interaction in order to ensure that knowledge is transferred between individuals (Zucker et al. 2002; Knockaert et al. 2011).

The senior managers who communicated less with the entrepreneurs, experienced their lack of desire to report their decision-making processes. This evidence contradicted West's (2007) finding in start-ups that entrepreneurial team collective cognition is important because decisions were made at the team level through discussion. The entrepreneurs in this study appear to be more single-minded in their decision-making process and controlled the information flow, but the lines of communication were also longer. As Firm C senior manager said: "we would start to question his decisions if he stopped being successful". In this way only positive upward feedback was communicated to the entrepreneur and this reinforced his decision making. This reinforces the cognition-success-attribution cycle and potentially does not introduce new management practices into the organization.

It is also legitimate that the entrepreneurs were unable to report their mental experiences because they did not understand their psychological processes in decision making and therefore were unable to communicate them (Nosek 2007). This finding supports the psychological studies on unconscious cognitive processes by Dane and Pratt (2007) and Vermeulen and Curseu (2008). In addition, the evidence suggested that the entrepreneur lacked sensemaking

(Weick 1979), that people were fearful to make decisions independent of him because of the challenges associated with accessing intrinsic cognitive processes. In some instances, the senior manager demonstrated sensemaking when he cognitively aligned with the entrepreneur's thinking.

Firm B, Senior Manager

> *Rather than me saying this is what I want to do and this is what I'm hoping to achieve, I'll give him an idea or I'll give him two ideas.*

5.3 Fear and Success Themes

Prospect theory means that entrepreneurs placed more weight on losses than successes (Tversky and Kahneman 1973). In other words, entrepreneurs were more concerned when they lost a client or market share than when they gained it. But by adopting such a position senior managers denied themselves the opportunity to gain experience or share common experiences (Sarasvathy 2001; Beckman 2006) by not taking risks in case they failed. Having common prior or similar work experiences or previously working with the entrepreneur also had an impact on how these interactions were experienced. Similarity between the entrepreneur and senior managers reduced cognitive distance and dissonance.

Added to this was the senior managers' lack of decision-making experience that acted as a moderator on their interaction. This fear of failure derived from the evidence referred to the senior managers' failing entrepreneurial expectations. The fear of not wanting to make mistakes limited the learning that can transform novice senior manager decision makers into experienced entrepreneurial decision makers.

Mintzberg (1978) and Sarasvathy (2001) have argued that the entrepreneurial approach to decision making can be learned. However, the evidence in this study shows how the fear of failure and lack of experience influenced the way the senior managers adapted their thinking to that of the entrepreneur in the firms in an attempt to reduce cognitive dissonance. Successful senior manager decisions were therefore limited. Although, neither was cognizant of how and why their respective frame of reference affected their interrelationship and the organization, this resulted in senior manager dissonance and a misfit at the cognitive level. Fewer cognitive differences between the entrepreneur and senior manager resulted in a closer collective focus on OpR and decision making.

The evidence for this argument was presented in Firms A and C. The senior manager, who worked closely with the entrepreneur and acted as the managing director, showed lower levels of cognitive dissonance than the other senior managers. It was not observed in Firm B because the entrepreneur was the autonomous decision maker and senior managers experienced cognitive dissonance due to their interaction. Although, when they adopted the entrepreneur's cognitive approach it similarly reduced cognitive dissonance. This suggests that regular interaction with the entrepreneur as mentor and coach helped the senior manager to reduce fear of failure. In addition, it helped them to understand entrepreneurial cognitive differences and subsequently learn from their successes. This cognitive alignment process reinforced the cognition-success-attribution cycle.

Firm B, Senior Manager

> *I always use the entrepreneur's thought process when trying to sell him an idea. Working with him has influenced and focused my thinking.*

The two aspects of fear and success are further illustrated in Firm A where both entrepreneur and MD senior manager made a manufacturing investment decision and used heuristics rather than analytical decision making. Their decisions were influenced by over-confidence and intuition biases. Lack of planning resulted in an increased timescale in building the manufacturing site and a misjudgment of the finances delayed the return on investment. Other senior managers who were not subjected to the same entrepreneurial bias were fearful to confront them on the issue domain 'Manufacturing'.

In this example, both the entrepreneur and senior manager overlooked the fact that the MD used the same heuristic decision-making processes as himself resulting in longer completion timescales on the project. An additional complexity was that the entrepreneur unlike the senior manager switched between analytical and heuristic decision making (Vermeulen and Curseu 2008). This led to failed expectations on both sides due to a lack of understanding and communication. This finding supported earlier cognitive psychology theories about differences in cognition between management and entrepreneurs (Busenitz and Barney 1997; Mitchell et al. 2000; Gaglio and Katz 2001; Mitchell et al. 2002).

5.4 Learning and Expectations Themes

The evidence from the entrepreneur's perspective contradicted the general argument that entrepreneurial cognition can be learned (Mintzberg 2001; Sarasvathy 2001). The entrepreneur in Firms A and B felt that senior managers "won't get it anyway", and in Firms A, B and C the entrepreneurs expected them "to see it". The entrepreneurs were unaware that sharing their mental models through communication or training (Argyris and Schön 1975) would have a positive effect on their interaction. This view has implications for entrepreneurs who lack communication skills and the desire to learn how to extract and transfer tacit knowledge to senior managers and is reflected in the limited research sharing tacit knowledge.

Firm C, Senior Manager

> *He (the entrepreneur) would just say 'no' if he thought something was a bad idea.*

Figure 5.2 illustrates the evidence of the interaction process between the entrepreneur and senior managers.

The fact that the firms formed a heterogeneous sample from three varied sectors meant that the similarities between Firms A, B and C are independent of sector membership and experience. It was not the intention of my research to compare entrepreneurial thinking across different sectors but to highlight the effect of different cognitive processes on the interaction with senior managers.

Senge (1990: 3) indicated that learning organizations were "Organizations where people continually expand their capacity to create

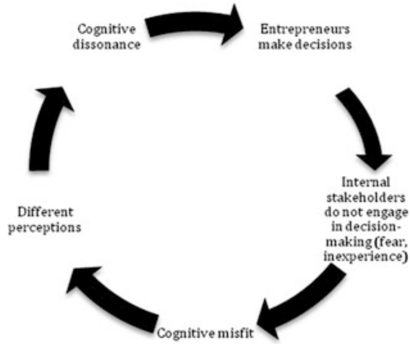

Fig. 5.2 Perpetual cycle of autonomous decision making

the results they truly desire, where new and expansive patterns of thinking are nurtured". This illustrated that organizational learning can mediate entrepreneurial and senior manager interrelationships by learning from each other. For this purpose, organizational learning theory offered valuable insights into decision making and OpR. More specifically, through single and double-loop learning, cognitive dissonance was explored in their interrelationships (Argyris and Schön 1978; Senge 1990).

The evidence showed that the cognitive capacity and capability of the entrepreneur led to success rather than the explicit transfer of entrepreneurial cognitive processes to senior managers. This finding is in contradiction to the overall premise that organizations are constantly learning and transmitting information. However, the findings showed that the senior managers adopted entrepreneurial thinking in single-loop rather than double-loop learning which could be an explanation for the success of the organization.

The findings showed an ambiguity between entrepreneurs who are constantly learning (Daft and Weick 1984) from the environment but resisted learning from the senior managers. This is caused by the underlying assumptions that the entrepreneur has pre-existing experienced mental models, that have led to success and senior managers did not feel experienced enough to question them. Limited examination of mental models familiar to the entrepreneur, and limited learning from senior managers led to the senior manager feeling demotivated and disillusioned with the interrelationship. This reflects the limited opportunity that senior managers had with entrepreneurs to learn by observing and practicing their way of thinking or doing things (Nonaka 1991). Wagner and Sternberg (1987) suggest that senior managers can learn to use the entrepreneur's tacit knowledge (once shared) by filtering, combining, and creating patterns and seeking relationships between old and new facts in order to create new knowledge. This evidence supported Miller's (1992) argument that the development of new mental models to replace existing successful mental models is a challenge. For example, the three entrepreneurs would use senior managers to gather and provide information to inform a decision, but would not consider their contribution to the decision itself. This temporal aspect is significant because not having an impact on the decision itself limited senior managers' learning (Senge 1990). A combination of entrepreneurial autonomous decision making, experience, and the influence of bias, contributes to the control of information regarding entrepreneurial cognitive processes.

Firm A, Senior Manager

He will have the decision made. He may have the decision a lot earlier than he tells you.

This quote supports Bluedorn's (2002) finding in temporal studies that the entrepreneurs based decision making on their own direct experience rather than on the experience of senior managers.

Firm B, Senior Manager

He tells me what I want to hear and doesn't make changes that make a substantial difference to me.

Ignoring the new input by senior manager in favor of 'accrued experience' (Bluedorn 2002) moderated the interrelationship. The dominant position of the entrepreneur in organizational learning had an effect on the senior managers who had their own perception of the entrepreneur's OpR decision-making processes. Senior managers were also concerned about seeking new opportunities because the entrepreneur disagreed if the topic was unfamiliar. In some instances, the senior manager put it down to the differences in background, supporting evidence (Knockaert et al. 2011) that commercial or technical background makes a difference in cognitive distance between top entrepreneurial management teams.

Lichtenstein and Lumpkin's (2005) framework of behavioral, cognitive and action learning in Table 5.3 provides an explanation for inconsistencies in the entrepreneur and senior manager interactions.

The contradiction between learning from the environment and learning from senior managers can be explained through understanding behav-

Table 5.3 Modes of learning that generate opportunities in entrepreneurial firms

	Nature of entrepreneurial learning	Elements affected by entrepreneurial learning processes	Potential opportunities for entrepreneurial learning
Cognitive learning	Identify and alter cognitive patterns, generate new opportunities for knowledge and action (Nonaka 1994; Crossan et al. 1999)	Existing and potential knowledge Existing and potential resources Systemic processes	Design new products and services Develop new ways of doing business Attract and retain customers Apply proprietary knowledge in unique and innovative ways
Behavioral learning	Alter tangible processes through experience	Existing and emerging routines Adaptive process	Streamline processes to achieve new efficiencies Integrate learned experience to improve tangible processes
Action learning	Transform the context by questioning assumptions and aligning espoused belief with actual practice (Revan 1971) Argyris 1992; Pedler et al. (2005)	Underlying norms and beliefs Interaction, 'Rules of Engagement'	Accelerate innovation process Generate highly productive and creative organizations and collaborations

Source: Lumpkin and Lichtenstein (2005) ioral learning. The entrepreneur would espouse theory by articulating that senior managers had decision-making power, but would veto their decisions. However, the entrepreneur in Firm B did eventually streamline the sales and marketing technology process suggested by the senior manager months beforehand. It took a few months for the entrepreneur to integrate existing knowledge with new unfamiliar knowledge.

Firm B, Senior Manager

The entrepreneur does not like change.

Through persistence the senior manager demonstrated a desire to achieve higher levels of cognitive learning than the entrepreneur. The entrepreneur's experience and learning from other technology failures potentially moderated organizational performance (Huber 1991) and showed how the representativeness bias (Tversky and Kahneman 1982) negatively affected the interaction with senior managers. However, the change increased performance and had a positive effect on their interrelationship.

Revans (1971), the originator of action learning, began by using the process of tackling issues and reflecting on actions with scientists but later used it with managers in a variety of public and private sector organizations by learning through actions and practice. The action learning approach to OpR that focused on alignment between expectations, reality, and targeting individual assumptions provided further insight into the interactions between the entrepreneur and senior managers. In Firm A there was an expectation by the entrepreneur that management meetings successfully communicated his thoughts, but the reality was that senior managers did not appreciate what he was thinking. In Firm B, the expectation that the senior manager had the freedom to make decisions was very different to the reality that the entrepreneur was the final decision maker. In Firm C, the entrepreneur's assumption was that senior managers were free to bring new opportunities to him, while in reality the senior managers thought that there was an expectation of what was acceptable and what was not.

The frustration felt by senior managers in not knowing what the entrepreneur was thinking and why he made certain decisions reflected a lack of cognitive learning, misalignment of expectations and reality. Cognitive learning is a part of organizational learning that enables tacit knowledge to be activated to increase and share knowledge amongst individuals (Nosek 2007). The entrepreneurs' sharing of cognitive schemas and mental models were inconsistent across the organizations. It was mentioned previously that when the entrepreneurial mentoring role in Firms A and C with senior managers was more consistent then cognition was more closely aligned. The evidence therefore showed that senior manager cognitive dissonance cannot be generalized across all the interrelationships with the entrepreneur and depends on the level of interaction mentioned earlier. Although the entrepreneurs in limited examples in Firms A and C recognized that they should transfer their knowledge, the senior managers' lack of understanding of OpR illustrated that entrepreneurs were still not sharing their knowledge to improve interactions.

A cognitive and action learning approach (Revans 1971, 1978) was gradually being adopted in Firms A and C through interactions in which the entrepreneur and senior managers would learn from the decision-making process and exchange thinking on what worked and what didn't. The challenges faced by the entrepreneur about issue domain 'Succession' showed a gradual increase of confidence as the senior managers made more successful decisions. In this way the senior managers in Firms A and C delivered on the entrepreneur's expectations and tested assumptions about their role in decision making.

Although the finding that acceptance by the entrepreneurs is partly because the senior managers who interact more closely and regularly with them had learned to think more like the entrepreneurs, learning was slow. The dichotomy in the findings was that the entrepreneur allowed senior managers the freedom to learn and make decisions while their contribution and involvement in decision making was limited. This reflected the contradiction between Senge's (1990) espoused theory and theory in practice in which the entrepreneur said one thing and behaved in a different way.

These findings supported the proposition that previous entrepreneurial events are related to how experience is transformed into knowledge (Politis 2005) that either moderated or mediated entrepreneurial decision making. The frustration of the senior managers' efforts to undertake new approaches and decisions to grow was fuelled by the entrepreneur's generalizations in applying the same way of thinking to subsequent issue domains. This is regarded as path dependency and meant that the entrepreneurs in Firms A and B found it a challenge to adapt to new changes in customers, technology, and regulation because of the cognitive persistence of previous success (Levinthal and March 1993). Highlighted earlier, the previous experience of the entrepreneurs in Firm A and C was a major contributing factor to the cognitive misfit between the entrepreneur and senior managers.

Firm A, Senior Manager

> *Obviously you wouldn't hand over your baby after 20 years and say there you go, you look after it now and get on with it. I think again it's quite an interesting situation to manage, it requires management of both the founder and the company.*

A contradiction to path dependency and Politis' (2005) entrepreneurial learning and OpR framework in Firm A. Even though the entrepreneur had 20 years of start-up and specific pharmaceutical industry experience his over-confidence and reasoning led him to explore the new manufacturing opportunity to expand the organization. The evidence from Firm B also provided a challenge to Politis' (2005) framework. In Firm B there was an opportunity to increase performance but the entrepreneur was reluctant due to the negative outcome of previous sales and marketing technology. This showed that previous experience did not always lead to the exploration and exploitation of an idea without the interaction with, and intervention by, senior managers in established entrepreneurial organizations.

This was similar in Firm C where the transformation process of new opportunities was influenced by the entrepreneur's previous outcomes in the new product development and his early career.

The cognitive distance and dissonance therefore between the entrepreneur and senior managers in the firms can also be explained as a difference in the level of prior information and knowledge in recognizing opportunities. This is also explained through the five stages of OpR in which prior knowledge is referred to in the 'preparation' phase (Shane 2000; Lumpkin and Lichtenstein 2005).

Crossan et al. (1999) used the influence of intuition and experience as a mechanism for understanding the interaction between individual, group, and the organization. In this way, insight into entrepreneurial cognition and senior manager perception is illustrated by their 4I model of intuiting, interpreting, integrating, and institutionalizing reflecting organizational learning as a dynamic process. The entrepreneurs had developed intuition on the basis of their experience and used their existing knowledge to interpret new information. This dynamic process shows that due to different interpretations of what and how entrepreneurs were thinking, the next phase of integrating knowledge was challenging for the senior managers. As a result, a possible shared understanding was undermined. In each firm shared practices in terms of strategy development and performance was not institutionalized because of differences in approach to strategy development and growth between the entrepreneur and senior managers. Senior managers operate using their own learning that they do not share with the entrepreneur for fear of his reactions. However, towards the end of the interviews, entrepreneurs in Firms A and C had identified that their own cognitive processes potentially limited the organization's growth.

Institutionalized learning through consistent senior manager feedback was not embedded since evidence showed inconsistencies and contradictions within and across the firms. The degree to which the 4I process can be applied to the findings depends on the perception of the senior managers to the entrepreneur's decision making and exploitation of new opportunities.

The contradictions identified above of entrepreneur and senior manager interrelationship in terms of cognitive differences, biases, communication, and organizational learning, can be further explained by exploring individual aspects of learning in more detail. Underpinning organizational learning in the firms is single and double-loop learning (Argyris and Schön 1978) developed primarily on firm study research (Huber 1991). The Argyris and Schön (1978) model demonstrated how single-loop learning took place and it was possible for the entrepreneurs to think that senior manager decisions were congruent to theirs. Single-loop learning took place because the senior managers improved systems and processes that were formed and developed by the entrepreneur, rather than changing them radically. A double-loop approach to learning meant that the senior managers would have to fundamentally question entrepreneurial decision making and OpR processes. The evidence for entrepreneurs and senior managers double-loop learning was limited.

Fear was found to be a barrier to double-loop learning opportunities for entrepreneurs and senior managers. This fear is exacerbated by the lack of senior manager counterfactual bias. The influence of a counterfactual bias meant that the entrepreneur was able to look forward after a failure, rather than spend time thinking about why it happened.

Firm A, Senior Manager

> *He* (*the entrepreneur*) *does not look back and reflect on whether he made a wrong or right decision. It is not part of this thinking process.*

The evidence for single-loop learning was observed in Firm B when the entrepreneur found several thousands of pounds worth of sales overlooked in archived client files by the sales force. The entrepreneur's response in telling senior managers to become more efficient can be interpreted as "just fixing the problem", rather than questioning the underlying assumptions of what and why it happened, and how the existing system caused the failure. In addition, senior managers did not communicate their conflicting views about why and how this error occurred which they believed was due to a lack of autonomy and employee motivation. There was no senior managers' participation in the decision to implement the action dictated by the entrepreneur to fix the problem. Using existing systems and processes dictated by the entrepreneur to resolve the problem reflects single-loop learning.

The perceptions of the senior managers that the entrepreneurs made decisions with regards to new opportunities only if they were familiar with the area confirmed previous studies that entrepreneurs preferred OpR when they have existing knowledge (Baron and Ensley 2006; Mitchell and Shepherd 2010). This approach had a negative influence on their interactions because senior managers wanted to learn and explore new and different opportunities. The entrepreneurs' reluctance was a barrier for expansion and growth. It also meant that change and the adoption of new processes was a challenge for senior managers in each of the firms.

Another reason for single-loop learning is that by making entrepreneurial cognitive processes explicit, entrepreneurs exposed their ideas, intentions and choices, and so could make themselves vulnerable (Argyris 1992 and 1993) to senior manager criticisms and perceptions. Entrepreneurs admitted to doing things instinctively without "training" and with a fear that they might get "caught out". This defensive mechanism meant that senior managers perceived the entrepreneur as controlling, reinforcing their fear of failure and incorrect perceptions. The entrepreneurs seldom cognitively adjusted if they believed they had made the correct decision. This supports the illusion of control bias theory (Langer 1983), that entrepreneurs looked for confirmation of their hypothesis and ignored disconfirming evidence. Argyris and Schön (1978) argued that organizations used double-loop learning in order to grow. However, double-loop learning meant that senior managers questioned underlying principles and successful entrepreneurial decision making. Instead, single-loop learning was more evident than double-loop learning in all firms because of established entrepreneurial cognition and practices. In addition, Weick's (1979) argument that organizational learning was infrequent was evident in the firms

Through the theme discussion in this chapter, my study suggests that entrepreneurs and senior managers should be aware that their interaction is affected by cognitive dissonance and distance. Incongruence in the decision-making approach and varying levels of communication affect the sharing of tacit knowledge. The fear and success theme underlies the evidence that lack of experience and differences in background moderates their interactions. However, through the learning and expectation themes, the temporal and growth aspects of their interrelationship adds to our understanding of how organizational learning takes place.

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6

The Cognition-Success-Attribution Cycle

6.1 Introduction

This chapter provides an interpretation derived from the empirical evidence that cognitive diversity and bias as well as differences in perception and expectations have an impact on entrepreneurial-senior manager interrelationships in established entrepreneurial organizations. The cognition process includes strategic decision making, opportunity recognition, and exploitation, while specific biases relevant to this work include planning fallacy (Kahneman and Tversky 1979; Buehler et al. 2002), over optimism, representativeness, (Kahneman and Frederick 2002) and counterfactual thought (Miller and Taylor 1995). Evidence suggests that entrepreneurs are more susceptible to these biases than other populations but all parties failed to recognize the significance of these differences in entrepreneur-senior manager interrelationships in the context of established entrepreneurial firms.

For the purposes of this work, success is defined by the firms themselves in order to gain rich and relevant data. The evidence derived from between 15- and 28-year-old firms, is that these firms have continued to grow sales

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and profit, develop and design new technology, increase recruitment, and gain market penetration over this period. Attribution of these successes varies across the entrepreneur and senior managers being interviewed, and across the twelve-month period of the interviews.

In addition, the Icarus Paradox (Miller 1992) metaphor provides cognitive and organizational insight into the cognition-success-attribution cycle and the evidence shows how entrepreneurs build support and commitment over a period of time. However, the ability of the entrepreneurs to interact with senior managers and convert tacit knowledge to useful information for the senior managers who lack adequate experience is shown to moderate their interrelationship. Kahneman and Tversky's cognitive dual System 1 (intuitive) and 2 (reflective) is used to analyze and explain the data in this chapter.

By combining disparate concepts in the conceptual framework this chapter presents new meaning and understanding of each interrelationship derived from the empirical data for each firm. This includes a description of each firm and includes two science-based entrepreneurial firms, Firm A and C, and an electronic engineering firm, Firm B, in the Phase II of the analysis. Empirical findings derived from Firms A, B and C are presented. The entrepreneur and senior managers were each interviewed three times in Sets I, II and III. Direct quotes in *italics* from the entrepreneur and senior managers present a glimpse of the interview. The textual function of Boxes 8.2–8.7 was to enhance text that I regarded as significant in order to focus attention, and supplement the data presented. The text boxes individually or collectively do not have a conceptual purpose. The lexicon used in the direct quotes, text boxes, and text are the precise words that the participants used the majority of the time. It presents the data directly as it was captured.

The codes and job titles of the four senior managers in Table 6.1 reveal the job titles of senior managers. For confidential reasons the firm names have been replaced by Firm A, B and and senior managers by SM1 up to SM10.

Table 6.1 Senior manager job titles

Firm	Senior manager	Job titles
A	SM 1	Managing director
	SM 2	Finance director (and entrepreneur's wife)
	SM 3	Operations director and laboratory manager
	SM 4	Quality control administrator
B	SM5	Marketing coordinator
	SM6	Financial controller
		Managing director
C	SM7	Group head
	SM8	Group head
	SM9	Senior project leader
	SM10	Group head

The evidence across the themes showed a lack of sensemaking (Weick 1979) by the entrepreneurs and an expectation that the senior managers aligned with his thinking in spite of their own experience. In limited examples the entrepreneur has successfully imprinted his thinking and 'way of doing things' which can be likened to storytelling in transgenerational entrepreneurial research (Marquis and Tilcsik 2013; Jaskiewicz et al. 2015) and explains how and why entrepreneurial processes and practices have been retained for up to 28 years in Firms A and C.

Firm B, Senior Manager

I would say "You know I'm concerned about this, how do you feel about it" and, try to get him to make the decision.

Senior manager alignment is characteristic of (Miller's 1992) configurations in corporate organizations where success is partly due to elements fitting together. The analysis illuminates the tension beneath the surface that is eroding growth and performance in spite of the existence of seemingly successful configurations.

Firm B, Entrepreneur

> *That decision making process once I've decided something, and once we've gone through it, then I do expect it to be carried out. If somebody goes against it, then the best for them to do is to take a long vacation from the office or out of my vicinity.*

This quote is a reflection of the self-centered nature of the entrepreneur that is based on successful decision making and the expectation that the entrepreneur is in control of decision making. However, the energy and focus required to build an organization as the entrepreneur had done, required a single-minded approach at the cost of interrelationships (Miller 1992). This historical success exerts pressure on the predecessor-successor relationship to continue to grow and perform by seeking new opportunities and thinking entrepreneurially.

After twelve-months, entrepreneurial expectations and learning had shifted in Firms A and C due to further imprinting of entrepreneurial processes and the release of control by the entrepreneur. In addition, in the cognition-success-attribution cycle the senior manager was able to utilize some of the knowledge that was proven to be successful through successful organizational projects.

Failure to share and transform valuable tacit knowledge can be lost as the organization transitions from the entrepreneur to senior managers in established firms. When considering that more than ninety percent of knowledge resides inside people's head (Lee 2000; Smith 2001) this poses a challenge when considering the difficulties entrepreneurs have communicating their cognitive processes in their interaction with senior managers.

The CEO senior manager had more autonomy and senior managers' cognitive differences became more acceptable.

The senior managers have been referred to as SM throughout this and subsequent chapters. The following Box 6.1 summary of firm profiles in this work and provides an insight into the entrepreneur's and senior manager's background.

Box 6.1 Summary of Entrepreneur and SM Profiles

Firm	Profile
A	**Entrepreneur** The entrepreneur in Firm A is a biologist and has a chemistry degree. He now acts as the Chairman for the organization, but is gradually handing over responsibility for running the organization to the Managing Director, Senior manager 1. He worked for a large corporate pharmaceutical company and learned about the industry from several different jobs before deciding to start his own business. He spotted an opportunity to offer services to the pharmaceutical industry in outsourcing the formulation side such as tables, capsules, and aerosol markets which no one else was doing at the time **Senior managers** SM 1 was acting as the MD, and taking over the role from the entrepreneur. He first started in the organization 18 years ago in the lab while doing a chemistry degree part-time, but left to work in Sales and Marketing for a large scientific equipment provider. He spent six years gaining experience in other organizations and returned to work for the entrepreneur seven years ago in a business development role. He recently took over the MD role, which he and the founder had spent several years planning for in their succession management discussion. SM 2 is the wife of the entrepreneur and is the Personnel and Finance Director. She had worked in the organization since it started, is a board member and interacted daily with the entrepreneur SM 3 is the Operations Director and Laboratory Manager who has been with the organization for six years. He was responsible for all the operations, formulation activity, analytical work, and reported directly to SM 1 and then to the entrepreneur. Although his reporting line is directly to the MD, he had daily interaction with the entrepreneur on strategic guidance and decisions SM 4 is the Quality Control Administrator and had been with the organization since 1992 and worked with the entrepreneur in a previous organization. Although she was not part of the Senior Management team like the other senior managers, she was mentored by the entrepreneur who was a technical support for her. She interacted with him regularly in a mentoring capacity. She worked with the Quality Manager and reported to SM 1 directly for operational issues
B	**Profile of the Entrepreneur** The entrepreneur in Firm B undertook building studies at university, but left after a year and started a six month placement as a trainee manager in a construction organization. He gained practical experience by working on sites as a manager, and two years later left to work for another subcontracting organization. He was promoted to run a £30 million budget as an Estimating Manager until the recession in the 1980s, and then decided to start his own business after completing his Chartership in building

(Continued)

Box 6.1 (continued)

Firm	Profile
	Senior managers
	SM 5 reported directly to the entrepreneur in his role as Marketing Coordinator. He joined the organization after completing a Degree in Engineering Management, and was moved to the Marketing Department after starting in Administration. He worked with the entrepreneur in developing the marketing plan and ran the Marketing Department
	SM 6 worked for a Chartered Accountancy firm, and was now the Financial Controller reporting directly to the entrepreneur. He worked with the entrepreneur for approximately 13 years in his present role and his previous accountancy organization combined
C	**Entrepreneur**
	The entrepreneur in Firm C is a physicist who gained experience working for a £2 billion pound turnover organization that developed software and technology for aerospace suppliers and other clients. Following that, and during the recession of 1979, he worked as a consultant in Research and Science. After he had gained experience in areas such as display technology and imaging, he decided with 22 other founders, who worked in the same consultancy, to start their own business. He was the only founder remaining in the organization and was handing over the managing of one of the groups to SM 7
	Senior Managers
	SM 7 was in the process of taking over as MD for one of the groups within Firm C. He was a physicist and had joined the organization 13 years earlier. Previously, he worked briefly in the telecommunications industry gaining commercial experience, and was now responsible for running the day-to-day activities of the group and taking over responsibilities from the entrepreneur
	Senior manager 8 (SM 8) was a physicist who had been in the business since 2003 and now ran one of the technology groups. He reported directly to the entrepreneur and indirectly to SM 7. He managed 27 consultants and three support staff
	Senior manager 9 (SM 9) had been with the organization for 13 years and was now responsible for business development and Technology Development for one of the groups in Firm C. His Japanese work however spanned the other six groups. He interacted with the entrepreneur with regards to this market and reported to SM 8.
	SM 10 was a physicist who had joined the organization in 2002. He worked as a Senior Project Leader and reported to SM 8 in one of the groups within Firm C, but he also interacted with SM 7 and the entrepreneur on strategic decision making. His role also involved business development

The results below provide insights into the interplay between entrepreneurial cognition and senior manager perception specifically the cognition-success-attribution cycle over a period of 12 months of interviews using the codes derived from the findings.

6.2 Set I: January–April

Firm A

Set I presents the findings of the interviews, which took place between January and April 2011 with the entrepreneur and four senior managers.

Decision Making, Alertness, Information Gathering, Pattern Recognition, Insight, Experience, and Opportunity Recognition

The entrepreneur gathered information that he regarded was necessary for a decision, depending on the available time. He did not believe in procrastinating, or regretting a decision that was made. This thought process was confirmed by SM 1 and SM 2. SM 1 felt that the entrepreneur did not ever reflect on whether he had made a "wrong or right decision", and that that kind of reflection was not part of the entrepreneur's thinking process. Although SM 2 admitted that, unlike the entrepreneur, she did go back over past decisions, and reflected on what she could have done differently.

The entrepreneur's process of decision making was made before he consulted with others on their thoughts, and this was confirmed by SM 1, but contradicted by SM 2 in the first part of the interview who believed that she was part of his decision making process. However, later in the interview, SM 2 changed her opinion supporting what both the entrepreneur and SM 1 had said.

SM2

> *He will have the decision made, he may have the decision a lot earlier than he tells you, but he will be churning it over, if he's sure its the right decision but he won't say anything.*

> *I don't think he actually talks about it until he knows about it himself so when he starts to talk about it he's already thought about the pros and cons, so yes he will come across as quite confident, because if he's dismissed it himself, he wouldn't tell you about it.*

When the entrepreneur was faced with moving jobs before he started the business, he did not spend time considering the "what ifs" or regret his decision. He took action "into the unknown" without looking back, by gathering available information, rather than delay a decision in order to gather more information. SM 4 said the entrepreneur did not make quick decisions. In this example, biasing subjective expectancies represents entrepreneurial counterfactual thinking and he doesn't use past experiences to stop him from involving himself in future events and possibilities.

SM 2 felt that he was very open and strong in his decision making and persuaded people around him to his way of thinking. SM 2 and SM 3 both said that the entrepreneur was an analyst by heart, very analytical in his decision making, and confident in his decision-making process, although he also used his intuition when decision making.

SM 1 confirmed that the way the entrepreneur went about gathering information was limited, and saw it as problem that he made decisions without gathering enough facts. This was contradicted by SM 2 and SM 3, who argued that the entrepreneur only "worked on facts" when making a decision, and SM 4 who said that the entrepreneur definitely gathered "lots" of information when making a decision. However, SM 3 added that the entrepreneur made quick decisions without sometimes having the facts. He used the example of the entrepreneur who advised an analysis after having heard only 10 % of the story. The difference in perception from the senior managers is that they each experienced a different context in which the entrepreneur was moving between cognitive duality System 1 and System 2.

SM 1 however also regarded the entrepreneur as partly analytical in his decision making, citing the use of key performance indicators to explain how important the measurement of performance was to the entrepreneur. The reason SM 3 gave for the entrepreneur needing the facts to make a decision was based on the highly regulated and compliance nature of the pharmaceutical industry, which he and the entrepreneur understood more than the other senior managers. SM 1 also argued that when the entrepreneur made decisions on gut feeling, such as the example of building the manufacturing suite, he had not accumulated facts in order to weigh-up the decision to build the manufacturing suite. The entrepreneur's use of intuition was supported by SM 2 who added that the entrepreneur could see things that others could not. This is an example of planning fallacy (Kahneman and Tversky 1979) in which the predicted time was shorter than the actual completion time of the manufacturing project due to the entrepreneur's optimism. The entrepreneur believed that the time taken to deliver the project on time and in budget was shorter, reflecting the representative bias in which there is a difference between judgment and perception. According to SM 1, the entrepreneur did not use financial calculations to decide on whether or not an opportunity was a viable option, and regarding the manufacturing suite project, he had already made a decision to proceed before he spoke to SM 1, SM 2 and SM 3. SM 4 argued that the entrepreneur took people's view into account, but "will go for it" when he decided to. In this example the entrepreneur used intuitive thinking derived from past experience which was biased. The senior managers perceived the entrepreneur to be representatively biased because he used pasted experience to decide on the manufacturing project even though the parameters were different. From the psychological perspective, the entrepreneur used dual cognitive processing which means that he used intuition and reasoning. However, the senior manager was not aware of this dual process and was only able to derive conclusions based on the entrepreneur's behavior. Evidence of the collection of facts and reasoning was confirmed by SM1. SM 1 established that the entrepreneur collected facts and figures when making decisions to purchase equipment, but not when it involved people and things in the organization. But he added:

SM 1

> *He'll quite often have a preconceived idea of how it should have worked or should work and will not always necessarily gather all the information to see whether he was right or wrong,*

In making a quick decision about moving to bigger premises for expansion purposes, the entrepreneur evaluated the potential downside first, such as whether the organization could afford it. But part of his decision-making process was to also evaluate the downside of "not making the decision". Although moving into bigger premises was a financial risk, the entrepreneur felt confident about the future, and the move ended up doubling their income. He was already looking at new premises for their next move. He appeared to be thinking ahead of the other senior managers.

Box 6.2 Decision Making

The entrepreneur recognized that he drives through decisions in a singular way, and sources information for a decision himself rather than asking senior managers. The entrepreneur evaluated the potential downside first.

Although SM 2 perceived that the entrepreneur did not "push" people into agreeing with his decision, but rather persuaded them towards his decision. She also felt that he was open to change and discussion if his decision was not agreed with. This process of sharing his decision-making process with her before making a decision was not experienced by SM 1 and not mentioned by the entrepreneur. In his decision-making process the entrepreneur evaluated employees' capacity to cope with information, and did not take a risk on those that he believed could not handle the information. The entrepreneur used both System 1 and System 2 cognitive systems in his decision making by being automatic and controlled in his actions.

The entrepreneur felt that there were very few people who were able to see and act on an opportunity in the way that he did. He was able to see the potential in the development of a new product, which was not yet an obvious product for the organization to develop.

Box 6.3 Opportunity Spotting

However, SM 1 felt that the entrepreneur was no longer involved in spotting opportunities, although he was an alert individual. He believed that in the past the entrepreneur was involved in spotting opportunities that involved growing and expanding the business, but was limited in terms of spotting new services and doing different things.

SM 1 said that the business had provided the same core services for 20 years. SM 1's view was contradicted by SM 2 and SM 4, who mentioned that the entrepreneur was always alert and looking for opportunities, and that the majority of the time the entrepreneur's ideas were taken forward. SM 4 suggested that other senior managers saw the entrepreneur sitting at his desk and were not aware of what he was involved in.

Issue domain 'Recruitment' was an important aspect of growth for the organization and the entrepreneur believed that their new strategy to attract self-motivated, driven, and ambitious people was leaving a gap in their resources.

Entrepreneur

We're looking now for the people who are willing to take those things on and who are willing to put themselves forward …unfortunately they are quite thin on the ground.

SM 1 felt that new appointments should be made from the recruitment of people internally. He added that this process could be used to develop existing employees. The entrepreneur's experience and familiarity with the industry enabled him to take risks with issue domain 'Manufacturing' and believed that it was an opportunity to increase their offer to clients. He was optimistic about it as an area of expansion. It was not normally part of the organization's service offered to clients; however, he anticipated that the manufacturing suite would enable them to increase their size to potentially five to 10 times bigger than it was. Even though the entrepreneur had taken a risk by building the new manufacturing suite, he took a calculated risk with regards to "hedging his bets" by continuing to provide the industry with their normal services as well.

Box 6.4 Entrepreneur's Experience

The entrepreneur made a judgment to go ahead. He was still able to see how it fitted into the business model and use his confidence to make a decision that did not specifically relate to his experience.

SM 1 considered this to be "pre-judging" without sufficient information, and instead believed that the entrepreneur based his decision making on his experience. He added that the entrepreneur used general experience to make a decision rather than specific manufacturing experience.

Although the entrepreneur claimed to rely on his "gut feeling" when he decided to build the manufacturing suite, SM 1 said that the entrepreneur would still want to know the facts and data about how they would achieve growth in financial terms once it was built. SM 4 confirmed that the entrepreneur's decision making was definitely informed by his experience.

SM 1 said he could not visualize the size or shape of the organization, but he knew the type of clients and projects that would be needed to make it successful. Although he regarded himself as instrumental in making the manufacturing suite happen, he said it had been in the business plan for years and no one had done anything about it.

SM 2 also said that she was skeptical about the manufacturing suite and the amount of investment needed to build it and finance the running costs. She said that although many staff were against it, the feedback from clients had been very good. SM 4 also felt that the time and money required to provide the manufacturing suite had been underestimated, and that starting it was the entrepreneur's hardest decision.

SM 1 believed that the entrepreneur was risk-averse, and that his opportunity- spotting ability was constrained by this, as well as by his experience. He added that although the entrepreneur would have taken risks in order to build the business initially, due to his age he was now risk-averse.

Optimism

SM 1 regarded the entrepreneur as a realist, not an optimist or pessimist and suggested that he was a balanced individual. SM 4 felt that he was generally an optimist, although he was even-tempered and didn't show much about how he felt.

Interaction and Relationships

The entrepreneur interacted with senior managers with regards to several issues within the organization. He would discuss strategic issues, such as short order books and lack of sales beyond three months, with SM 1, 2, and 3, who were on the management team, but not with SM 4. He believed that people preferred not to know the risk to their jobs, and controlled the information that was disclosed to staff who were lower down the organization.

In terms of the entrepreneur's interaction with the senior managers about the 'Manufacturing' issue domain, he made the decision himself to take the risk. With regards to the senior managers at management level, the entrepreneur discussed the business plan and his thoughts about the expansion into the USA.

Entrepreneur

> *I could make the judgment calls on those and …tip the odds in our favour. I suppose it might just be a random decision on my part…or that's where I feel I'm moving to, so getting outside of the comfort zone and moving into.*

SM 1 interacted daily with the entrepreneur and believed they had a "brilliant" relationship, and SM 3 believed his interactions on technical issues with the entrepreneur led to mutual agreement. Although, SM 3 said that on strategic issues the entrepreneur had the final decision.

SM 1

> *I think with him* (*the entrepreneur*), *he has his decision and that will be the way it is done. He has already made his decision or his mind before he gets all the information. I will tend to listen to more opinions than perhaps he* (*the entrepreneur*) *does.*

The entrepreneur's opinion was that there were people in life who didn't make decisions and then regretted it later. SM 1 felt the entrepreneur interacted differently and altered his information gathering and decision-making processes, depending on whom he was talking to in the management team, and the content of the communication. This was confirmed by SM 3. SM 2 said that he could influence the entrepreneur, but that the entrepreneur would still make the final decision. However, when there was a problem to discuss, the entrepreneur and SM 1 would come to a consensus on what to do. SM 3 also felt that the entrepreneur would ask him for his input into strategic decisions.

Box 6.5 The Factors Affecting Interactions

SM 2 said that the entrepreneur was not good at accepting peoples failings, and that in his interactions with senior managers, some would get defensive and feel criticized by his frustrated response. SM 1 felt that issues that could affect their relationship would be a lack of confidence and a disagreement on how the organization should grow.

SM 1 thought that the company was improving and things were changing for the better, which was confirmed by SM 3 who felt that the organization was experiencing increased levels of new employees, a larger market share, and new product development opportunities.

SM 2 noted that the laid-back attitude of the entrepreneur affected the interactions with senior managers in a positive way. SM 3 confirmed that the entrepreneur was very good at stepping back, and trying to find ways around the pharmaceutical industry regulation on new and existing product development without getting too concerned about it, while other senior managers would be concerned by this relaxed approach. On occasions when SM 2 had reflected on the "what ifs" of a decision she made, the entrepreneur was quick to dismiss it as something she had no control over and to move on.

Interactions between the entrepreneur and SM 3 involved him sharing the entrepreneur's experience and getting his input into operational issues. SM 4 received mentoring and technical support regularly from the entrepreneur. In her experience he was a good communicator and challenged her thinking.

Issue domain 'Succession' was discussed throughout the interview with both the entrepreneur and SM 1. SM 1 felt that the entrepreneur was slowly allowing him to make decisions, by reducing his time in the office and gaining confidence in SM 1's ability to make decisions. This indicated that the entrepreneur was gradually managing the succession process. Although SM 2 added that the entrepreneur was still trying to run the organization as the one he had envisaged, but was aware that it would change as he took more of a backseat. She felt that with the entrepreneur stepping out, it would become more like the bigger corporations in their industry with structure, systems and process, and less communication between senior managers.

SM 3 had also experienced succession issues with the entrepreneur who did not always agree with his approach, but he felt comfortable challenging him.

SM 3

> *I think sometimes he (the entrepreneur) maybe doesn't like some of the ways that I achieve things erm …I suppose the proof is in the pudding sometimes, but then …erm…I think that maybe he (the entrepreneur) would do things in a different way but he's happy to let me do that.*

He perceived that the strategic direction, and also the senior management team, were heavily influenced by the entrepreneur. Although this view was supported by SM 4, she said that she was more forward planning in her thinking than the entrepreneur.

SM 3

I think one of his (*the entrepreneur*) *biggest concerns is succession management erm…and where the next experts, in particular techniques or specialists in particular areas are coming from.*

Firm B

Decision Making, Alertness, Information Gathering, Pattern Recognition, Insight, Experience, and Opportunity Recognition (Q1)

The entrepreneur was very practical in the way he saw things. He said that he didn't understand the conceptual elements of a process in the same way as the practical ones. This was confirmed by SM 6 who said that the entrepreneur preferred visuals in his presentations and reporting.

SM 5

He (*the entrepreneur*) *is very analytical in his decision-making process. He does not make snap decisions, and is very cautious in his decision-making process. He gathers as much information as he can.*

The entrepreneur thought that he should made quicker decisions. He added that people probably thought that he made quick decisions because they were not aware of the length of time he spent thinking about it before he decided. Although, this was not the Firm with SM 5 who recognized that the entrepreneur gathered information and took his time to make decisions.

SM 5 added that the entrepreneur made decisions based on experience rather than intuition, and that the entrepreneur would "rule out ideas" which had not worked in the past, even if SM 5 suggested doing it a different way to the one the entrepreneur had experienced. SM 6 felt that the entrepreneur was good at reading people, and that he understood the psychology of behavior. He was impressed with his attention to detail in his interactions and observations.

The entrepreneur believed that most decisions involved a financial aspect and therefore would ask SM 5 and SM 6 to find the information he wanted, which they confirmed. He trusted SM 5's judgment, and said that SM 5 and SM 6 would not bring him information without considering all the options.

Entrepreneur

> *They know never to just bring me one set of answers, or what they think. I always look at the 'what if factor', what if something goes wrong. How are we exposed, what are the upsides, what are the downsides, to try and think about all that before I can make a decision …*

SM 6 felt that the entrepreneur didn't realize that all decisions were controlled by him. He said people were fearful to make decisions independent of the entrepreneur even though he and the entrepreneur believed that they should.

SM 6

> *I know what information I need to give him for him to make a decision. If I'm kinda quite vague or don't work out figures or things… he's quite analytical in the way that he looks at things, so rather than me saying this is what I want to do and this is what I'm hoping to achieve, I'll give him an idea or I'll give him two ideas, compare them. Do all the thought processing, so he can make a quick decision.*

SM 5 mentioned issue domain 'Technology' and said that he wanted to update the web presence for the organization. In order for the entrepreneur to make a decision, SM 5 had to provide the entrepreneur with financial and research details on the viability of the idea. The entrepreneur paid special attention to the financial requirements of any marketing project SM 5 brought to him.

The entrepreneur collected and assessed the information he received, irrespective of whether it was a decision about a photocopier purchase or a strategic decision. He admitted that he knew what he wanted, and would not be able to sit down and collect the detail himself, but that asking SM 5 and SM 6 to collect the information was the best approach for him because of his lack of patience.

Entrepreneur

> *When I set off at the start of it, I think I know the answer and therefore what I suppose I'm trying to do is justify the decision, and the answer that's going to come out at the end process, but I do feel I have to go through all those steps to do the research.*

SM 6

> *He has probably made a decision, not based on that, based on either a general feeling or conversations with people, and then he would look for something to support that.*

The entrepreneur made a decision after weighing up all the eventualities rather than acting on a 'hunch'. He did not explain the reason for his request to the senior managers and believed that they would eventually see what he could see later on in the process. He wasn't sure that they would arrive at the same decision that he would if they were given the same information, but tried not to influence their thinking. The entrepreneur said that he would allow the senior managers to decide for themselves, and even if they came out with a different decision than his, he still considered it. This was contradicted by SM 6 who said the entrepreneur was the person who made all the decisions.

Entrepreneur

> *That decision-making process once I've decided something and once we've gone through, then I do expect it to be carried out… if somebody goes against it… then the best for them to do is to take a long vacation from the office or from out of my vicinity.*

The entrepreneur always looked for opportunities for the organization to run more efficiently, in contrast to the other managers who did not attempt to improve the systems and processes in their sales role. SM

5 confirmed that the entrepreneur's view was that some people in the organization worked because they had to, not because of a desire for job satisfaction. SM 5 felt that the entrepreneur was constantly bringing new ideas to the organization, but the execution and implementation of the ideas did not always happen, because he would change his mind. SM 6 confirmed that the entrepreneur was actively involved in spotting new opportunities, such as marketing the business and the brand name.

SM 5 used the idea of issue domain 'Technology' to describe how he had been "pushing" a technological change for the Marketing Department for several years. However, after the entrepreneur had heard from another organization that a technological change they had implemented had failed, he changed his mind about implementing it in the organization. SM 5 went further and said he had been trying to get the entrepreneur to engage with issue domain 'Technology' since he started working in the organization, and that although the entrepreneur had bought into the idea after two years, SM 5 believed that the entrepreneur did not like change. SM 6 confirmed that the existing technology to support the issue domain 'Sales and Technology' was poor and inadequate. Although the entrepreneur regarded his decision making as analytical, SM 6 argued that, unlike him, the entrepreneur made decisions based on people rather than financial numbers. Like SM 5, SM 6 was always trying to work out what was behind the entrepreneur's questions and understood his thinking because of the length of time they had worked together.

Optimism

SM 5 cited that although the entrepreneur tried to be positive, he sometimes came across as being negative. Issue domain 'Sales and Marketing' affected how positive the entrepreneur was. He supported his view that if sales were down that month, the entrepreneur could not hide his negativity. SM 6 said that the entrepreneur always insisted that the management team had a positive outlook and impression, irrespective of the sales figures dropping below expectation.

The entrepreneur's attitude had been negative since Set I interviews because of the financial and operational difficulties. IS 6 mentioned that recently the entrepreneur had become more positive and added:

SM 6

He's been realistic about 'yes this is a big change for us, and ok I'm going to keep positive and keep motivating people and keep it going as we are heading in the right direction,' but I think it will last a number of months. The only time it wouldn't last is if, by probably the next 4 or 5 months, there hasn't been any positive change in the figures, if we're still floundering around you know, then he would.

Box 6.6 Entrepreneurial Atmosphere

The atmosphere created by the entrepreneur affected all the employees, including SM 5 and 6. SM 6 felt that the entrepreneur was an optimistic person who didn't like negativity. He emphasized the fact that if the entrepreneur was negative, everybody in the office would pick it up.

Interaction and Relationships

SM 5 felt that the entrepreneur did not change his opinion if someone disagreed with him, and that he was confident in his ability to do any job within the organization. He said that even though the entrepreneur might say he agreed with someone else's decision, they always ended doing what he wanted to do anyway, and they might not even realize it. SM 5 had witnessed people starting with a lot of ambition and then being deflated after six months because the entrepreneur did not want to implement their ideas.

SM 6 stated that the entrepreneur took his opinion into consideration much more since the senior sales director, who had been with the organization for ten years, had left. The entrepreneur interacted with SM 6 and felt confident that they knew each other well, because of their history together. He felt that SM 6 was committed to the organization, responded quickly and prioritized him when something needed to be done and delivered on time.

The entrepreneur dealt with employees very directly and firmly, and pointed out to the Sales Managers how they could improve their service to clients. Their interaction was confirmed by SM 6. The sales team was unable to see how they could make the improvement until the entrepreneur had shown them.

Box 6.7 Entrepreneur's Comment on the Interaction

I'm not very tolerant (pause)…I'm not very tolerant of people who don't put the effort in erm….I'm not very tolerant of people who only go through a process half-heartedly… if you are gonna do a job, I think it should be done properly.

SM 6 remarked "he gets a heckava lot out of his staff", but included that 99 % of his interactions were with the management team and not employees. SM 6 felt that he drove the organization to make a profit for himself, and not to put it back into the organization, but he didn't think other people in the organization realized it.

Entrepreneur

> *They don't really have to come into contact with me other than in a smiling way if they are doing their job properly, if they are not doing their job properly and we are letting down the clients or we are not delivering internal service to other departments or anything…then I'm probably not the person they want to see…*

The interactions with the entrepreneur were affected by how hard employees and senior managers worked, and how committed they were. SM 5 stated that the entrepreneur had "pulled him around" to his way of thinking, and that the entrepreneur rewarded loyalty. He said that, as SM 6 confirmed, his clients and employees felt that he was a very hard person to deal with, because his standards were so high and he had high expectations of people. The entrepreneur commented that his role was not one to be liked, but he ensured that employees had a salary each month. He wanted employees to take responsibility for their work. The entrepreneur believed that everybody should be able to see the obvious things, such as following up on a client and supervising people on expensive contracts rather than leaving them on the site alone.

SM 5 always used the entrepreneur's thought process when he was selling an idea to him, and that being on the "same wavelength" enabled a quicker agreement from the entrepreneur. He felt that working with the entrepreneur had influenced and focused his thinking. SM 6 confirmed that the entrepreneur would run any new ideas through SM 5. However, SM 5 felt that it was difficult to change the entrepreneur's mind even if he presented a strong argument to him on a particular issue.

SM 5 revealed that the entrepreneur kept people "on their toes" and put people under pressure to deliver in a quicker time frame. SM 6 added that "there was a lot of fear" of the entrepreneur in the organization, but believed that the organization was successful because of his actions.

The biggest impact on interrelationships was the sales and invoice white boards which showed whether the monthly sales were low at £300 000 or high at £500 000. The entrepreneur monitored these figures and was generally positive when they were high.

SM 5 felt that the entrepreneur told him what he wanted to hear with regards to changing his present role, rather than making changes that made a difference to him in a substantial and sustainable way. This resulted in SM 5 "switching off". He said that although the entrepreneur said he trusted the management, including himself, he didn't think the entrepreneur trusted that anybody could do the job as well as he could.

SM 6 believed that if he mentioned something to the entrepreneur he would consider it and listen to his opinion. Although he admitted that his interactions with the entrepreneur were too intense at times, and that the constant pushing did not motivate him.

The entrepreneur mentioned the issue domain 'Sales and Marketing', and the difficulty he had getting the sales team to see that they should treat a sales order like cash and say thank you immediately for the work.

The entrepreneur had difficulty getting employees to take responsibility and be accountable in their jobs. This did not apply to IS 5 who felt that in his new role he enjoyed more responsibility, he felt that he was not motivated by "having a job". He also felt that the entrepreneur did not understand what motivated him.

IS 5

He does not think other people would care as long as they have a job.

The entrepreneur stated that when the company was smaller it was easier to monitor and measure employee's performance with regards to client relationships and the jobs. He added that increasing new clients resulted in a large number of errors and in demoralized employees. In contrast, IS 5 declared that the employees were demoralized because of the lack of information about the changes the entrepreneur was making with regards to issue domain 'Recruitment'. The entrepreneur had tried several times to explain to the engineers the importance of timeliness with clients and the importance of following up on client contacts, but that they still did not understand. He believed that he had to always put pressure on them to pay attention, which resulted in them thinking he was being hard on them. He added that even management could not see the importance of having clean vans, even though their clients could. IS 5 noted that the entrepreneur had hired the new Sales Consultant to help him manage these aspects of the business. However, he was not certain whether this was the to the firm's advantage.

The entrepreneur revealed that he was always fire-fighting and made several changes in the Sales and Marketing departments. He mentioned issue domain 'Technology', and said that Sales Managers were using manual systems, and that when they left he hired new people and gave them laptops to work with. He said that the sales staff who had been with the organization a long time were reluctant to look for new and improved ways of working.

IS 5 mentioned his frustrations with all the organizational change which included issue domain 'Recruitment'. He did not know what the organization structure was and he didn't believe that the entrepreneur knew either. He felt that his interactions with the entrepreneur involved several hours of communication, but often left without an answer to his question. IS 5 had noticed that although the entrepreneur always presented the organization's performance, he did not communicate the real reasons behind what he was doing. IS 5 and IS 6 believed that the entrepreneur was aware of the impact of what he was doing, but not the impact it was having on the organization.

Firm C

Decision Making, Alert, Information Gathering, Pattern Recognition, Insight, Experience, Opportunity

The entrepreneur said that he no longer thought about his decision-making in the same way he had done 30 years ago. He now "just did it instinctively". He felt his experience enabled him to make decisions, although he added that he constantly read new information and integrated it into his existing knowledge and experience. The entrepreneur noted that at his age he had a lot of experience, and that the way he internalized new information was not going to change now.

Attending negotiating and sales courses in the past was part of his accumulation of knowledge, but he added that he was naturally good at these aspects. However, the courses had given him extra confidence and a new perspective to what he was doing. SM 10 confirmed that the entrepreneur was always reading internal material to provide insight on the organization and to “stay on top” of what was going on.

The entrepreneur cited that successful people made relevant decisions for their environment and that the more correct decisions he made, the more confident he became in his decision making. He mentioned issue domain ‘Recruitment’, and said that he was still involved in the interviewing process, but only if SM 8 and other senior manager were going to offer the recruit the job.

Entrepreneur

> *I would say, you know I'm concerned about this, how do you feel about it? I try to get him to make the decision.*

The entrepreneur stated that he and SM 7 would make a decision after reviewing the interview and the candidate’s experience, while other managers and senior managers involved others in the decision-making process. He believed that senior managers did not want to take responsibility for the decision on whether to recruit because they lacked experience. He added that by asking the recruit the right questions in a short space of time, he could work out a candidate’s suitability for the job. SM 7 felt that the issue domain ‘Recruitment’ would not react well to external people being recruited into senior roles within the organization.

The entrepreneur noticed that employees, senior managers, and Group Heads wanted to do things according to processes, but that approach limited their ability to look for new opportunities. The entrepreneur had seen an opportunity to restructure the organization a few years ago and SM 10 declared that the entrepreneur changed his role without his input. The entrepreneur regarded his decisions about risk as "managing the downside and the upside" and believed that the organization took risks but managed the downside. He felt that a lot of the organization's risk was contractual, and in negotiation with a big USA client he refused to take on all the risk and insisted that it was shared with the client.

Entrepreneur

> *This is a multi-billion dollar, multi-national company and I just dig my heels in and eventually they gave up you know…and they, they accepted so we agreed.*

SM 7 and SM 10 felt that the entrepreneur's decision making was informed by his experience.

SM 7

> *He has a huge amount of experience, and he often calls up examples for me. I don't have the same level of experience so I tend to be more analytical and wanting to get to the facts.*

SM 7 felt that the entrepreneur used to be less risk-averse in his decision making, but that he was now the "arbiter of risk", and could not work out if it was due to his age or that he wanted a good argument to justify the risk. He added that he was more analytical in his decision making and that the entrepreneur looked at the cultural aspects of the decision. SM 7 used the entrepreneur's thinking process when it came to helping other senior managers present an opportunity to the entrepreneur by "packaging" the idea for him. SM 8 noted that the entrepreneur was emotional in his decision making and preferred to "talk things through" which SM 10 confirmed.

SM 7 said that the entrepreneur did not make decisions when asked. This was confirmed by SM 8, who added that the entrepreneur had an instinct about what the decision should be, but hesitated to give the answers. However, SM 8 added that the entrepreneur could also be directive if he didn't agree with something.

Optimism

SM 8 didn't think the entrepreneur was optimistic, but instead thought that the entrepreneur was confident, and didn't wear "rose tinted glasses" about the future. He added that his confidence was justified by his experience. SM 10 said the entrepreneur was optimistic but not "reckless".

Interaction and Relationships

The entrepreneur revealed that he gave the Group Heads the freedom to take risks, but because all employees, senior managers, and Group Heads were shareholders, they were reluctant to take a risk with a big downside. For example, the entrepreneur made Group Heads go back to clients and renegotiate a better deal, in order to spread the risk between the organization and the client.

Entrepreneur

> *When you put some steel in their spine and they go back and say sorry we can't do that and they still get the contract.*

The entrepreneur expected people to "use their brains" when thinking about Health and Safety issues because the organization developed potentially dangerous products. He added that his approach was hands-off and that he had minimal interaction in operational issues, although he did get actively involved when SM 10 was dealing with a difficult client. SM 7 supported the entrepreneur's view that the senior managers should be making their own decisions, and SM 8 felt that he had freedom to make his own strategic decisions.

Box 6.8 Aligning Decision Making

The entrepreneur preferred to influence the business without directing it and wanted his interactions with employees to be based on what they thought was the right decision, and not what he thought was the right decision.

The entrepreneur's interactions with the organization involved ethics, charities, facilities, Health and Safety, values, and challenges anybody faced. However, SM 8 preferred that the entrepreneur gave him clarity about underlying principles of what he was expected to do, instead of "rambling on".

Box 6.9 Interrelationships

SM 8 felt that the entrepreneur was not a "relationship person", and that many people in the organization did not understand him.

SM 7 and 10 confirmed that the entrepreneur would speak to people in the office corridors, but that he interacted mostly with senior managers and Group Heads, although he added that the entrepreneur kept a strategic eye over the printing group. The entrepreneur spoke to SM 10 about big projects when he saw him in the corridor.

SM 10

His ambition, his drive, I think that that is a mystery if you like.

He added that the entrepreneur's interactions with the senior managers and Group Heads were unstructured and explorative in nature, and was more of an opportunity to exchange ideas and communicate, than providing them with strategic direction.

SM 7 said that the entrepreneur liked to think that his role was more strategic, however he thought that he provided a source of insight because of his experience. SM 8's interactions with the entrepreneur was a two-way discussion, although he did have strong opinions.

SM 7 said that the entrepreneur was being "very cautious" in handing over total responsibility of running the group to him. Although he and the entrepreneur constantly discussed how to get the senior managers and Group Heads to think and take responsibility in a way that fitted in with the organization's culture. However, SM 7 thought that that was the entrepreneur's responsibility and not his.

SM 7 noted that there was a generation gap between the entrepreneur, employees, senior managers, and Group Heads which meant that they did not feel comfortable communicating with him as they would younger colleagues. He added that the entrepreneur controlled the salaries, and had mentioned to him that he should start taking over that responsibility. He added that he didn't mind that the entrepreneur did not want to hand over total responsibilities, like dealing with shareholders, to him yet, but had spoken to him about needing to have clearer responsibilities. And because SM 8 was younger, he found it hard to interact with his direct reports in a directional way.

SM 7

If he left I would have some clear mandate.

SM 7 suspected that because he and the entrepreneur had not communicated on what needed to be done in the organization, nothing had happened with the succession plan. He believed that if he knew what his total responsibility was, he would have attended to the new type of recruits, and encouraged their development in alignment with the organizations. SM 7 noticed that he interacted more with the senior managers and other Group Heads than the entrepreneur, and that they communicated with him about how and what the entrepreneur thought. He acted as the "go between" for them for difficult situations with which the entrepreneur might disagree.

Box 6.10 Respect in Interactions

SM 7 said that people respect and tried to impress the entrepreneur, whereas he had more of an honest discussion with employees about their thoughts. This was confirmed by SM 10.

SM 7 said that the entrepreneur would "push through a decision" when it was about efficiency and ideas that were not plausible, but also to get things done quickly.

SM 7

If (*entrepreneur*) *looks at it and says it is not very good*, *you haven't done well*, *then people think*, *actually I shouldn't have done that*, *I shouldn't have had that conversation and …so he's probably aware of it.*

SM 7 stated that the entrepreneur would have to change his interactions with Group Heads if he wanted to get more insight into what they were doing or thinking.

6.3 Set II: June–August

Set II presents the analysis of the interviews that took place between June and August 2011 with the entrepreneur and four senior managers. The purpose was to track any changes to the interactions over the issue domains and included any other new issues that may have arisen since Set I interviews. The entrepreneur's cognitive map was only used in Set II to assist me to explore the decision-making process and the opportunity recognition interactions with the entrepreneur.

Firm A

Decision-Making, Insight and Opportunity Recognition

The entrepreneur said that he was still very good at acquiring different types of information, and appeared frustrated that the senior managers could not see the opportunities. He gave an example of being able to connect the dots for a potential opportunity that no one else could see. SM 4 believed that the entrepreneur was the visionary and SM 1 was a businessman.

Entrepreneur

Yeah but the dots are damn obvious. That's the issue. But, there's not much I can do about that if people don't see them.

The entrepreneur had the insight to know that one of their long-standing clients would withdraw from the UK market and appeared frustrated that the senior managers could not see the same threat. In contrast, SM 1 argued that these predictions were difficult to achieve because the industry was so confidential. And SM 4 argued that the loss of this client did not affect the organization because they "were still busy". SM 3 contradicted the entrepreneur's thoughts and said that people do understand the importance to their ongoing revenue of the projects they were working on, and the financial implications of what they did.

SM 3

> *I think they understand their job role, definitely. And yes I think they understand what they are doing and that we quote projects based on how much time the projects cost. They understand that what they are doing makes money.*

SM 4 was aware that there were deadlines for projects, profits and payments by clients, and believed that some employees did have the same awareness, which supported what SM 3 said, but contradicted the entrepreneur thoughts.

The entrepreneur confirmed his comments from the Set I interview, that he saw himself as an analytical thinker, and not an entrepreneur. SM 1 confirmed his Set I thoughts that the entrepreneur was no longer involved in decisions which affected the operational side of the business. SM 4 said that the entrepreneur was involved in overseeing the whole of the operations and business plan. SM 1, in support of the comments he made in Set I felt that the entrepreneur was inconsistent in the way he used the organization's metric system for financial and operation purposes, and sometimes relied on his intuition.

Box 6.11 The Risk-Averse Decisions that Affect the Interaction

SM 1 felt that the entrepreneur's risk-averse attitude to acquisitions was based on his perceptions, which SM 1 felt were not substantiated. He reinforced that this could negatively impact organizational growth, and that the entrepreneur was not open to new opportunities.

SM 2 confirmed what the entrepreneur had said, that he was still involved in finding opportunities to increase the size of the business and was always looking at the broader picture. She said that the entrepreneur was connecting the dots ahead of everybody else, and was focused on the detail of what he was doing. She recognized that some senior managers had difficulty combining detail thinking with strategic thinking in the way the entrepreneur did. For example, providing financial detail for a client's proposal and being able to see the strategic benefits of the detail to the future of the organization.

SM 4 built on her Set I interview comments about the entrepreneur's vision when he started the organization, and said that he made a decision irrespective of whether others followed him or not. She added that sometimes he made a decision and went ahead, but that he also did listen to others' ideas.

The entrepreneur suggested that the recession brought opportunities such as restructuring the organization, but added that it needed to be done quickly in order for the organization to grow. The entrepreneur wanted to use the opportunity for the organization to move into sharing intellectual property and development work, rather than only working as a service provider. He confirmed his Set I interview comments that he was looking ahead three years at the new premises they would need.

The entrepreneur and SM 1 mentioned that regarding issue domain 'Manufacturing', they now had a license, which they didn't have in Set I interviews. He said that after starting it, the entrepreneur was less involved in it now, but that he was still considering the strategic options. The entrepreneur's reduced level of involvement was ratified by SM 2 and SM 3.

SM 2 went further and confirmed her Set I interview that the senior managers did not share the entrepreneur's vision for the manufacturing suite at the beginning, but that they were now operationally involved. SM 4, supporting her Set I comments felt that "they" were naïve about the profit the manufacturing suite would generate, and the time it would take to operationalize. However, she did see it as a part of the organization's growth that would bring in further analytical work.

SM 1 was hopeful that they would receive their first client within a few months, but that people in the organization did not see it as a core part of the business. SM 1 saw it as generating 15 % of their future growth, even though the manufacturing revenue might only be a small part of the overall client contract. He stated that some senior managers did not see that picture.

The entrepreneur was concerned that he was not given the correct information by the senior managers in terms of how profitable the manufacturing suite was going to be. At the stage of Set II interviews, he was still in the process of gathering the facts about it. SM 1 referred to the entrepreneur as making "blanket decisions". He said that the entrepreneur didn't realize that things had changed, and that the organization did things in a different way to the one he remembered. He went further and declared that the entrepreneur used his intuition about the length of time and turnover the manufacturing suite would generate, rather than using factual information. SM 1 commented that he had also used his intuition in making decisions about the manufacturing suite without providing enough financial detail.

SM 2 acknowledged that the manufacturing suite was not making any money, and SM 3 confirmed that they were not manufacturing anything yet. SM 3 said that the process of developing a product with a client was presently happening and he believed it would improve.

Interactions

The entrepreneur's interactions had changed since Set I interviews: he felt that he did not understand how to make people see the obvious.

Entrepreneur

> *I've given up on that and I'm now more interested in the differences in people as opposed to the similarities if you know what I mean. Accepting the differences as well, and different talents that people have. I'm not sure you can make people see something that they can't see.*

He said that if people could see the things he did, they would not be working for his organization but they would be doing it themselves.

Box 6.12 The Flow of Information

He confirmed his Set I comments, that people do not want to know about figures, or to take risks in the business, that they wanted an "easy life" and thus that he limited the flow of information to senior managers.

He admitted that he did not know what people thought, but believed that the link between the client and their salaries was too remote. He felt that because of the large size of the company, people did not understand that the client paid their salaries. Even though he felt this, according to SM 1 he still looked after everybody in the organization.

The entrepreneur reinforced his Set I views, that he could not communicate his vision to people, and that he always saw the company as this size and bigger. He commented that the success of the organization was no surprise to him. He went further and reinforced his Set I interview, that some senior managers did not understand profit even though he communicated to them what it meant at every meeting.

SM 2 confirmed her Set I thoughts that the entrepreneur did not push people into making decisions, but would use his influence until they got to the decision he intended them to.

SM 2

> *I'll argue with him in that way whereas perhaps people are a bit more reticent but he's usually quite open to people's ideas, but if he thinks he has the best idea he will try and persuade them to come round to that way of thinking.*

SM 2 confirmed her Set I interviews that the entrepreneur always tried to get people on board with what was going on, and that his interactions with people for the manufacturing suite involved several presentations. SM 3 interactions with the entrepreneur were less frequent as the entrepreneur was trying to reduce his day-to-day activities. SM 3 contacted him via email if he needed to speak to him about a technical challenge, and found that the entrepreneur's solution would be the same one he had arrived at. He admitted that he thought the entrepreneur worked differently with him than he did with others.

Although SM 1 was the new MD, SM 3 revealed that the entrepreneur's level of technical experience was more suited to answer his questions in more detail than SM 1, who would analyze the problem from a business development perspective. SM 1's role and responsibilities therefore involved him engaging with SM 3 on performance and operational issues. In terms of issue domain 'Succession', SM 1 and SM 4 felt that the entrepreneur's mentoring role was being reduced because he was out of the office for longer periods.

Both SM 3 and SM 4 believed that they could understand the entrepreneur's thought process. SM 4 confirmed her Set I comments, that the entrepreneur bounced ideas off her because she was able to understand what he was saying, and could generally develop his idea.

Firm B

Decision Making, Insight, Alertness, Information Gathering, Pattern Recognition, Insight, Experience, and Opportunity Recognition

The entrepreneur said that he knew where he wanted to get to in his strategic decision making, but not necessarily where he wanted to get to in reality. He would then engage with people to validate or confirm this thought process. He believed that attention to detail and thinking about one's actions would result in fewer mistakes. He used the example of archiving the files in Set I, and said that "getting the order right" would have prevented the mistake of missing potential work from clients. He was confused and angry that employees allowed that to happen.

Entrepreneur

> *People just come to work and look at it as a process, they are not equating the success or not equating those orders to jobs, they looking at it as money, and really doesn't make a difference if it was done today or tomorrow.*

SM 5 and SM 6 believed that having a different opinion to the entrepreneur would not alter his decision making and that he would end up doing what he wanted to do. SM 6 believed that the entrepreneur's decision making was all related to how well the organization was doing financially and that emotion was not a consideration in his decision-making process. However, he added that since the turmoil the organization had been going through since Set I, the entrepreneur was trying to have more of a positive attitude rather than "battering people" to improve productivity.

Firm C

Decision Making, Insight, Alert, Information Gathering, Pattern Recognition, Insight, Experience, Opportunity

The entrepreneur admitted that he saw less of SM 7 than he did in Set I and that they focused on "specifics rather than a review of things" when they met. SM 8 said that the handover of the organization to SM 7 was taking longer than expected because the entrepreneur wanted to "imbue him with the organization's way of doing things".

The issue domain ‘Recruitment’ was taking place without the entrepreneur’s intervention, although when SM 7 was away he advised a Group Head against recruiting someone. The Group Head followed the advice of SM 7. The entrepreneur had handed over the recruitment responsibility and day-to-day decision making to SM 7 since Set I. This was confirmed by SM 8. SM 7 confirmed that the entrepreneur first met recruits after they had joined the company and not during the recruitment process as he had done in Set I. He had also taken over the salary list he mentioned in Set I, without waiting for the entrepreneur’s approval.

SM 7 confirmed the entrepreneur’s comments in Set I that he used his instincts to make a recruitment decision. In contrast, the senior managers and Group Heads discussed their recruitment decisions with each other. He added that his decision making was different to the entrepreneur’s with regards to a few recruitment choices, and they both accepted that. SM 8 said that SM 7 found it hard to structure and focus the entrepreneur’s contribution in meetings, and due to this behavior SM 8 found the entrepreneur to be indecisive. The entrepreneur confirmed his Set I thoughts that he preferred not to make decisions and tried to influence people to make decisions of which he would approve. The entrepreneur said that when he heard a decision was made, he kept an open mind and was open to persuasion.

SM 8 confirmed his Set I thoughts that the entrepreneur was emotional in his decision making, and added that he hated to be “pinned down” to a decision. He went further and said that the entrepreneur would consider the options of a decision from all angles.

SM 8

It’s very rare for him to actually say this is what we should do or anything like that. So you end up just kind of following this emerging train of thought, which eventually leads you somewhere. You sort of end up saying ‘well you know how about we do this’. It’s clearly what he’d like you to say, but he just doesn’t want to say it himself. And this process can take quite a long period of time.

Since Set I, the entrepreneur was still involved in decisions with regards to the allocation of space and facilities and thought that overseeing these tasks was his strategic responsibility. SM 7 perceived that the entrepreneur wanted to teach the Group Heads how to make decisions and run the organization, rather than discuss things.

SM 7

> *Now if I was being charitable I'd say they wanted people to have independent thought and therefore talking lots to them and telling them what you think doesn't give them an opportunity for independent thought.*

SM 7 confirmed his thoughts and SM 10 commented that the senior managers and the Group Heads adjusted their thinking to that of the entrepreneurs'. He added that the entrepreneur was not looking for opportunities because he was focused on maintaining a profitable organization. However, SM 8 said that the entrepreneur was "loosely" overseeing a new opportunity that he and SM 7 were presently investigating.

6.4 Set III: September–December Interviews

Set III presents the analysis of the interviews that took place between September and December with the entrepreneur and four senior managers. Its purpose was to track any changes and included any other new issues that may have arisen since Sets I and II interviews.

Decision Making and Interaction

The entrepreneur said that his interactions with SM 1 and the organization had changed significantly since the Set II interview. He was now much more confident in the way the business was going and although there were still differences of opinion between himself and SM 1, he could accept them. SM 2 confirmed her Set II comments, that the entrepreneur's involvement was much more strategic now, although employees would also go to SM 1 now for strategic decisions. However, SM 2 mentioned that the entrepreneur was still "floating ideas to the board" and was involved in new opportunities, which contradicted what SM 1 had said.

SM 4 felt that she could see what the entrepreneur could see in terms of the quality of the product, but she recognized that he had a wider vision than she did. She admitted that she could not see, and did not have, a five-year vision like the entrepreneur, which confirmed what the entrepreneur said in his Set II interview.

With regards to issue domain 'Manufacturing' SM 1 and SM 4 revealed that they had not manufactured anything successfully yet in the new suite, but they believed that the manufacturing suite would be profitable in the future. SM 1 added that the sales predictions had been inaccurate, and it was frustrating that they had no success attracting manufacturing opportunities. SM 3 said that he expected manufacturing to take place in January 2012, while SM 4 felt it would take a year to be functional. She argued that it was lack of experience in manufacturing that caused the inaccurate predictions by senior managers.

SM 1 confirmed his comments in Sets I and II, and said that the entrepreneur was not involved in opportunity recognition, and that he was the one successfully bringing in new projects and equipment. He added that the business would not have taken risks if he had not encouraged it, and claimed that he was responsible for the formulation activities that the organization now undertook. He iterated that although formulation was something that the entrepreneur wanted to do and it was in the business plan, nothing had previously been done with it.

Firm B

Decision Making and Interaction

There were several changes since Set II interviews. SM 6 confirmed the issue domain 'Recruitment' changes had taken place at management level. SM 6 felt that the transformational changes had "flushed out" several inefficiencies in the organization. His role had changed slightly and now included Human Resource elements since the entrepreneur's secretary had left. The entrepreneur had restructured the Sales Department and changed the role of an employee who had been with the organization for ten years to a more responsible role.

The entrepreneur had decided to change the type of work they attracted because of the increased level of competition in their sector. He was looking at developing more long-term relationships with clients, rather than chasing the larger contracts that delivered short-term order books. This approach was different from his Set I and Set II strategy. The decision to change was a result of several failed attempts to maintain the status quo. He felt that the organization should always be undergoing business development, and that the previous sales director did not have the capacity to use issue domain 'Technology' to increase their sales and market share.

Box 6.13 Acceptance of Differences

The entrepreneur still felt that employees and management did not have the same thought process as he did and they were not alert enough.

Entrepreneur

> *Trying to encourage people to increase their input and their returns rather than standing with a cattle prod behind them saying blooming do it.*

SM 5 reiterated that the entrepreneur's lack of experience in issue domain 'Technology' had a negative impact on the way he viewed the implementation of certain technologies. SM 5 felt that the way the entrepreneur thought about things had not changed, but that he was more prepared to let others make decisions. He added that the entrepreneur got people to agree with his decision by implying or insinuating things. SM 6 added that the entrepreneur expected "the world to flex to him, not him flex to the world".

Optimism

SM 6 said that because of the turmoil the organization had been through, the entrepreneur was trying to be more positive in his outlook and that it was made easier by the new Sales Consultant who had a more hands-on approach, leaving the entrepreneur to focus on strategy. He added that everybody in the organization was feeling the impact of the entrepreneur's positive attitude and that the entrepreneur did not have emotional highs and lows like he used to.

Interaction and Relationships

The entrepreneur still thought that he needed to drive people to achieve, which confirmed his Set I and Set II thoughts. He noticed that he had mellowed with age, that he did not drive people as much, but tried to influence them in his direction. Since the changes in the organization, he felt more comfortable with the team. The entrepreneur recognized that SM 5 was an ambitious and capable manager with attention to detail, and was more prepared to let him make technological changes independently than he was in Set I and II. SM 5 felt more confident to challenge the entrepreneur than he used to in Set II interviews, and acknowledged that the entrepreneur pushing him to achieve more had partly helped him.

The entrepreneur realized that the frequency of his interactions with employees and management had reduced, and as a result there seemed to be more open communication between employees and management than with him. He wanted the systems to drive improved behavior rather than him driving people to deliver. SM 5 confirmed that since the new Sales Consultant had been recruited a few months earlier, the entrepreneur spent less time on operational issues which he believed was good for the organization and gave SM 5 more freedom to do his job. SM 6 thought that the entrepreneur listened more to people rather than enforcing his opinions on others. He added that the entrepreneur's interactions changed because he realized that employees were leaving and not responding to his "pushing" anymore.

SM 6

> *I do remember him saying to me probably round about that time. That he was going to change and stop the bollockings. I think those were his words. He said he would deal with things in a more positive way. I've really noticed that since then, it's a real change in him.*

SM 6 said that the entrepreneur was trying to understand the reason why people did or didn't do things. He was more measured than he was in Set II.

Firm C

Decision Making and Interaction

The entrepreneur confirmed his Set II comments that he was no longer involved in the issue domain 'Recruitment.' This was confirmed by SM 7 and SM 8. He admitted that his level of influence over recruitment was less than it used to be. He said that senior managers and Group Heads would continue to ask his opinion if they were unsure about a decision to recruit an applicant. He added that some senior managers and Group Heads went through a formal step by step process when recruiting staff and looked for evidence of the recruits' abilities. SM 7 felt that he was more challenging than the entrepreneur tended to be in the recruitment process. As a result he believed that "better people" were now being recruited. SM 7 added that the entrepreneur was more challenging of the recruitment decisions for groups that were not doing well, and questioned the role the recruit would have in the group. However, he left SM 7 to make his own decisions.

SM 7 said that he learned a lot from the entrepreneur and that he would listen to him irrespective of how long he talked. He confirmed Set II thoughts that the entrepreneur did not "do decision making and neither did he make quick decisions". He added that the entrepreneur knew the answer to a decision that needed to be made, because he had the experience to support it "and waited for people to get there". SM 7 confirmed the other senior managers' views that the entrepreneur spent hours talking about a subject without a clear outcome, but because they respected him, they therefore "indulged" him.

SM 7

> *Given a situation he thinks he knows the answer. And you remember there is a generational thing here, so he does view himself as a different generation and therefore he has seen all the problems. So given the situation he'll know the answer.*

SM 7 felt that the entrepreneur would get angry with people when they didn't get to the decision he wanted, or expected them to, but wouldn't directly tell them what the decision ought to be. In this example, the senior managers failure or fear to ask meaningful questions means that the entrepreneur doesn't have any help to access his tacit knowledge. The entrepreneur did not consider the senior manager to be his equal and therefore could not encourage the collaboration of this ideas.

He added that his style was developed from working with strong independent people he couldn't direct when he founded the organization. He believed that this resulted in employees feeling lost and uncertain about what to do, but nobody would "dare to tell the entrepreneur that". SM 8 confirmed that he would prefer a more concise interaction with the entrepreneur which gave him insight during their discussions. Entrepreneur and senior managers need to interact in order to derive meaningful explanations for what and why a decision was made (Lee, 200) and to help senior managers identify patterns they don't see.

SM 7 revealed that people regarded the entrepreneur as a senior person, although he had become "softer" over the years with more interaction with junior employees. This awareness of seniority was despite the fact that the organizational structure was flat. Seniority according to age and experience in successful family firms are regarding as entrepreneurial bridging, in which the older generation discusses relevant opportunities to increase entrepreneurial capacity (Penrose 1959) by working side-by-side. However, they are also less entrepreneurial as the new generation takes control with a decline in entrepreneurship (Jaskiewicz et al. 2015).

The entrepreneur was still involved in investment decisions for ideas that senior managers and Group Heads brought to him which contradicted SM 7 thoughts that the entrepreneur was no longer involved in opportunity spotting, and despite the entrepreneur feeling that SM deferred to him less.

Entrepreneur

> *They can all create new opportunities, nearly every graduate scientist or engineer can create opportunities. So actually trying to get everybody thinking about that, and they will have different aptitudes and interests, and then the senior people in their particular area that's part of their job to do the same thing. Encourage people to sort of spot opportunities, spot trends, pick up intelligence about what is important, transfer technology, and be creative.*

SM 8 said that the entrepreneur's decision making was confined across group level activities, and not within their group, and that SM 7 has taken over the day-to-day running of the organization. He confirmed his Set II comment that the entrepreneur wanted senior managers and Group Heads to take responsibility and not to direct them.

This chapter presented the findings of Set I, II and III using the 19 categories derived from the empirical data. The cognitive differences between the entrepreneur and the senior managers were highlighted with regards to these categories. These included biases and temporal issues regarding decision making for issue domains 'Recruitment', 'Manufacturing' and 'Succession'. The chapter also highlighted the changes in entrepreneurial attitude and the level of interaction between the entrepreneur and the senior managers. The following chapter presents the findings for Firms A, B and C.

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7

Cognitive Dissonance Between Entrepreneurs and Management

7.1 Introduction

Potential organizational failure in the entrepreneurial paradox was conceptualized as a reduction in growth and performance in the cognition-success-attribution cycle. This represented the conflict between the interrelated parts of the system and reduced performance with potential for organizational decline. Specifically, the temporal aspects of entrepreneurial decision making and the six themes underpinning identified in the previous chapter contribute to the cognitive distance and dissonance (Festinger 1957, 1964) with senior managers. The empirical evidence suggests that entrepreneurs and senior managers attribute growth and success to different phenomena and decisions.

Specifically, in Firm A, the lack of profitability of the issue domain 'Manufacturing' was regarded by the entrepreneur as a lack of dynamic capabilities (the ability to reconfigure the firm's resources) and a failure of the managing director (MD) senior manager to plan, thoroughly investigate and provide accurate financial data. In Firm B, the entrepreneur regarded the failure of issue domain 'Sales and Marketing' to implement new technology to improve systems and processes as a lack of

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entrepreneurial capability (Busenitz and Arthurs 2007) as the sales manager's lack of opportunity recognition and responsibility. In Firm C, the evidence for the slow profitability of innovative technology was attributed to the market not being ready. In Firm C however, externalizing the failure to the lack of readiness in the market and opinion leaders in the environment had some merit according to earlier research undertaken by Schein (1987). It might well be that in Firm C, the 'failure' could be attributed to both internal and external factors.

In Firm A, the conflict in the interactions with senior managers was caused by the entrepreneur as craftsman (Miller 1992) who attributed their success to the achievement of high levels of quality. This is in contrast to the MD senior manager who attributed the organization's success to the strategic placement of highly skilled workers in the right market.

In Firm A, the senior managers with greater technical expertise and experience were more aligned with the entrepreneur on attributing success to high levels of technical quality. In this example, the transformation from Craftsman to Tinkerer was moderated by the MD senior manager who recognized the need for quality and diluted the potential for a monolithic culture created by the entrepreneur who used tried and tested approaches to growing the organization. Tinkerers were regarded by Miller (1992) as a decline into a narrow focus on specialized quality due to past successes.

Firm C entrepreneur and MD senior manager did not have this conflict because they had a similar scientific background and both could be categorized as Craftsmen. The findings in Firm C illustrated the entrepreneur as a Craftsman who wanted to spend time perfecting new products but also had the commercial focus on growth. The evidence that the entrepreneur was a Craftsman with commercial focus is an entrepreneurial feature that is not considered by Miller (1992). In this way, the evidence showed a commonality between the interactions in Firms A and C in terms of the interactions of the entrepreneur as craftsman and the senior managers. As long as the entrepreneur was the key decision maker rather than senior managers, the decision was respected because of historic success, but it moderated their interaction.

In the firms the senior managers' desire to focus on one core strength was clearly an issue that caused cognitive dissonance between the entrepreneur and senior managers. It was unclear from Miller's (1992) trajectory if the founders or the management drove this focus on one core single strength. Paradoxically, the senior managers attributed organizational success to the entrepreneurial cognition, but simultaneously wanted change.

2. *The Inventing Trajectory*: *from Pioneers to Escapists.* While pioneers took the lead with new technologies and created new markets they could also decline into escapists. The entrepreneurs in Firms A and C focused on futuristic projects that the market was not yet ready for which Miller (1992) asserted is characteristic of pioneers. In Firms A and C, there was a tension between the entrepreneurs who developed products that were perceived by senior managers to be premature for the market, and the senior managers' desire for a market strategy and analysis before the development of new products.

3. *The Venturing Trajectory*: *from Builders to Imperialists.* The builder typified the entrepreneur in Firm B who pursued growth and expansion with a primary goal. In addition, he showed evidence of declining into an imperialist through acquisition, mergers, and fast strategies for growth. The findings from Firm B showed signs of the venturing trajectory in which the entrepreneur had ambitious goals and was able to raise large investment for potential acquisition (Miller 1992). However, the conflict in the interactions with the senior managers showed how the entrepreneur's goals transformed the builder to imperialist at the cost of interrelationships and reduced senior manager performance. This evidence supports the venturing trajectory where the entrepreneur focused on financial and legal issues rather than the much needed production, research, and development.

Although Firm B is characteristic of the venturing trajectory, there was an inconsistency with regards to Miller's assertions on risk and the entrepreneur in Firm B. Miller regarded the builder as taking substantial risk while the evidence in this case is that the entrepreneur took less risk as the organization matured and became more established financially, operationally and strategically. Additionally, the senior manager perception was that the organization should take more risks. Internal stakeholders failed to recognize the temporal aspects of growth, and that the entrepreneur did take risks at the start-up level, in this way perceiving that the entrepreneur had a low risk propensity (Busenitz and Barney 1997; Busenitz 1999). In addition, this implies that the senior manager perception had a temporal bias towards the present rather than the past. The venturing trajectory characterized the conflict in Firm B between the entrepreneur's view of risk that is based on past experience and senior managers view of risk that is based on inexperience and a lack of temporal depth. This is evidence of differences between entrepreneurs and managers to the perception, rather than the propensity (the conscious acceptance of risk), to risk (Busenitz and Barney 1997; Busenitz 1999). This lack of temporal depth by the senior managers highlights the different processes that entrepreneurs use to positively frame situations (Miller and Sardais 2013a, b).

The changing temporal aspect of entrepreneurial risk from start-up to maturity is not considered by Miller's (1992) four trajectories. My evidence provides insight that organizational age had an impact on entrepreneurial and senior manager interplay with regards to different perception of risk.

4. *The Decoupling Trajectory: from Salesman to Drifters*. There was no evidence that the entrepreneurs in the cases focused on sales at the expense of excellence. The salesman was characterized by a desire to create an image rather than a quality product. The salesman also focused on marketing and increased product lines much more than the other types, and was eventually a driver for decline.

The evidence across the themes showed a lack of sensemaking (Weick 1979) by the entrepreneurs and an expectation that the senior managers aligned with his thinking in spite of experience.

Firm B, Senior Manager

> *I would say "You know I'm concerned about this, how do you feel about it" and, try to get him to make the decision.*

Senior Manager alignment is characteristic of Miller's (1992) configurations in corporate organizations where success is partly due to elements fitting together. The analysis illuminates the tension beneath the surface that is eroding growth and performance in spite of the existence of seemingly successful configurations.

Firm B, Entrepreneur

> *That decision making process once I've decided something, and once we've gone through it, then I do expect it to be carried out. If somebody goes against it, then the best for them to do is to take a long vacation from the office or out of my vicinity.*

This quote is a reflection of the self-centered nature of the entrepreneur that is based on successful decision making and the expectation that the entrepreneur is in control of decision making. However, the energy and focus required to build an organization as the entrepreneur had done, required a single-minded approach at the cost of interrelationships (Miller 1992).

After 12-months entrepreneurial expectations and learning had shifted in Firms A and C. The CEO senior manager had more autonomy and senior manager's cognitive differences became more acceptable.

7.2 Set I: January–April

Set I, II and III presents the analysis of the interviews, which took part between January and December with the entrepreneur and senior managers SM1 up to SM10 regarding sensemaking (Weick 1979).

Firm A

The entrepreneur made sense of his own decision-making abilities and was aware that he did not consult anyone when he was going through the process of thinking about something. However, he was unaware that a lack of accurate information or passing on his cumulative knowledge is often the cause of organizational failure or the negative impact on the psychological contract caused by the lack of information flow.

Entrepreneur

I'm very much a singular on that, I mean I would go and get that myself. I suppose at that stage that's when I realize that I need to broaden my horizon even here because the company becomes a bit singular.

The entrepreneur did not communicate his thoughts about a new idea or opportunity immediately to the senior managers. He did, however, brief them about the issues related to the business in formal team meetings. The interaction between the entrepreneur and the senior managers who are employees, involved general communication about the organization's performance and objectives for the future rather than issues regarding profitability. This sensegiving process was more formal than getting senior managers to understand what profit was, and what it meant to the organization's growth. SM 2 and SM 4 said that the entrepreneur was a good communicator, and that he used simple terms when he offered assistance to senior managers in the laboratory.

SM 1 thought that he listened to what senior managers said much more than the entrepreneur did, but realized that it was too soon to tell whether his approach was the right one or not. This lack of experience forms part of the differences in perception that negatively influences their inter-relationship. He went further to suggest that the entrepreneur's decision making was more "dictatorial" than consensus driven. As the MD, SM 1 preferred to have more of a consensus from other senior managers before making a decision. This view was contradicted by SM 2 who believed that the entrepreneur did consider senior managers in his decision-making process. This ambiguity is evidence of variation across entrepreneur-senior manager relationships.

SM 2

He would always sort of sit and muse with other members of staff. He will sort of discuss things with them. He's not dogmatic in the way he comes to his decisions, he won't say well I've thought of this and this is the way I want to go, he's *very much the sort of….well I've been thinking about this, what do you think and….er get feedback from them to see how comfortable they are with that decision.*

SM 2 felt that the entrepreneur was good at giving sense to senior managers. She said that people did not have the same vision as the entrepreneur.

SM 2

He's very good at erm….he can speak to all levels, so if he is speaking to one of the analysts he will paint the picture in a way that they will, can understand, and appreciate at a different level. He will alter it so that the finance side will come on board. He will see it from a more financial perspective rather than from an analytical and create a progression.

SM 3 regarded the communication between the entrepreneur and himself as open and regular, which was made easier by open plan desks, and sitting next to each other. SM 4 gave the example of when the organization moved to larger premises, the entrepreneur was good at keeping people informed all the time about what was going on, and that the entrepreneur was making sure that SM 1 would do the same when he took over the MD role completely. The entrepreneur was able to view the potentially ambiguous situation as positive more than the senior managers (Palich and Bagby 1995).

Firm B

The entrepreneur acknowledged that, what seemed like commonsense for him, was not commonsense for those around him. He used the example of two employees putting a quote into a window envelope the wrong way around without anybody checking whether they could see the address and not "switching their brain on" when they got to work.

The entrepreneur noticed that people did not relate the clients' orders to "that's what keeps them in their jobs". He was always trying to make sense of the impact of the financial figures on the business, and could not understand why others did not do the same thing.

Entrepreneur

> *I would look at that order and say well, ok that's £100 000 but if we get everything right we can make x amount out of it. So really, in that process there's a lot of money going to be spent in employing people in, getting in engineers' time and other elements so…you know, if you look at it as if we lost an order for £100 000 that's basically a few peoples' jobs.*

The entrepreneur said that he had spent a large part of the year trying to get the management team to see the potential of the organization. He believed that the reason for employees and management not wanting to see the changes that were necessary for growth, was due to job insecurity and lack of skills and knowledge. The entrepreneur was able to use mental shortcuts even with cognitive overload and too much information coming in and the situation was uncertain (Baron 1998).

SM 5 felt that the entrepreneur didn't realize the negative impact issue domain 'Recruitment' of the new Sales Consultant was having on him or the rest of the organization. When the entrepreneur sensed the negative mood of the organization, he sent out questionnaires to gather data about what and how people were feeling. Based on the large amount of negative feedback, the entrepreneur decided to change his attitude to a more positive one. The entrepreneur was able to be both positive and realistic when needed and acknowledged that he had to change but only in the face of an issue that was potentially disastrous for the business. This contrasting orientation was confusing for senior managers. The entrepreneur stated that managers worked 'in' the department rather than 'on' the department. He believed that in order for them to make sense of the improvements needed in the organization they should become more strategic in their thinking. This uncompromising attitude is consistent with some research on entrepreneurs who are focused on their firms (James 2006)

In the issue domain 'Sales and Marketing', the entrepreneur declared that the Sales Managers should have picked up that they had not received work for six months from their good clients.

Box 7.1 Sensemaking

The entrepreneur tried to make sense of what people said, and then he considered whether it required a change in the business. SM 6 had learned that the entrepreneur would analyze any comment he made to him and then tried to make sense of it. However, he thought that the entrepreneur was unaware of the effect of not communicating with people about the reasons behind the new recruits and what their role was within the organization.

SM 6 could not understand why the entrepreneur waited to communicate recruitment changes to the employees.

Firm C

The entrepreneur said that flexibility and the use of intuition was important when dealing with people. He added that the Project Leadership Training course run by the organization for new recruits gave them a sense of the culture. SM 8 expected that the entrepreneur's role was to maintain the culture and the environment in which senior managers and Group Heads could operate. This confirmed SM 7's thoughts about the entrepreneur's role.

SM 7 had no clear mandate from the entrepreneur in terms of his role and responsibilities. He made sense of what the organization needed and did it without questioning the entrepreneur, by filling in the "gaps". Both the entrepreneur and SM 7 sensed what things "needed to be picked up" and each filled in the gap without defined or allocated tasks.

SM 7

The challenge for (the entrepreneur) and similarly for me is to be that enthusiastic person that catalyzes these things, but at the same time also having a view of risk and working out how to apply that, so that when things do occur we have a balanced judgment.

This is evidence, lacking in EO research, although (Lumpkin and Dess 1996) the model hints that if organizations decline to take risks and become 'overly passive' they lose the entrepreneurial edge. The senior manager shows awareness of the situation, but the interaction with the entrepreneur will help to provide a framework which can assist them to explore the firm's ability to take risks, act entrepreneurially, and increase performance.

7.3 Set II: June–August

Set II presents the findings of the interviews that took place between June and August. These second round of interviews were undertaken in order to track any changes to the entrepreneur-senior manager interactions over the issue domain and other decision and opportunity recognition related aspects that may have arisen since the Set I interviews. It was significant to the research that the entrepreneurs, senior managers, and organizations ability to create, acquire, and transfer new knowledge and subsequently modify behavior to reflect the acquired knowledge and insight was captured and added to Set I analysis. The modification of behavior in some areas were similar to von Bertalanffy's (1968) self-regulatory open system thinking in which through learning and communication, there was synergy in the organization after intended change had occurred. However, there was no significant findings for Firm B.

Firm A

SM 2 said that the entrepreneur was good at giving sense to people at all levels of the organization from board level to the people on the floor in the laboratory, but confirmed what the entrepreneur said, that people at lower levels of the organization did not want to know the financial details of what was going on. Although it is worth remembering that a lack of accurate information is often the cause of systems thinking failure and (Likert 1967; Handy 1993) argument that vertical and horizontal information flow represents important features of synergy. These arguments could be used to explain the negative impact on the psychological contract caused by the lack of information flow in the entrepreneur-senior manager inter-relationship.

SM 3 felt that the entrepreneur trusted him to run the laboratory, and he reinforced what SM 2 said, that the entrepreneur wanted to do the best for people in the organization. SM 3 believed that the entrepreneur challenged convention, and did not accept things being done the same way all the time. SM 4 confirmed her Set I comments that the entrepreneur was good at explaining things and asking for her opinion. In this way the senior managers' expectations were being met through consensus with the entrepreneur.

Firm C

The entrepreneur felt that if people didn't agree with him it was because they could not make sense of what he was thinking and why. He added that Group Heads would think he was being cautious or difficult, but that he would try and explain to them what he thought and what his values were.

The idea of the entrepreneur relinquishing control in order for senior managers' thinking to be harnessed to organizational goals and not entrepreneurial thinking was slowly becoming visible at Set II interview stage in Firm c. The unexpected finding and argument here is that these firms have successfully grown to date with limited and varying degrees of strategically sharing decision making across levels of senior management. In addition, the integrative approach to leadership in which the entrepreneur is leader and creates a dynamic organizational climate due to cognitive transparency is not supported because in this example the entrepreneur does not communicate his thoughts. Cognitive distance and dissonance is caused by a lack of entrepreneurs sharing their thinking or behaving in a way that reflects it enough for senior managers to perceive the reasons behind their actions.

SM 8 said that he questioned the entrepreneur's ability to make sense of the investment he made in the printing group and wondered whether it would be a profitable part of the organization. The entrepreneur-senior manager difference in perception of the printing opportunity could be perceived as the entrepreneur possessing prior information and the cognitive characteristics to value it (Gaglio 1997; Shane and Venkataraman 2000). In other words, the knowledge structures that the entrepreneur was using was varied due to cognitive alertness (Gaglio and Katz 2001) resulting in senior manager misunderstanding and incorrect perception about the validity of the opportunity.

The entrepreneur discussed issue domains 'Business Development' and 'Recruitment' with senior managers and Group Heads, and the broader organizational issues with SM 7. SM 7 noted that the entrepreneur told him things that he wouldn't previously have done. He suggested that senior managers and Group Heads shared their individual strategies and learned from each other. SM 8 felt that SM 7 would have more interaction with the senior managers and Group Heads than the entrepreneur had in the same role, which confirmed all his Set I thoughts. The entrepreneur declared that for some senior managers and Group Heads, they wanted to spend the organization's money without thinking it through, and wanted to take the easy way out rather than actively engaging with issue domain 'Business Development'.

Entrepreneur

> *And saying no to put some steel in their spine, to get them to figure out how to get the right thing…so yes there are things that are like that.*

The entrepreneur acknowledged that SM 7 had similar thinking processes to his own, and that he would help him put any differences of opinion into perspective. He added that they both wished that the other senior managers and Group Heads thought in the same way.

He mentioned that his disagreement with employees, which SM 7 mentioned in Set I about Linkedin, was caused by them not thinking of the consequences to the organization and clients of uploading information. He felt that one of the other Group Heads had sent out a document before he had a chance to see it, which confirmed what SM 7 said in Set I, about the entrepreneur's late involvement in decision making. The entrepreneur felt that the document sent out was too policy-based, rather than a suggestion to employees about how they should behave, which is how he would have preferred it to be presented to staff. However, he preferred not to be directional and did not advise the employee on the course of action.

The entrepreneur and SM 7 had had a discussion about his responsibilities since Set I, but SM 7 still thought that his role was unclear. However, they had agreed that SM 7 would take over the monthly meetings with the senior managers and other Group Heads. SM 8 noticed that the entrepreneur's interactions in team meetings were not helpful because he took a long time to discuss issues and then did not reach a decision. He would have preferred a more structured thought-through contribution from the entrepreneur.

SM 7 confirmed that in his discussions with the entrepreneur they had decided that SM 7 would be responsible for the day-to-day running of the organization, and the entrepreneur would focus on the cultural issues. SM 8 stated that SM 7 understood what he was trying to do and provided him with more clarity in their discussions than did the entrepreneur. He confirmed SM 7's comments in Set I that the entrepreneur would "talk around the subject" and hated to be pinned down. Although, SM 8 declared that he reported to the entrepreneur and not to SM 7. SM 9 said that the entrepreneur had a more influencing style in his interactions, while SM 7 was more direct and "harsh". He decided that when he took over managing the relationship with the other Group Heads, he would have a more open relationship with them than the entrepreneur did which confirmed his Set I thoughts. However, the senior manager did not consider how other senior managers might consider the mixed messages in discourse or the impact on his interrelationship with the entrepreneur.

SM 7

> *You just don't talk about those things, you just avoid those areas except under very managed and carefully controlled circumstances when you know that you've thought about it a lot and there's a very well-considered angle to take.*

SM 7 confirmed the entrepreneur's view that senior managers and Group Heads would think about things before approaching him, which stopped employees from communicating with him. The entrepreneur's decisions had never been challenged by the senior managers.

SM 7

> *So there is a tendency, and people wouldn't go to those places when he* (*the entrepreneur*) *is in the room, because they'd know he would just dismiss it. But in terms of a cultural change thing, there is more of a dialogue.*

SM 7 thought that in the last 10 years the communication with management had not been very good and it left people feeling that they could not be open and honest. Although, he added that the entrepreneur did not communicate on the future of the company, but recognized that the entrepreneur might not have a strategy and managed instinctively. However, the performance of the company could be driven by the perception of the strategy, rather than the strategy itself (Ford 1985).

SM 8 didn't know how important relationships were to the entrepreneur. He confirmed his Set I thoughts that he was not a "people person". SM 9 confirmed the entrepreneur's comment in Set I that his approach was hands-off and used the Japanese handover to describe how the entrepreneur introduced to him to this contacts, but let him to handle the relationship. SM 10 said that he had no interactions with the entrepreneur since Set I interviews.

7.4 Set III: September–December

Set III presents the findings of the interviews that took place between September and December with the entrepreneur and senior managers. The purpose was to track any changes to the interactions over the issue domains and included any other new issues that may have arisen since Sets I and II interviews, there was no additional data for Firm B.

Firm A

The entrepreneur believed that the employees were unaware of the reason behind his change in attitude and strategy, but that he did keep communicating to them that the market was changing. The entrepreneur was aware that giving employees too little information resulted in them thinking he had secrets, but felt that if he did tell them everything they would feel insecure and threatened. At this point in the investigation, the entrepreneur had resigned himself to the idea that senior managers would not understand the entrepreneurial thinking process and had stopped trying to translate and share his thinking.

Firm C

The entrepreneur mentioned that SM 8 was under more time pressure because he was closer to the client. SM 7 confirmed that the organization was under pressure to perform now more than when the entrepreneur founded the business, because they had experienced, motivated, and proactive people at start-up. He felt that now the organization had to have a structure that got employees up to speed with experience much more quickly than they needed to when the entrepreneur had founded the organization. SM 7 said that although the entrepreneur was responsible for the change from the original founders to a younger generation of recruits, he had not thought about how the organization would train and engage these new staff. He (7) noted that the entrepreneur was always making sense of what was needed for growth when he started the organization, but that with the younger generation of recruits was not doing the same thing. The use and sharing of tacit knowledge has changed as the company has become more mature, which is consistent with the view that tacit knowledge is used to foster creativity and innovation (Brown and Dugid 2000) symbolic of early stage firms. For example, the entrepreneur was building the business by exploring (radically new opportunities for the firm) and exploiting (refining existing opportunities to remain competitive) opportunities ambidextrously (March 1991). In this example, senior managers were less able to discern between these competing strategic decisions in the same way the entrepreneur did. The cognitive distance caused pressure on their relationship. SM 8 felt that the entrepreneur made a conscious choice not to answer people's questions, and added that the entrepreneur did not like to communicate how he saw things.

BOX 7.2 Sensegiving

The previous MD of the organization, I am sure you've met him, was very fond of saying something like 'if you're smart enough to work here you are smart enough to understand.' I have never heard (the entrepreneur) say that but I suspect part of that culture is still there.

SM 7 felt that his interactions with the entrepreneur were going through a change and he was not "poking about' and asking questions as much as he used to. He felt that his responses to questions and discussions were shorter than in the past. He confirmed his Set II comment that he did not know what the entrepreneur had on his mind in terms of succession, and that they both continued to do different tasks in the organization without having clearly defined roles. However, the transference of tacit knowledge to the senior managers means that he has to access knowledge that is sometimes inaccessible (Stewart 1997). He suggested that the entrepreneur was preoccupied and he missed the communication between them, which was confirmed by SM 8. SM 7 felt that the entrepreneur was less involved than he was in Set II, but that it was a temporarily distraction.

The entrepreneur said that he was more sympathetic to what employees were going through than one of the Group Heads who had more of a threatening approach, which confirmed Set II comments that he took people's feelings and views into consideration. He confirmed his Set I comments that he "nudged" people in the direction of a decision, rather than directing them.

Entrepreneur

Actually, a lot of my job is about forcing people to stand back and see the wood from the trees. Actually stand back and look at what the broader opportunities are.

SM 7 believed the employee's engagement levels were lower than in the past, and therefore they needed different management than the relationships the entrepreneur had with employees, senior managers and Group Heads when he first started the organization.

SM 7 confirmed his Set II comments about Linkedin, that the entrepreneur wanted to completely ban employees from using it, but took his advice about considering the options first. SM 7 felt the same as the entrepreneur, that he had also "dropped the ball" by letting the instruction to employees go out as a policy rather than a set of guidelines. He added that he spent a lot of time communicating with Group Heads about their thoughts, whereas the entrepreneur wanted to make a decision and not consider opinions. This is evidence of information processing theory that entrepreneurs consider their own attributes rather than external information in order to achieve their goals (Kahneman and Lovallo 1993; Lovallo and Kahneman 2003). SM 7 confirmed his Set II comments that he knew what caused the entrepreneur to be angry, but that the entrepreneur had strong views, such as employees should be business builders and keep their personal and private lives separate. He added the he could influence the entrepreneur with regards to how systems and databases in the organization were run. He also noted that the entrepreneur was not a traditional founder, and was open to change which was inconsistent to the findings in the younger Firm B but consistent with research that have examined different populations of entrepreneurs (Ucbasaran et al. 2010).

SM 7 felt that his interactions with the entrepreneur had made his style less directive and more questioning.

SM 7

> *There's a lot of value in what (the entrepreneur) does in terms of insight in terms of letting people think, and I want to do elements of the same.*

SM 8's interactions with the entrepreneur had decreased even more since Set II. He interacted primarily with SM 7 and had "ad hoc" meetings with the entrepreneur over strategy, or at monthly management meetings. He was unsure whether the entrepreneur's "light touch management" had caused the culture, or whether it was accidental.

SM 8

> *What has (the entrepreneur) done to it? Well, very difficult thing to say. If he's done anything it's a very subtle emphasis, and you know influencing decisions and sort of setting direction for things in a very loose way.*

SM 8 noted that the entrepreneur's interaction with the organization needed to be preserved in order for the younger generation to understand how it worked. In order for this to be meaningful, the entrepreneur would have to reframe his explicit knowledge for senior managers using their frame of reference in order for them to understand the entrepreneur's tacit knowledge. In this way the senior manager could internalize the tacit knowledge and it would become part of the senior manager's mental frame and knowledge base. SM 9 also felt that having monthly contact with the entrepreneur in a mentoring and guidance role would benefit his learning. However, SM 9 had little interaction with the entrepreneur since the handover of the Japanese work, but said that the entrepreneur still maintained an interest in the project. SM 10 added that he would prefer more interaction with the entrepreneur and had seen very little of him since Set II. SM 10 felt disappointed that he had had little interaction with the entrepreneur, and would like to understand the way he thought. He confirmed Set II comments that the entrepreneur was not as definitive as he would like him to be, and that occasionally he wanted direct guidance from him.

This chapter presented the findings of Sets I, II and III using the 19 categories derived from the empirical data focusing on how lack of sensemaking affects the cognitive interactions between the entrepreneur and senior manager and increasing cognitive distance and dissonance.

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8

Organizationally Defined Growth and the Interplay with Cognition and Biases

8.1 Introduction

Firm-level growth was defined by the entrepreneurs in this study as specific areas that are relevant to their respective businesses. This empirical evidence is more relevant than the undifferentiated general meanings of growth that ignore the heterogeneous nature of organizational growth and performance which is evolving and developing. These definitions are specific to these firms (Table 8.1), and the interplay of these factors are unique to this work. This said, how knowledge is shared and communicated in the context of manufacturing, technology and business development is embedded well within research streams in organizational theory and entrepreneurship studies. It is also noteworthy that recent literature recognizes that size is influential in relation to human resource management (HRM) decisions, and that different sized firms are affected differently by external factors affecting their growth (Kitching and Marlow 2013; Lai et al. 2016). In this work the standard definition of size applies; Firm A and B are medium in size (50–249 employees) and Firm C is large (more than 249 employees).

It is important to note that the temporal aspects and changes over time reflected here form an integral part of the analysis of these established firms

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Table 8.1 Firms A, B, C and issues domains

Name of firm	Issue domains/strategic issues
Firm A	Manufacturing
	Succession
	Recruitment
Firm B	Sales and marketing
	Recruitment
	Technology
Firm C	Recruitment
	Business development
	Strategy and vision

and can be described as entrepreneurial organizational plasticity (EOP). Like brain plasticity in neuroscience, the organizations investigated here had the ability to change over time and reorganize themselves. As established firms they are increasingly aware of competition and this chapter presents evidence of the entrepreneur-senior manager differences in bias towards how future growth should be achieved. Whether these firms stay on the course which proved to be successful when the entrepreneur was the main decision maker, or whether they explore and invest effort into opportunities that are not obvious (Penrose 2013) was significant. Specifically, the interplay of growth with entrepreneurial cognition and bias with senior management perception has an impact on Firms A, B, and C showing how EOP manifests itself with new and existing knowledge and information. The impact of leader-member exchange (LMX) is discussed in more detail in Chap. 11 because of the consequences on firm growth of the moderating and mediating effect of differences and similarities in their interrelationship.

Consistent with early firm research Chandler et al. (2009), sales and recruitment figures are important to Firms A, B, and C but are different measures and not considered by the established firms as directly linked. While growth research has focused on the individual and economic level, the interrelatedness of entrepreneurial cognition and senior managers' perceptions is lacking and the evidence is presented here. The evidence of how these firms have grown organically and not through acquisition (Lockett et al. 2011) is presented in Sect. 8.2. Paradoxically, the senior managers attributed organizational success to the entrepreneurial cognition, but simultaneously wanted change.

8.2 Set I: January–April

Firm A

The entrepreneur defined growth as "getting a bigger part of their existing client's outsourcing work", which they had developed for the past 20 years. The organization's growth was approximately 20 % cumulative per year. However, growth through continuous idea generation and exploration (Jelinek and Litterer 1995) was limited by the regulatory nature of the pharmaceutical industry, the restriction of available cash for expansion and the investors' need of intellectual property in their portfolio. The organization had been working on entering the US market for the past three years.

Entrepreneur

> *If somebody says have five million, just go do it, it could certainly double or treble the capacity of this company quite straightforwardly.*

The entrepreneur did not feel that the organization had grown much in the past 20 years, and would have preferred to reach its present size 10 years ago. He always had the vision of growing a large company, but some senior managers found it hard to grasp that it was always planned in his mind. However, SM 2 confirmed this was always his vision. Although his ambitions were always to increase the size of the organization, he was realistic about the opportunities to expand into the USA without sufficient funding which could cause cash-flow problems for the organization.

The growth prospect for the organization was to continue to provide outsourcing in their specialist area, which the entrepreneur had identified as the main opportunity when he started the business. In terms of this growth area, their clients were also their competitors and offered analytical services for the pharmaceutical industry. This was viewed as a threat to both further expansion as well as the ongoing revenue stream. Their growth strategy was to increase their European market, which stood at 30 % of their total sales, and control their exposure to the market. At the time of Set I interviews, the organization had a good relationship with the bank, and were aware of their inability to fund rapid growth into new geographical markets like the USA.

The entrepreneur considered that expansion into the USA was possible, but it would require setting up laboratories and an infrastructure with systems and processes to maximize their success. He believed he would be successful because of the integrity of the organization. SM 2 believed that the entrepreneur was growing the company to employ people and provide them with a living, rather than to fund his own lifestyle.

SM 1 regarded the manufacturing suite as a considerable growth opportunity for the organization while SM 2 regarded organizational growth as organic. Growth for SM 2 was to increase their staff levels from 72 to 85 within a year. The recession in 2008 however, meant that their clients had downsized and the organization did not need the extra capacity. SM 3 measured growth through sales turnover and employee numbers, and believed there was a clear business plan to achieve growth. The evidence contributes to the differences in growth definitions of senior managers.

SM 3 felt that the organization was doing well with their clients and growing steadily, although SM 4 felt that there had been challenges in growing the business through two recessions. SM 1 saw acquisition as a means towards growth, but believed that the entrepreneur's lack of desire to consider it was caused by his lack of specific experience in this area. He felt that as managing director (MD) he was less risk-averse than the entrepreneur, and would consider acquisition if it meant that the organization would increase in size. In terms of interaction with regards to any acquisition, SM 1 did not feel that the entrepreneur would encourage discussion about the issue because he had already made up his mind. In contradiction to SM 1's view that the entrepreneur did not take risks, SM 2 felt that the entrepreneur was willing to take risks when he had collected the information, but that she was probably more of a risk taker than he was.

Firm B

In Firm B, the entrepreneur spotted an opportunity for growth with existing clients, in issue domain 'Sales and Marketing', that could have been lost because of a problem in the archived filing system, costing the organization £800 000. SM 5 and SM 6, who volunteered to work over a weekend to sort it out, managed to correct the problem. The sales managers however, could not see the problem the entrepreneur had identified and kept telling him there was nothing to worry about because their sales figures were "good". The entrepreneur's measure of sales growth included new products and services to both old and new markets.

He was very keen that the organization became more efficient. SM 6 saw the situation as a retraining exercise for the sales department, rather than a cultural shift in the way people did things in the organization.

The entrepreneur believed that he could double the turnover of the organization; but that it would take time away from the other things he wanted to do. He used to measure the growth of the business in terms of their turnover, which was approximately £Five million, and the number of employees. More recently he considered the efficiency of the organization as an important aspect. SM 5 defined growth as profit, repeat business by clients and the development of certain markets. SM 6 added that growth meant turnover, and did not regard employee numbers as growth and confirmed that their sales figures had dropped.

Box 8.1 Internal Stakeholder Confidence

SM 6 mentioned that because of the historical success, the management team and employees agreed with the entrepreneur's decisions.

The entrepreneur's interactions with the organization had increased because of the drop in sales. SM 6 mentioned the issue domain 'Recruitment', and said that in 2007, the organization had a high turnover of staff because of the demands the entrepreneur placed on people. He said that 12 out of 35 people had left within two weeks of him joining the organization two years ago.

Firm C

SM 7 confirmed that they did not define growth because it was organic. He felt that that was because the organization operated as spin-outs and were always looking for opportunities that could take them into different directions. He added that issue domain ‘Recruitment’ limited their growth because of the challenges of attracting suitable candidates. He went further and said they did have a target of 20 % growth, and that profit and new technologies were key aspects of it.

SM 8 said that there was no agreement amongst the entrepreneur, senior managers and Group Heads about the purpose of the organization, except that the entrepreneur said it was to create an environment where opportunities could happen.

The entrepreneur mentioned that issue domain ‘Business Development’ was not the way the whole organization was structured. In the past, one half of the organization would develop technology as a packaged service, and then “roll it out” in the market. He felt that “growing” the organization using this approach to Business Development was no longer suitable and had to be replaced by a more questioning approach to what the market required. SM 10 confirmed what the entrepreneur has said, that each Group Head was responsible for their own Business Development.

The entrepreneur mentioned issue domain ‘Strategy and Vision’, and said that his approach to the business was successful but that if a part of the organization “were struggling”, he would focus more on a future strategy than he was presently undertaking. He added that he looked at time in terms of progress that they could make if the organization was in the same place in twelve months’ time, then they should act immediately. SM 8 acknowledged that the entrepreneur did not have a plan for the future.

The entrepreneur used numbers as a means to diagnose, not measure growth, but also looked at profit per head when measuring growth and added value. He added that for the printing side of the business the value was intangible, which made valuing the organization a difficult task. As a result, he made judgments on whether the organization was growing by looking at headline numbers of how intellectual property was being commercialized.

SM 7 mentioned issue domain ‘Business Development’, and said that he developed his part of the organization and was constantly looking for new opportunities. He felt that the organization was in a transition state. They were looking at diversifying by adding manufacturing to their client offering. This is evidence of superior performance by renewing the strategy and considering new streams of generating revenue. SM 8 had developed the technology for manufacture but SM 7 felt that he was resisting the opportunity to develop it further. He believed that SM 8's resistance was because he thought the entrepreneur believed that spins-outs were too risky. He went further and added that, in the past, the entrepreneur would "push you back" if he believed something was unusual.

SM 8 stated that when interacting with the entrepreneur, he left with a clearer picture about what the entrepreneur wanted, and tried to match his decision. SM 10 noted that the entrepreneur always encouraged him to develop new ideas, but knew he could exercise his "veto" rights.

There was a difference between the way the entrepreneur and SM 7 viewed

Box 8.2 Aligned Cognition

I will go in to talk about something and I will leave with some further thinking to do, or an idea of how he sees the world.

how they should approach new clients and the development of products.

SM 7

> (*the entrepreneur*) *will say*, '*well we don't go into the lab to try things*, *we just you know go and get projects clients*', *which is exactly what we don't want. The reasons we get projects with clients is because we do try things in the lab on our own and we come to them with crazy new things.*

Box 8.3 Fear in Interaction
SM 7
So if they want to keep in with him they just keep following the straight path.

> *The other thing I will do is I will package it up…so that it will work as a low risk opportunity for him* (*the entrepreneur*).

SM 7 added that the high-risk strategy the entrepreneur had with the printing part of the business, has resulted in a "skewed" view of risk in the rest of the business because of the length of time it has taken and the big investment they had made. However, this reflects the entrepreneurial orientation of the firm to be risk-taking, innovative, and proactive (Miller 1983; Covin and Slevin 1988).

SM 8 defined growth as client relationships and increased organizational value, while SM 9 defined growth as head count and the number and type of spin-outs. When speaking about growth, SM 8 added that he did not see the organization as risk-taking.

8.3 Set II: June–August interviews

Firm A

Although the entrepreneur had found an opportunity to develop a new product with a client, he felt that his organization did not have the funds necessary to invest in its development. He was still working on new opportunities, but was more focused on his grandchildren. Even though his son works in the organization, he felt that his children did not have the same ambition that he did. The entrepreneur was confused about why his children were not interested in the business, and put it down to the hard work and sacrifices they had witnessed their parents going through when they were growing up. SM 4 confirmed the entrepreneur's comment in Set I, that he always had a long-term vision for the company. The entrepreneur was surprised that when the business lost a large client project that threatened organizational growth the senior managers appeared unconcerned about the safety of the jobs. The entrepreneur believed that senior managers did not understand the significance of what happened, and he had expected that at least the management team would have been able to see it coming. SM 1 argued that it was impossible to have predicted that this client was going to withdraw from the UK.

The entrepreneur compared growth to a "wave with ups and downs", and argued that the company could only progress through a steady stream of innovation and new ideas. SM 4 also described organizational growth as "peaks and troughs". The entrepreneur confirmed that he still saw expansion into the USA as a possible growth opportunity. He added that the management should have a market penetration plan but did not think that they did. SM 3's view on growth was that the organization had "underlying growth" but that "top line" growth was not happening. However, he was confident that the organization would increase in size and output in year 2013 after the initial impact of the recession had passed.

SM 2 believed that the entrepreneur was still a risk taker which conflicted with what SM 1 stated about him in Set I interviews. However, SM 2 mentioned that she was less of a risk taker, and might have an influence over the entrepreneur not taking risks now which contradicted what she said in Set I interviews that she was a bigger risk taker than the entrepreneur.

The entrepreneur believed that the organization would continue to grow and perform with the current management team, but was concerned with the level of detail that he was still required to get into in order to follow up on management decisions. He was also concerned that the management team was not able to look ahead at what was needed for the future, but recognized that he needed to play less of a management role if he was to sell the business in the future. However, he was not confident that he could achieve that. SM 3 said that the organization was growing in other areas, except issue domain 'Recruitment'. However, they had recruited across the company recently, and were targeting senior people. He said that, because of the uncertainty and changes in their industry due to the recession, they had not recruited for a long time. The organization had lost three people and had not replaced them. SM 2, 3 and 4 confirmed their Set I comments that the growth of the company was dependent on the number of people they could recruit.

Firm B

The entrepreneur observed that the organization's growth had resulted in the employees feeling detached from their jobs. There was also less informal communication between employees about clients' needs when the size of the organization increased.

However, the entrepreneur believed the organization was not big enough and had not yet fulfilled its potential, and felt frustrated that other people did not have the same vision as he did. He referred to the "comfort zone" that people preferred to exist in, although he mentioned that the past 18 months were the most turbulent of the last 10 years. He added that when he was off sick for a few months, the organization did not grow and several clients were unhappy with the quality of the work they delivered. SM 5 shared the entrepreneur's concerns and said that growing past £5 million pounds in turnover was a challenge.

The entrepreneur mentioned the issue domain 'Recruitment', and said that even though the company needed to recruit people from the outside, it was politically difficult because of demotivating employees who had been with the organization for a long time. SM 5 believed that he could do the job just as well as one of the new recruits and confirmed the political challenges the entrepreneur faced. SM 5 confirmed that the entrepreneur was recruiting people from the outside in order to get experienced management input and that it created an uncertain environment. SM 5 also confirmed that the Sales Consultant was recruited in order to increase the sales team and to relieve the entrepreneur of some of his management responsibilities. The organization was still recruiting, and employed more people than they did in Set I interviews. The entrepreneur believed that one way of building the organization was to recruit people that believed in its potential.

The entrepreneur confirmed SM 6's thoughts in Set I that several people had left the organization because of his desire to "push the organization towards growth and drive through changes". The entrepreneur reinforced the point that when he was not there, their turnover dropped by 40 % within two months. He added that the organization was on the right track and growing again since his return. SM 6 contradicted this and argued that the entrepreneur's absence was not enough to justify the change in their sales; he believed that a slow time of year combined with poor sales processing was the cause.

SM 5 confirmed that employees had left because of the amount of pressure the entrepreneur exerted on them. He thought that the entrepreneur could have handled the relationship better. He also mentioned that since Set I, the entrepreneur's secretary left after ten years with the organization as well as the Sales Director. SM 5 and SM 6 believed that the entrepreneur was very secretive about the employees who had left. SM 6 felt that the entrepreneur was not aware of the consequences of hiding information from employees and thought that the entrepreneur believed that the organization had an open culture.

SM 6 noted that it would be useful for the entrepreneur to see how employees' negative feelings were linked to performance, but he commented that it was difficult to measure this impact.

Firm C

The entrepreneur discussed underperforming groups with SM 7, and was still involved in discussing employees leaving, and the effect of that on the organization. SM 8 confirmed that the entrepreneur did not have a strategy for growth. The entrepreneur felt that the employees and organization had survived the recession and thus had proved they could be successful. SM 7 believed that the entrepreneur was opportunistic and did not have a worked-through considered plan for the future. He believed that the company had grown through the entrepreneur's efforts and thinking, and not through the ex-founders, and confirmed his Set I opinion that there have been less spin-outs and fewer opportunities operationalized.

SM 8 questioned whether the last five years' growth was due to the entrepreneur, or SM 7's ability in issue domain 'Business Development'. He perceived that the entrepreneur was risk-averse because he had invested previously in the printing business and had "got his fingers burnt".

SM 7 mentioned issue domain 'Recruitment', and said that the entrepreneur had better insight into the head count than he did. He felt that the organization was risk-averse because they were "cash rich", and that the entrepreneur's focus was to maintain a profitable organization. He added that the organization was still increasing its head count.

SM 8 continued to believe that the organization's culture was set by the entrepreneur and had helped them to be successful. He added that each senior manager and Group Head had a different view of the purpose of the organization, but reinforced his Set I idea that it was about creating an environment in which people could create.

8.4 Set III: September–December

Firm A

The entrepreneur said that the business needed to change if it was to grow, and that SM 1 was equipped to deliver organizational growth. He stated that SM 1 trusted people to do the job much more than he had, and also delegated much more than he did, which was confirmed by SM 2. He went further to add that while he preferred to control all aspects of the organization, it was no longer a suitable way to develop the company. SM 2 said that the entrepreneur would try and find the solution, but realized now that there were other ways of getting to a decision besides his own path.

Entrepreneur

> *But as the company gets to a certain size you start thinking, well the company itself has a future, and it may be that I could limit where the company could go and that.*

He admitted that he would still take a risk, but that he was enjoying doing other things now. This was confirmed by SM 2 who perceived, that the change was due to the entrepreneur's age. In addition, SM 2 believed that clients preferred to see younger people in management in the organization.

SM 1 said that the entrepreneur was only comfortable making a decision with things that he knew very well, and cited this as a reason why the organization had not grown through formulation activities, with which the entrepreneur was unfamiliar. He said that the entrepreneur had spent a lot of time away from the organization since the Set II interviews, which he felt helped SM 1 build his confidence in decision making and running the organization. He declared that the entrepreneur trusted his decision making. SM 2 and 3 confirmed that the entrepreneur seemed more relaxed and spent less time in the organization, and that SM 2 spent more time with SM 1 rather than the entrepreneur in decision making. SM 4 noted that her relationship with the entrepreneur had become more personal and friendly rather than formal. He confirmed his Set II comments that there were aspects of the business, such as the management of projects and the commercial side, which were very different to the way the entrepreneur remembered them to be; that the entrepreneur was now mainly familiar with the quality systems and not how the organization was run. SM 4 said that some senior managers did not understand the quality side of the business in a similar way to the entrepreneur.

SM 1

> *He doesn't say it explicitly but implicitly he'd say "I can't understand why we don't do this. Well, we haven't' done it that way for years." That is how he remembers it happening. Not because that is the way it works now.*

SM 2 felt that the organization had not suffered from the recession, and that because their client contracts were long-term their workload was consistent, which is what SM 2 and 4 had stated in previous interviews.

SM 4 noticed that her interactions with the entrepreneur were less frequent than when she was interviewed in Set II, and that the mentoring support she was receiving from the entrepreneur was replaced by that from other senior managers. She also noticed that the day-to-day running had changed since the entrepreneur had handed over to SM 1, which she believed was due to SM 1's lack of experience. SM 4 said that one of the differences between the entrepreneur and SM 1 was that the entrepreneur would say "yes we can do that" and know what it took to get it done, whereas SM 1 would say "yes we can do that" and had no idea how to proceed. She felt that the entrepreneur mentored SM 1 constantly, which resulted in similar management styles with subtle differences.

Issue domain, 'Recruitment' for senior positions did not happen because the organization was busy with analytical work. SM 3 said that he didn't want to "mess it up for clients" and was not convinced by the quality of the recruits they interviewed for the senior positions. However, SM 2 said they had recruited six employees, which in Set II interviews she had mentioned she wanted to do, and SM 3 said they had recruited four people for laboratory work, and would be recruiting again in 2013. Both SM 2 and 3 revealed that customer sales had increased.

SM 2 said that there was very little evidence for the issue domain 'Succession' and added:

SM 2

> *I think the lab managers, they are all quite comfortable, but I think* (*SM1's*) *knowledge of perhaps chemistry is not as good as* (*the entrepreneur*), *and so on certain procedures they will go straight to him.*

The entrepreneur realized that he could not do everything himself, and that by developing the right structure, the organization could develop without him. The entrepreneur went into the office once or twice a week rather than daily like he used to do.

Specifically, in Firm A the lack of profitability of the issue domain 'Manufacturing' was regarded by the entrepreneur as a failure of the MD senior manager to plan, thoroughly investigate, and provide accurate financial data.

Firm B

Set III presents the analysis of the interviews that took place between September and December with the entrepreneur and two senior managers. I tracked any changes to the interactions between the way the entrepreneur thinks and the senior manager perception over the issue domains and any new issues that had arisen since Set I and Set II interviews.

The entrepreneur said that issue domain 'Technology' had started to produce good results in Sales. He felt the new technology was more comfortable for SM 5 than it was for the older, more experienced sales employees. However, he failed to mention his own reticence, due to experience and age, with regards to the technological improvements. Both SM 5 and SM 6 felt that the entrepreneur was more confident with the changes in issue domain 'Sales and Marketing' now that he was seeing increased sales. SM 5 noticed that the entrepreneur was more confident in the team he had around him now than he was at the time of the Set I and II interviews. The organization had recruited 20 new staff in three months since Set II interviews, and would be recruiting in the following year to replace ex-employees and to cope with the expansion of the organization. The entrepreneur confirmed that his strategy had changed, and he was now looking at longer-term contracts, confirming his Set II thoughts.

Entrepreneur

I'd rather have five years work at 40 % rather than a year's work at 50 %.

The entrepreneur had made fewer harsh decisions recently than he would have made before, such as recruiting certain types of employees, or committing to the additional expenditure during a poor economic climate. He felt that if he had made even more ruthless decisions with employees and clients when he first started the company, the organization would have been a lot bigger than it was now. However, the entrepreneur mentioned that issue domain 'Sales and Marketing' was producing new clients.

The entrepreneur accepted that the turnover and profit would be down, due to his new longer-term strategy, but felt that the change was necessary. He used to measure the organization's growth through profit, but the success of his new strategy, which focused on organizational stability, was still unclear. SM 5 and SM 6 confirmed that previously the entrepreneur would not have accepted the drop in sales. They stated that he could take more risks now that the entrepreneur was not involved in the detail of the issue domain 'Sales and Marketing', because the entrepreneur would make it difficult to implement changes quickly, because he didn't understand the benefits of issue domain 'Technology'.

The entrepreneur mentioned that he had "mellowed" with age and that others regarded him as an "unreasonable man". The entrepreneur described an employee whose role he had changed, to improve their health and safety standards within three months rather than a year, something the employee had thought was impossible. The organization had experienced several changes since Set II interviews. The entrepreneur mentioned the issue domain 'Recruitment', and the changes to the sales team, which resulted in significant improvements in systems and processes. The entrepreneur believed that if SM 5 had joined the organization five years earlier, issue domain 'Sales and Marketing' would have been technologically more efficient. SM 5 mentioned issue domain 'Technology', and said that the website was now up and running, which it wasn't in Set II, and confirmed the entrepreneur's comments that the system was more efficient. He noticed that the biggest change in the organization since

Set II interviews was the entrepreneur's attitude, which had become more "laid back". He added that the entrepreneur was more emotional in his decision making than he used to be, and that his perception of employees' motivation had changed for the better. SM 5 was no longer looking for a new job, but added:

SM 5

> *If we don't make money now for the next three months then, for good reason, he (the entrepreneur) will change the way he thinks about things and drastic changes will happen. So I'm sort of prepared for that really.*

SM 5 and SM 6 agreed that the entrepreneur's change in attitude had gone too far and that he should still be concerned with cost and performance, but that everyone was happier around him now than in Set I and Set II.

In Firm B, the entrepreneur regarded the failure of issue domain 'Sales and Marketing' to implement new technology to improve systems and processes as the sales manager's lack of opportunity recognition and responsibility. In Firm C, the evidence for the slow profitability of innovative technology was attributed to the market not being ready.

Firm C

The organization was doing well even though the entrepreneur was not as involved as he had been in Set II. SM 7 added that he could not bounce the strategic issues off the other Group Heads in the way he could with the entrepreneur, because it sometimes involved them. He noted that because costs were controlled, the organization was on target with profit but down on sales. He added that growth would come from issue domain 'Recruitment' and identifying new opportunities, although finding suitable recruits had proved to be difficult. SM 8 and SM 9 confirmed that they had not recruited new staff to their groups since Set II.

SM 7 believed that the motivation to increase the size of the organization now was not the same as when the founders started it, and the financial motivation level was not the same for the new generation of recruits. He confirmed his Set II thoughts that the entrepreneur was cautious with regards to risks such as a new building, which he did not understand. Although as a technology design and development firm the senior managers had a strong sense of identity and shared understanding of what they did. SM 8 confirmed his Set II thoughts that there was no organizational strategy for growth, and felt the entrepreneur would argue that they did not need one. He added that although growth was organic, they would also attempt to license technology. He didn't think the entrepreneur was "motivated" to discuss how they would achieve this, but perceived that they had the freedom to decide themselves.

SM 8

> *One of (the entrepreneur's) favorite phrases is "serendipitous opportunity". He sort of feels that if you send enough bright people bumping around in the world they'll find enough interesting things, and if they are smart enough they'll pick up on them. And the business will do ok.*

SM 8 mentioned that issue domain 'Business Development' did not have any central decision-making function. However, he added it would be helpful if they had more strategic direction from the entrepreneur.

In Firm C however, externalizing the failure to the lack of readiness in the market and opinion leaders in the environment had some merit according to earlier research undertaken by Schein (1987). It might well be that in Firm C; the 'failure' could be attributed to both internal and external factors.

8.5 Organizational Failure

Organizational failure has been conceptualized as a reduction in performance in the cognition-success-attribution cycle, and represented the conflict between the interrelated parts of the system and reduced performance with potential for organizational decline.

These findings also support Miller's view that even though the organization had changed over time, the entrepreneur still used pre-existing mental frameworks to understand and make decisions. This is in contrast to the MD senior manager who attributed the organization's success to the strategic placement of highly skilled workers in the right market.

In Firm A, the senior managers with greater technical expertise and experience were more aligned with the entrepreneur on attributing success to high levels of technical quality. In this example, the MD senior manager recognized the need for quality and diluted the potential for a monolithic culture created by the entrepreneur who used tried and tested approaches to growing the organization. Firm C entrepreneur and MD senior manager did not have this conflict because they had a similar scientific background. In this way, the evidence showed a commonality between the interactions in Firms A and C in terms of the interactions of the entrepreneur and senior managers. As long as the entrepreneur was the key decision maker rather than senior managers, the decision was respected because of historic success, but it moderated their interaction.

In the firms the senior managers' desire to focus on one core strength was clearly an issue that caused cognitive dissonance between the entrepreneur and senior managers.

8.6 Linking Interplay to Growth and Performance

The modification to the performance concept supported (Wiklund and Shepherd's 2005) argument that the EO conceptualization of performance was incomplete and more complex than the indicators in the original Lumpkin and Dess (1996) model. In addition, the concept now reflected the varied growth definitions of the entrepreneurs and the senior managers, and the growing heterogeneity of entrepreneurial growth in academic literature noted by Wright and Stigliani (2013). The differences in growth definition in Firms A, B, and C also support Levie and Lichtenstein's (2010) arguments that patterns and rates of growth varied in entrepreneurial organizations.

When entrepreneurs and senior managers used a sensemaking approach when faced with growth decisions, then the difference between entrepreneurial effectual reasoning and senior manager resulted in cognitive dissonance. This interpretation of the interaction between the entrepreneur and senior manager supported the effectual elements of isotropy, that entrepreneurs were not clear what elements of the environment to pay attention to, or to ignore. Consequently, the development of new mental models such as market, product, and organization was approached through an effectual process for entrepreneurs and causal for senior managers.

The central systems thinking argument in this research is that organizational performance is mediated by positive feedback and moderated by negative feedback. The conflict in the interrelationships meant that the organizational system was out of balance because the conversion processes of entrepreneurial decision making to output affected performance and organizational factors.

Although Firms A and C were not underperforming at the time of this analysis, there was senior manager frustration about the amount of financial resources of one particular project in Firm C. This was reflected in organizational theory which suggested that the consequence of technology investment is seldom immediately enjoyed (Senge 1990). However, the age and maturity of the organization coupled with the experience of the entrepreneur meant that the entrepreneur had a greater awareness than the senior managers of the temporal dimension to success and building value. Cognitive conflict between the entrepreneur and senior managers demonstrated that unless the system was rebalanced and a modified representation of success was established, their interrelationship would affect performance.

Firm B displayed a period of underperformance and resorted to autonomous decision making. The organizational system returned to a balance by reinforcing the same system of autonomous entrepreneurial decision making. This input was converted into increased sales output.

The entrepreneurs in all firms raised the issue domain 'Recruitment' as a significant contributor to growth. In Firm C there was a pattern of different recruitment decisions made by the senior manager in comparison to the entrepreneur. The recognition of the diversity in experience and cognition of the senior managers was more evident in entrepreneurs in Firms A and C. This meant that the dilution of the entrepreneur's recruitment decisions by the senior managers had slowly started to change the thinking created by the entrepreneur and reflected more of the senior manager thinking. This empirical evidence has not been captured before, although studies that look at general HRM practices in terms of employment numbers and salaries are shown to help survive recessions in larger companies than smaller ones. The firms here are on the medium-large and all have HRM processes and practices in place.

Senior managers perceived that a new cognitive approach to the market, structure, strategy, and growth was needed. Organizational learning researchers have argued through action learning, that if organizations are not adapting then they are failing. Revans (1971, 1978) argued earlier that in a situation such as this, then managers needed to be constantly learning from each other. However, the evidence suggested that the entrepreneurs found it a challenge to adapt to senior manager cognition. This research showed that although in the short term the performance of the organization increased with autonomous entrepreneurial decision making, other elements of performance were reduced, such as overall performance, stakeholder satisfaction, and employee numbers.

The question of whose cognitive processes should be adopted to increase and maintain performance seemed to underlie the interpersonal conflict that was apparent within the firms although it appeared to be implicit rather than explicit. There was evidence of hidden balancing processes (Senge 1990) in which the entrepreneur established the norm, with subtle attempts at maintaining the traditional ways of doing things. The balancing processes are a way of interpreting senior manager cognitive dissonance and frustration between what is expected and explicit, and the hidden processes that are expected and implicit by the entrepreneur. In Firms A and C, balancing is being attempted by adopting the entrepreneur's successful cognitive processes.

The evidence in Firm A illustrated that the interrelationship was improving because the entrepreneur was starting to encourage shared communication about the strategy that increased performance (Harrison and Leitch 2005; Wang 2008) and counteracted the Icarus decline. The quote below demonstrated that the entrepreneur and senior manager were beginning to share performance information.

Firm A, Internal Stakeholder

> *I think there's an interest in how you change pace of growth. Can you do it in a company that is mature? Does the size of the company become naturally limiting at some point?*

8.7 Summary

The entrepreneurial orientation concept was extended to include bias, temporality, and entrepreneurial cognition. The original performance concept (Lumpkin and Dess 1996) included sales growth, market share, profitability, overall performance, and stakeholder satisfaction. This empirical research for established entrepreneurial organizations extended the performance concept to include technological advancement and long-term value because they were regarded as important in each case. Industry-specific definitions of growth and performance, such as increased manufacturing (Firm A and C) and the acquisition of intangible assets and spin-outs (Firm C) have not been included because of the specificity to one case. This chapter demonstrated how the dominance of entrepreneurial cognition was linked to success, which either reinforced the interrelationship of organizational parts in a system or counteracted it.

Through the cognitive psychological perspective, the analysis has demonstrated that established mental models and cognitive differences reinforced the cognition-success-attribution cycle that led to the Icarus demise. Additionally, from an organizational and management perspective, the findings showed that although entrepreneurial cognition was dominant, the interdependency of individual concepts in the conceptual framework all work together to either moderate or mediate the interaction.

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9

Temporality and the Significance of Entrepreneurial Age 4200

9.1 Introduction

Temporality is a focal point in this work in gaining insight into the interplay with entrepreneurial cognitive processes and senior managers' perception and has been largely ignored in entrepreneurial studies (Aldrich 2009; Miller and Sardais 2015). Decision making is regarding as an ongoing process, subjected to changes over time, and the empirical data and analysis presented here reflects its dynamic and ongoing nature. To explore what happens in the interactive decision-making process, Stage I, II, and III data as well as email data between the entrepreneur and senior managers was captured and the frequency of quarterly interviews recorded over a period of 12 months. Email data recorded the interaction as it was happening in real time, and through revisiting cognitive maps with each interview the chronological order of growth issue in the business, the changes and interrelatedness were monitored and assessed. This chapter presents the issues related to the entrepreneur's cognitive duality and the interaction with the senior manager who perceives the temporal aspects and dualities differently. Some of these differences are due to imprinting

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based on the entrepreneur's background and experience and can be seen to affect the entrepreneur-senior manager interrelationship.

Timing is linked to every aspect of the theoretical framework in this study. The respective patterns of; changes in decision making, interactions, and interrelations between actors, growth, or decline and ageing firm and entrepreneurs, can only be observed over a period of time. This chapter looks at the contextual factors associated with organizational age that inhibit or enable growth.

The evidence of both individual and organizational-level ageing, affects the interrelationship between the entrepreneur and senior managers.

9.2 The Interdependence of Temporality and Entrepreneurial Cognition

There are two points here that reflect the systems approach of "circles of causality" (Senge 1990: 73). The first area causing conflict between entrepreneurial cognition and senior manager is that entrepreneurs were unaware of the significance of sharing decision-making processes and information with senior managers earlier in the process. The second area of causality was the entrepreneur's ability to make quick decisions and his lack of desire to indulge in consensus seeking, in case the window of opportunity closed. The example below represents the entrepreneur's thoughts about how the senior managers should be undertaking decisions.

Firm A, Entrepreneur

> *They need to be moving on and moving upwards in terms of their thinking and what they are doing.*

So although this interrelationship appeared to be a linear cause-effect process, the influence of the temporal dimension showed how the entrepreneur's cognition reinforced the perception of the senior manager in a downward reciprocal loop.

9.3 Linking Interplay to Organizational Factors

The modifications to the conceptual framework included organizational factors that emerged out of the data analysis of age, size, strategy, and firm resources. Organizational age was found to have an important influence on performance in all the firms, which in turn had a moderating or mediating effect on the interrelationship between the entrepreneur and senior managers. The concept that age affected performance is also supported by Rosenbusch et al. (2001) meta-analysis of the influencing factors on organizational performance. Entrepreneurial and organizational age is discussed in life-stages' literature on growth (Greiner 1972; Churchill and Lewis 1983; Levie and Lichtenstein 2010) but is not reflected in research on cognitive differences (Mitchell and Shepherd 2010). The evidence in this research is that the age of the entrepreneur and the organization affected the interrelationship because of the entrepreneurs pre-existing mental models and experience. The cognition-attribution-success cycle discussed earlier was developed over a period of time in which the entrepreneur was making decisions that led to success. Consequently, the older the entrepreneur and the organization were, then the more evident the cognition-attribution-success cycle became. In this way having more experience, success in decision making and opportunity, can be seen to be a function of the age of the entrepreneur and the organization. This acquisition of knowledge and skills can be considered as 'improvement' due to the temporal nature (Roe 2008) of the building of a business, but the evidence for the different pace can be observed in the conflict this causes in their interrelationship with senior managers.

The entrepreneur in Firm B had more of an autocratic cognitive style when changing strategy than the entrepreneurs in Firms A and C who were 10 years more experienced and were considering succession. However, the senior managers felt that they did not have the experience to decide strategy without the entrepreneur's consent and participation. The decision to allocate firm resources was made by the entrepreneur and discussed earlier with regards to investment decisions in Firm A and issue domain 'Recruitment' decisions in Firms A, B, and C.

Firm C, Senior Manager

> *So actually what we want, what excites someone to want to join this company, and what excited people 25 years ago, will be different.*

The increasing size and complexity in Firms A and C also made it difficult for entrepreneurs and senior managers to have as many informal interactions compared to what occurred during earlier stages of the organization's growth. This reinforced how a change in entrepreneurial mindset affected organizational learning. As the size of the organization increased, both in terms of the number of senior managers and the increase in systems and processes, the communication chain between the entrepreneur and senior managers increased. In this way organizational theory offered a valuable insight as these entrepreneurial organizations became more like large classic organizations with more complex systems and processes. The point in time when this diversification away from regular interactions, as systems and processes become more complex, can also be seen as bifurcation Waller et al. (Waller et al. 2005) or the 'forking, dividing and splitting' of cognitive phenomenon. The evidence in Set I, II, and III reflects the points in time when these differences are the most notable.

9.4 Set I: January–April

Firm A

Change, Generation and Temporality

The entrepreneur had always had a drive for change even before he started the organization. He had adopted a traditional business model, which was different from organizations that follow the market trend and then run out of money.

> **Box 9.1 Temporality**
>
> SM 1 suggested that the entrepreneur's sense of time was different to his own, and that the entrepreneur felt everything should be done quicker than it actually was being done.

SM 1 argued that the entrepreneur was not time-bound in the way the entrepreneur believed he was. However, with regard to decision making SM 1 took longer than the entrepreneur to make a decision. He believed that it was due to his lack of experience compared to the entrepreneur's. SM 1 suggested that the entrepreneur made quicker decisions than he did when they had the same information. This included decisions concerning the technical, quality, regulatory, and operational aspects of the organization. He also suggested that he minimized the time when making decisions.

SM 2 and SM 4 supported SM 1's view that the entrepreneur was not good with time and did not work to time scales. However, SM 4 felt that he was improving his time management ability. SM 2 remarked that when something needed to be done, the entrepreneur would ensure that it was done in the given time, and that keeping appointments was always a challenge for him, whereas she was always five minutes early.

SM 3 and SM 4 mentioned that the entrepreneur worked according to deadlines, and would hold people accountable to a promised time if they gave him one. SM 2 preferred to "get it finished and off my desk", whilst the entrepreneur didn't get stressed about things in the same way, and used timing to get something done in a different way. SM 3 felt that the entrepreneur used to be more concerned about punctuality in the past than he was today.

SM 3 said that he tried to do things quickly even though it was made difficult due to a heavily regulatory environment. The difficulty was eased by the entrepreneur, who SM 4 said always pushed the time boundaries imposed by industry standards.

Firm B

Change, Generation, and Temporality

SM 6 explained that he worked quickly and added that other people considered the entrepreneur demanding of their time. The entrepreneur believed that most people came to work for a standard of living only, and not for a promotion or the challenge of the job, but believed that

SM 5 and 6 were motivated by job satisfaction. SM 5 added that other managers did not feel part of the organization, and felt excluded by the entrepreneur's lack of communication.

The entrepreneur felt that when he changed a system because it was not working efficiently, the employees, management, SM 5 and 6 would regard it as him constantly changing things, rather than something they should have been doing independently. This was confirmed by SM 5's earlier comments.

SM 5

> *He doesn't want the processes changed, he just wants the answer. So that is why when I changed that process, I didn't go to him, because he would have said no that's the way we always do it.*

Although the entrepreneur recognized that the organization needed to change in order to grow, SM 5 felt that it was more a theoretical than a practical intention to change. He added that the entrepreneur was not interested in drastic change, and was happy with the organization the way it was. However, SM 5 said that recently, the entrepreneur was more happy with changes than he used to be. Although he added that it might have had something to do with the quality of the ideas, rather than the entrepreneur not wanting change. This is another example of bifurcation caused by different perceptions of a growing firm.

The entrepreneur was determined that projects should finish on time, and used the example of a contract manager who did not have the same time effectiveness and urgency in delivering a quality project to the client. Up to a point in time the contract manager could become aligned with the entrepreneur but now ultimately after several disagreements with the entrepreneur, the contract manager resigned and was replaced. He added that the organization was wasting time and money because of inefficient work ethics. He felt that he never had enough time to do the things he wanted to do and that balancing work and home was a constant challenge. This is evidence for the breakdown of the psychological contract and the changing temporality of the interrelationship.

SM 5 stated that the entrepreneur believed that things should happen faster than they did, and that with regards to issue domain ‘Technology’, the entrepreneur did not understand that there were no established processes to monitor issue domain ‘Sales and Marketing’ on the website. However, he added that the entrepreneur was beginning to see that the answer to his questions on sales and marketing opportunities were being answered a lot quicker with the new technology system implemented by SM 5. He thought that if the entrepreneur were to do certain tasks in the organization now, he would take a lot longer than other employees because he had forgotten how long they took. SM 6 revealed that the entrepreneur was always pushing people to achieve better results and didn’t like employees engaging in activities which wasted time. The entrepreneur’s perception was that time is money. He added that the entrepreneur focused on the small things, and did not like anybody to stand around the coffee or water machine chatting when they had work to do. He went further and said that the entrepreneur reacted quickly if he felt that the sales department was under performing.

Firm C

The entrepreneur had a longer view of time than SM 7, which was confirmed by SM 10. SM 7 stated that the entrepreneur looked at longer-term value, but didn’t think that his view had filtered down to the organization. Employees and Group Heads were still working to shorter timescales. He said that senior managers did not realize the entrepreneur’s view of time, although SM 10 added that the entrepreneur’s long-term view had influenced him and SM 8.

SM 7

> *He had a far longer horizon than anyone else, so he tends to think 10 years and I tend to think a few years and the other guys tend to think short-term.*

SM 10 confirmed that the entrepreneur’s approach to time had not filtered down to him, and said that he had deadlines that SM 7 and SM 8 did not understand.

Box 9.2 Different Definitions of Opportunity Recognition

The entrepreneur said he achieved results to meet client requirements in a quick and effective way. SM 7 said the entrepreneur was no longer bringing new opportunities to the organization.

SM 8 declared that he did not have time to get into the detail that he needed and that he was forced to "let people get on with it". The entrepreneur in contrast, naturally felt that people should have the freedom to decide without being directive. Although he insisted that time was money.

Entrepreneur

> *Opportunities, you gotta grasp them quickly…cause they'll go away. If it's a problem it will run away from you and if it's an opportunity it will slip through your fingers. In order to achieve the unreasonable demands from clients, we have to be ruthless and prioritize.*

SM 7 stated that he was part of the new generation that was running the organization and that the entrepreneur was scared of losing the culture that he and the other founders had developed. He believed that the organization had to change and that he and the entrepreneur had the same view on the change needed.

SM 7

> *I think there is a different generation so erm…not talking about me and (the entrepreneur), there is a different generation there, and also there's a different generation of young people who are now joining the company. So actually what we want, what excites someone to want to join this company, and what excited people 25 years ago, will be different.*

SM 7 used the example of the new generation who wanted to use Linkedin, an on-line social website to talk about themselves, and the entrepreneur who wanted to ban the use of it in the organization. He believed that the entrepreneur had made a decision about it without considering all of the information, and that he had to persuade him to reconsider it. He added that the entrepreneur would just say "no" if he thought something was a bad idea. SM 7 revealed that it was hard for him and the entrepreneur to stay in touch with the new generation's work ethic and communication with regards to information sharing.

9.5 Set II: June–August

Firm A

The entrepreneur confirmed his thoughts from Set I interviews that the organization took too long to develop, and it should have happened sooner than 20 years. He felt that this slow development of 15–20 % a year was not fast enough for investors and therefore the organization could not attract investment.

SM 2 said that the entrepreneur was relaxed and didn't stress or rush, but was always quick with regard to invoicing clients, SM 3 mentioned that the timing of the issue domain 'Manufacturing' did not go according to the predicted plan and was a month behind schedule. SM 4 confirmed that the manufacturing suite had taken longer than people had anticipated, but that she, because of her previous manufacturing experience, had predicted this outcome.

Firm B

SM 5's role had changed since Set I from Marketing Coordinator to Commercial Manager which involved more client interaction. He mentioned issue domain 'Sales and Marketing', and said that in his previous role, the contacts that he had developed would not be converted to a sale by him, whereas in his new role he had end-to end client control. With regards to these changes, the entrepreneur was able to make quick decisions if he felt confident that he was making the right decision, because there was no board to delay the decision.

The entrepreneur believed that people took too long to do a job and that they did not make the connection between getting the job done quickly, and the number of orders they received. SM 6 confirmed the entrepreneur's view on time, and said that the entrepreneur believed that saying goodbye to an ex-employee was wasting valuable time. The entrepreneur also felt that responding quickly to a client was very important in the client relationship.

Firm C

The entrepreneur used the marketing brochure as an example of how decisions were made by Group Heads, without them taking the time to consider the implications, which confirmed his thoughts in Set I. In this example he disagreed with a decision because it lacked consideration of the customer and market. He believed it was not sufficiently thought through.

The entrepreneur commented that by SM 7 taking over the day-to-day running of the organization, he would create change, but that the culture, values, and ethics were embedded, and would be unaffected. He believed that the lack of understanding about the way he thought was not due to a generation gap, but rather a lack of confidence and a belief by the senior managers and Group Heads, in what the organization was about.

Box 9.3 Different Risk Definitions

A lot of people that have just come out of the education system and for maybe the first few years in a corporate environment have got this 'we must do things properly, we must have procedures, standard operating procedures'. And pick up all the risk aversion and structures and procedures that clog up quite a lot of corporate activity.

The entrepreneur was still in the process of handing over the responsibility of the organization to SM 7 who had no idea when it was going to happen. SM 7 suggested that the entrepreneur felt nervous about leaving, and whether he would have the capability to do the job.

9.6 Set III: September–December

Firm A

Organizational factors have been extended to include the age of the organization, but top management team characteristics were not considered in this research and therefore do not appear in the conceptualization. However, top management cognition and expectancy was found to affect the interaction, and the conceptual framework has been modified to include this aspect. Age is characteristic of the lifecycle models and the evidence in this research demonstrated that age made a difference in the entrepreneurial cognitive approach to growth and performance. For example, the entrepreneur in Firm B had an aggressive sales approach, compared to the entrepreneurs in Firms A and C, indicative of the differences in age and size. Organizational age and size were variables mentioned in 74 of 104 stage models investigated by Levie and Lichtenstein (2010). The evidence also showed that the dynamic tension and entrepreneurial passion to enact an opportunity in pursuing growth is higher for the entrepreneur in Firm B than entrepreneurs in Firms A and C, extending the Levie and Licthtenstein's model to established entrepreneurial organizations.

Firm B

The entrepreneur said that issue domain 'Technology' had started to produce good results in sales. He felt the new technology was more comfortable for IS 5 than it was for the older, more experienced sales employees. However, he failed to mention his own reticence due to experience and age with regards to the technological improvements. Both IS 5 and IS 6 felt that the entrepreneur was more confident with the changes in issue domain 'Sales and Marketing' now that he was seeing increased sales. IS 5 noticed that the entrepreneur was more confident in the team he had around him now than he was at the time of the Set I and II interviews.

The organization had recruited 20 new staff in three months since Set II interviews, and would be recruiting in the following year to replace ex-employees and to cope with the expansion of the organization. The entrepreneur confirmed that his strategy had changed, and he was now looking at longer-term contracts, confirming his Set II thoughts.

Entrepreneur

> *I'd rather have five years work at 40% rather than a year's work at 50%.*

The entrepreneur had made fewer harsh decisions recently than he would have made before, such as recruiting certain types of employees, or committing to the additional expenditure during a poor economic climate. He felt that if he had made even more ruthless decisions with employees and clients when he first started the company, the organization would have been a lot bigger than it was now. However, the entrepreneur mentioned that issue domain 'Sales and Marketing' was producing new clients.

The entrepreneur accepted that the turnover and profit would be down, due to his new longer-term strategy, but felt that the change was necessary. He used to measure the organization's growth through profit, but the success of his new strategy, which focused on organizational stability, was still unclear. IS 5 and IS 6 confirmed that previously the entrepreneur would not have accepted the drop in sales.

IS 5 stated that he could take more risks now that the entrepreneur was not involved in the detail of the issue domain 'Sales and Marketing', because the entrepreneur would make it difficult to implement changes quickly, because he didn't understand the benefits of issue domain 'Technology'.

Firm C

The organization was doing well even though the entrepreneur was not as involved as he had been in Set II. IS 7 added that he could not bounce the strategic issues off the other Group Heads in the way he could with the entrepreneur, because it sometimes involved them. He noted that because costs were controlled, the organization was on target with profit but down on sales. He added that growth would come from issue domain ‘Recruitment’ and the identification of new opportunities, although finding suitable recruits had proved to be difficult. IS 8 and IS 9 confirmed that they had not recruited new staff to their groups since Set II.

IS 7 believed that the motivation to increase the size of the organization now was not the same as when the founders started it, and the financial motivation level was not the same for the new generation of recruits. He confirmed his Set II thoughts that the entrepreneur was cautious with regards to risks such as a new building, which he did not understand. IS 8 confirmed his Set II thoughts that there was no organizational strategy for growth, and felt the entrepreneur would argue that they did not need one. He added that although growth was organic, they would also attempt to license technology. He didn’t think the entrepreneur was “motivated” to discuss how they would achieve this, but perceived that they had the freedom to decide themselves.

IS 8

> *One of (the entrepreneur’s) favorite phrases is “serendipitous opportunity”. He sort of feels that if you send enough bright people bumping around in the world they’ll find enough interesting things, and if they are smart enough they’ll pick up on them. And the business will do ok.*

IS 8 mentioned that issue domain ‘Business Development’ did not have any central decision-making function. However, he added it would be helpful if they had more strategic direction from the entrepreneur.

The temporal aspects of entrepreneurial cognition and senior manager perspectives is presented here as a longitudinal study with critical points which are enacted within the organizational context of growth and development. Changing interactions are in part interpreted as either improvement, bifurcation, or a relapse with regard to key cognitive processes. This chapter is evidence that the firm evolves through understanding the ‘what’ and ‘how’of the entrepreneur and senior manager dynamic interplay.

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10

Linking Open Systems Thinking to the Entrepreneurial Paradox

10.1 Introduction

Systems thinking, pioneered and developed further by the biologist and psychologist Gestalt, as early as the 1920s, considered interrelationships and inter-connectedness of concepts and the significance of context. Management science has since adopted and advocated systems thinking as an alternative to the traditional and mechanistic ways of managing change and people, which was linear and failed to offer insight on these complex dynamics. The evidence in this study shows the entrepreneur-manager interrelationship and firm changes happening in their natural context, and the organization adapting to the change while preserving strategic aspects of growth and performance over a period of time. The original conceptual framework using Lumpkin and Dess (1996) entrepreneurial orientation framework was modified after the analysis to include the dynamic interrelationships reflective of an open system, because I was more conceptually conducive to explore these relationships.

According to the systems view, and the evidence in this study, the entrepreneur-senior manager relationship is recognized as being between individuals but that their interactions affect the firm. Their relationship

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can therefore only be understood in the context of the organization, and more specific to this study, the context of organizational growth and development. System thinking is regarded in this work as an interconnected holistic view of the world identified by Richmond (1993) as thinking skills in which he acknowledged dynamic, system-as-cause, forest, operational, and closed-loop thinking. Dynamic thinking is relevant because it has an historical element which focuses on the temporal aspects of a decision. System-as-cause thinking suggests that decision makers have control and that only plausible reasons for the patterns in firm behavior should be considered. Forest thinking is applied in the analysis of the empirical evidence because entrepreneurs view the firm as a whole, rather than in unconnected parts, which is a different view from some senior managers with specific roles and responsibilities. The interdependence within a system and explanations of how concepts affect each other are referred to by Richmond (1993) as operational and closed-loop thinking.

The informal structures referred to in systems thinking includes communication and the sharing of tacit knowledge. In this way the conceptualization of the interrelationships and interdependencies in the conceptual framework incorporated the five factors in open systems (von Bertalanffy 1968): input; throughput; output; environment; and feedback to demonstrate both explicit and implicit causality. The reason for the modification derived from the longitudinal empirical evidence and highlighted the crucial interactive processes, specifically the continuous interplay between decision making and opportunity recognition, between the entrepreneur, senior manager, and growth of the firm. The power of this interplay is apparent in the empirical evidence.

10.2 Modification of the Conceptual Framework Based on Open Systems Thinking

The original conceptual framework provided an empirically validated model for this research. The entrepreneurial orientation configuration sought to show the interplay between entrepreneurial orientation, performance, organizational, and environmental factors. However, it failed to capture the reciprocal relationships between entrepreneurial cognition and senior manager perception, temporality, bias, and specific performance measures indicated by the evidence in a conceptual manner. The evidence shows the qualities of configuration theory, that different organizations have different drivers. In this context the configuration is defined according to factors such as age, firm size, cognition and bias, temporality, and entrepreneur-senior manager interaction.

In order to gain further insight into the implicit causal interrelationship between the entrepreneur and senior manager perception, I referred back to organizational literature which reflects the link between original configuration theory (Miller 1983) and Mintzberg (1973). This section shows how the conceptual framework was modified to incorporate the open systems concepts of input, output, and transformation in a feedback loop (von Bertalanffy 1968; Senge 1990) that reinforced growth as a system of interlinking parts.

Three of the core assumptions of open systems thinking are used to provide insight into the interrelationship between the entrepreneur and the senior managers. The first assumption is that changes in one variable caused change in another variable, the second is that all components of an organization are interrelated, and the third is the relevance of communication of information with interlinked variables. The evidence shows that individuals interacted with mutual benefit as new information between entrepreneurs and senior managers affected each other. The new information was then fed into the system. This new evidence contributes to the interactive perspective of opportunity recognition that refers to the mutual development of new and existing ideas through an iterative process (Shepherd 2015) between entrepreneurs and senior managers and not individual development (Shane 2000; Shepherd and DeTienne 2005; Haynie et al. 2009; Mitchell and Shepherd 2010). In addition, an open systems approach highlighted how the interrelationships between growth and performance could be recognized by managers, and the effect of longer communication chains as organizations increased in size. In an open system information is input to the organization, interacts with the environment, and ensures the organization's survival because it is able to convert this information and produce an output (von Bertalanffy 1968). The longer flow of feedback and information in the communication chain in the firms was found to subsequently limit performance in these established entrepreneurial firms. The links in the modified conceptual framework are feedback or causality loops and the interrelationships are dependent on each other. The evidence reflected in earlier chapters shows that the entrepreneur is selective in terms of the temporal aspects of when they feed decisions and opportunities back in to the system and interact with senior managers. Contrary to some research, the entrepreneur does not always shape, refine or change thinking when senior managers disagree (Autio et al. 2013; Shepherd 2015).

Open systems thinking reflects how input generated by environment factors are converted into new products and services in the throughput phase in the firms.

SM 7

> *The entrepreneur looks at longer-term value, but I don't think that his view has filtered down to the organization.*

In this example, the entrepreneur's way of thinking about the business was not experienced by the senior managers as they still had a short term view of the business which reflected their roles and responsibilities. In addition, the senior managers in Firm C perceived that the entrepreneur was no longer involved in opportunity recognition. These differences in thinking caused problems in the organizations feedback system. An example in Firm C, which positively reinforced the entrepreneur-senior manager relationship, was their shared view that the organization had to change.

SM 7

> *I believe the organization has to change and the entrepreneur has the same view.*

These shared views were fed back into the system through a feedback mechanism with senior managers. This exemplified how organizational learning is a key component of an open system and illustrates how new information may be used to create increased growth. In this way, the modified conceptual framework reflected the evidence that feedback processes between the entrepreneurs and the senior managers affected the system and resulted in a change in performance when alignment is reached and cognitive distance and dissonance reduced.

The conceptual framework modifications in Fig. 10.1 are discussed using the open system characteristics of causality, interdependence, and synergy to demonstrate the implicit causal interrelationship between the temporal dimension of entrepreneurial cognition, bias, and senior manager perception. These interrelated parts are core to systems thinking (Flood 2010) in this work and their various influences on each other. In this way every aspect is not independent but part of the whole (Ackoff and Addison 2010). The feedback loops in the conceptual framework illustrate the interaction effect between entrepreneurial cognition and senior managers' perception. The link between the entrepreneurial cognition and bias to performance and the interdependency between organizational factors are represented in the modified conceptual framework. These do not act as independent constructs. The modifications include the performance and organizational factors dimensions in order to represent the findings. In the performance dimension, profitability and market share have been replaced with recruitment, technology, and long-term value because entrepreneurs and senior managers regarded it

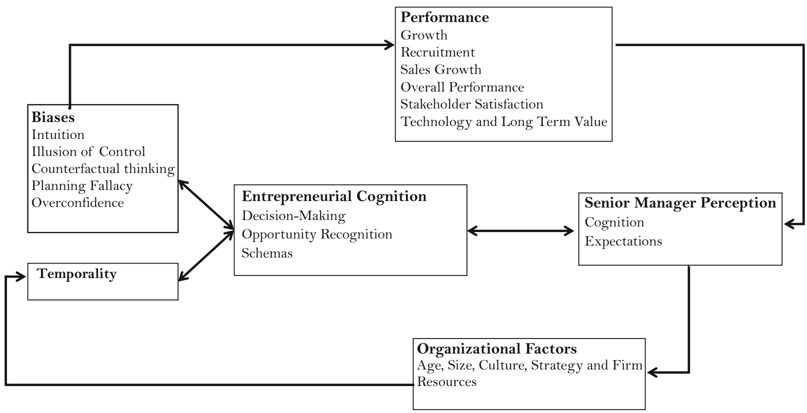

Fig. 10.1 Modified conceptual framework

as strategically relevant to the growth of their firms. In the organizational factors dimension age has been added because of the notable impact on the interrelationship between the entrepreneur and senior managers.

The entrepreneurial orientation concept was extended to include bias, temporality, and entrepreneurial cognition. The original performance concept (Lumpkin and Dess 1996) included sales growth, market share, profitability, overall performance, and stakeholder satisfaction. This empirical research for established entrepreneurial organizations extended the performance concept to include technological advancement and long-term value because they were regarded as important in each firm. Industry-specific definitions of growth and performance, such as increased manufacturing (Firm A and C) and the acquisition of intangible assets and spin-outs (Firm C) have not been included because of the specificity to one firm.

Organizational factors have been extended to include the age of the organization, but top management team characteristics were not considered in this research and therefore do not appear in the conceptualization. However, top management cognition and expectancy was found to affect the interaction, and the conceptual framework has been modified to include this aspect. Age is characteristic of the lifecycle models and the evidence in this research demonstrated that age made a difference in the entrepreneurial cognitive approach to growth and performance. For example, the entrepreneur in Firm B had an aggressive sales approach, compared to the entrepreneurs in Firms A and C, indicative of the differences in age and size. Organizational age and size were variables mentioned in 74 of 104 stage models investigated by Levie and Lichtenstein (2010). The evidence also showed that the dynamic tension and entrepreneurial passion to enact an opportunity to pursue growth is higher for the entrepreneur in Firm B than entrepreneurs in Firms A and C, extending the Levie and Licthtenstein's model to established entrepreneurial organizations. It is also evident that the social structure (the organization) has an influence on the entrepreneur, which will affect the way in which the organization grows. These two processes are not mutually exclusive, but do however reflect an on-going interplay.

The complexities of these interrelated parts were interpreted by using organizational learning and an open systems thinking approach to illustrate the alignment and contradictions between entrepreneurial cognition and senior manager perception. The theoretical framework presented in this chapter of the inter-relationship between the entrepreneur's thinking and bias, senior manager's perception, temporality, organizational factors, and growth and performance informs empirical evidence in this area.

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11

The Complex and Elusive Nature of Entrepreneurial Leadership

11.1 Introduction

An unintentional outcome of this work was the finding on entrepreneurial leadership in which the entrepreneur remains engaged with the responsibility for strategic decision making and opportunity recognition within the firms. Entrepreneurial leadership theory is underscored by a focus on influencing, directing (Ireland et al. 2003; Renko et al. 2015), passion and vision, (Gupta et al. 2004; Thornberry 2006) innovation and uncertainty (Surie and Ashley 2008). The empirical evidence in this work emphasises the significance of context and followers. While there is still little consensus on the more general entrepreneurial leadership constructs, there is considerable support for existing leader-follower theories in the empirical evidence in this study, specifically the lifespan of the entrepreneurial leader at different points. In this way, this work contributes to the argument that entrepreneurial leadership must be context specific and take into account the dynamic between the entrepreneur and senior managers in an attempt to understand and make progress beyond individual level leaderships theories (Zaccaro and Klimoski 2001; Lord et al. 2001; Alvolio 2007). It is very evident in the empirical evidence

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that the outcomes of the interrelationship between the entrepreneur and senior managers is shaped by the inter-dependent nature of the leader, follower and the relevant context.

Transformational leadership (Lowe et al. 1996) and entrepreneurial leadership in Firm A and C were described by some senior managers as charismatic while the experience of others was different, supporting Graen and Uhl-Bien's (1995) leader-member exchange theory (LMX) and reflected the complexity in their interrelationship. Interestingly, transformation leadership and consideration of employee needs is not consistent with the evidence in this study. However, the evidence shows that entrepreneurial leaders experience the dichotomy between autonomous decision making and the need to share information. Different senior managers' opinions and experiences of entrepreneurial leadership provides empirical evidence on the contingent nature of 'followship' in the cognition-attribution-success cycle, and the degree to which firm growth can be attributed to the interaction between entrepreneurial leaders and followers. Additional relevant research is that entrepreneurial leadership directly involves a contribution to opportunity recognition and exploitation (Shane and Venkataraman 2000; Renko et al. 2015) and is context specific, although some senior managers are skeptical as to whether entrepreneurs are still making this contribution to firm growth.

11.2 Interplay Between Entrepreneurial Cognition with Senior Manager Perception and Expectation

The evidence showed that the entrepreneur's decision making and OpR in the conceptual framework affected the interaction between the entrepreneur and senior managers' perception. Senior managers were not passive, but at different stages of the firm's growth perceived the entrepreneur to be worth following based on consecutive successful decision making and opportunities. The perception of similarity is consistent with earlier studies in which similarities reinforce the SMX relationship (Murphy and Ensher 1999).

This leader-exchange theory (Graen and Uhl-Bien 1995), still largely ignored in entrepreneurship literature affected the quality of the relationship between the entrepreneur and senior managers.

Based on the assumption that entrepreneurial OpR consisted of a synthesis of stages (Shane 2003; Lumpkin and Lichtenstein 2005), the entrepreneur's OpR process only included senior managers in the information-gathering phase and once they had formulated their ideas and not before. This lack of leader-senior manager exchange limited the quality of the communication and in some cases the performance of strategic issues. This outcome did not appear to be a problem if the senior manager had high levels of self-efficacy and was therefore more in line with the entrepreneur. The empirical evidence in Chaps. 6, 7, 8, and 9 demonstrate the lack of entrepreneur-senior manager cognitive understanding and collectivity when deciding on how and when resources are configured. Characteristic of open systems thinking, change is represented by the interplay of entrepreneurial cognition and senior manager perception, although the evidence illustrated that it is not always at the point when senior managers might expect it. These unmet expectations result in dysergy in this dynamic interrelationship.

The open system model of causality can be traced through a sequence of actions in line with an entrepreneurial process perspective. At each step the entrepreneur drew on experience, pre-existing mental models, and knowledge and information from the senior managers. The processes were interrelated, but in some of the evidence the thinking process of the entrepreneur was only partially communicated to senior managers which empowered the entrepreneur thus acting as a moderator on their interrelationship.

Because relationships between the entrepreneur and senior managers were non-linear (von Bertalanffy 1968), a small change in entrepreneurial decision making had a large effect on the senior manager. In other examples, a large change in entrepreneurial decision making had a nominal effect on senior managers.

These findings illustrate the contrast between senior managers who preferred less uncertainty in favor of planned strategies and entrepreneurs who sought opportunities and made decisions in a non-linear way. These differences are viewed as an emergent strategy and entrepreneurial mode rather than planning mode (Mintzberg and Waters 1985). The evidence demonstrated the causal effect that these differences had on the interrelationships between entrepreneur and senior managers. However, the way in which entrepreneurs and senior managers interpreted their relationship, individual roles, emotions, and behaviors was largely unknown by them. In addition, they didn't understand their respective actions and reactions, and each, filtered, recognized, processed, and interpreted information through their own cognitive lens, highlighting cognitive differences.

Emergent strategy in which patterns are unintentionally realized caused frustration with senior managers who wanted planned progression.

The evidence in the firms supported Mintzberg and Water's (1985) argument that growth in entrepreneurial business occurred as a pattern of sprints and pauses. This was incongruent with senior managers' expectations of more consistent fast growth. Entrepreneurs saw this way of thinking as overextending their resources and finances, and reinforced the senior manager view that the entrepreneurs were risk-averse.

The evidence in Firms A and C revealed that interactions between the entrepreneur and senior managers influenced and possibly changed the assumptions each had derived about the other's cognition. The findings thus supported research that entrepreneurial organizations are not "strategically managed by consensus" but by autocratic entrepreneurial decision making processes (Covin et al. 2006). Autocratic entrepreneurial decision making caused cognitive dissonance. This is an example of the "Pygmalion Effect" (Senge 1990; Rosenthal and Jacobson 1992) in which the entrepreneur rewarded the senior managers who thought like him but did not realize that his expectations influenced senior managers who were eager to please. Entrepreneurs treated the senior managers who were more able to think like them differently to the other senior managers in a self-fulfilling prophesy (Eden 1992) believing the others would not understand their thinking processes.

Equity Theory (Adams 1965) provided further insight into the cognitive dissonance of those senior managers who perceived their interrelationship to be inequitable and expected that their contributions would be rewarded. The evidence illustrated that cognitive dissonance resulted when the expectations of senior managers were unmet. The practical components of psychological contracts (Schein 1987) were traditionally used to explain mutuality of expectations in the relationship between employees and management in organizations. The firms provided evidence for both the mutuality of expectations and the consequences of unmet expectations in interrelationships. In terms of the exchange of technical information and decision making, tasks, and roles, the firms demonstrated a level of mutuality between the entrepreneur and senior managers. Specifically, mutuality that led to a decision was achieved by the horizontal flow of technical information (Handy 1993) between the entrepreneur and senior managers. However, when decision making was directly related to growth and OpR, a lack of mutuality was evidenced. This was explained earlier through different cognitive processes of effectual versus causal reasoning (Sarasvathy 2001), and Likert's (1968) four systems of thinking that are discussed later. From an entrepreneurial leadership perspective, the ability of the entrepreneur to influence and persuade the senior managers that an opportunity was worth pursuing (Pinchot 1994) was more challenging than during the early stages of growth.

The notion of unwritten psychological expectations was apparent. This was evidenced through entrepreneurs expecting senior managers to perform their roles and responsibilities and senior managers expecting that their working environment would enable them to perform their jobs. The evidence illustrated that senior managers expected entrepreneurs to communicate their thoughts about decisions and opportunities, and to transfer relevant information and expertise in order for them to perform their roles. Unmet expectations resulted when this did not happen. The entrepreneurs in all firms still controlled the flow of information which created an environment that the senior managers perceived made their jobs more challenging to undertake. By not explaining the risk calculation in their decision making or opportunity exploration for example, the entrepreneurs do not create an organizational climate that is positively orientated towards senior managers taking the lead, but contributes to the perception that they are risk-averse. In this way followers are less likely to engage in leadership thinking or behaviors.

The other aspect of the psychological contract relevant to the interrelationship between the entrepreneur and senior managers is 'charisma' (Schein 1987). Charisma means that senior managers followed the entrepreneur because the entrepreneur reflected a mystery of success, notwithstanding the evidence that some senior managers appreciated entrepreneurial leadership more when they themselves exhibited a high need for achievement (McClelland 1961). Similarly, some researchers have found a correlation between positive attitudes of managers and charismatic leaders (De Hoogh et al. 2004). The evidence in the firms reflected this mystery in that senior managers felt that "people followed him anyway". Entrepreneurial charisma caused a problem with issue domain 'Succession' because as Schein (1987) argued, charisma is not a basis for succession and is only stable for as long as the perceived charismatic leader is the decision maker. The impact of this assumed entrepreneurial charisma made it harder for senior managers to show charisma as they did not start or own the firm (De Hoogh et al. 2004). In addition, the context within which these firms operated was more stable and secure than in the early stages of the business which might reflect the change in perceptions of charisma.

At this point, it is timely to introduce additional classic organizational theorists who have contributed to our present day understanding of decision making and organizational behavior and to match the empirical evidence with the most relevant theories for established entrepreneurial firms.

Simon (1959, 1979) argued that decisions are central to effective organizations and that electronic communication and information processing changed decision making and the empirical evidence here emphasises the cognitive elements of entrepreneurial leadership (Gardner et al. 2005; Avolio et al. 2005).

Rostow (1960); McGregor (1960); Likert (1967); Schein (1987) and Argyris (1992), each argued for clarity and explicitness of interrelatedness for employee roles and responsibility, decision making and organizational effectiveness. These arguments are aligned with entrepreneurial leadership LMX theory that links the quality of interrelationships to the transparency in leader-followers decision making.

While another organizational theorist, Handy (1993), suggested that aspects of power through information control offered additional insight into the acceptance of entrepreneurial decision making by senior managers.

Rostow (1960) claimed that organizations needed to translate from psychological orientation to working organizations with procedures in order to be successful. However, a psychological factor contributing to how this change took place could be self-efficacy, the belief in one's own ability to control and complete a task, which has been shown to be higher in entrepreneurs than non-entrepreneurs. The contemporary view supported in the empirical evidence is that entrepreneurs have a bias of control (Kuratko and Hodgetts 2007), and perceived that they have the ability to control the outcome, and that following procedures was limiting. Conversely senior managers believed they did not have the same ability to control the task and complete the task successfully in the way the entrepreneur did.

Schein's (1987) degrees of participation helped to explain the cognitive dissonance in entrepreneurial and senior manager interactions. In participative decision making, entrepreneurs still treated senior manager motivation and commitment with suspicion even when senior managers had more information and knowledge to perform their role than the entrepreneur. Likert (1967) and McGregor's Theory Y (1960) supports Schein's argument that allowing employees latitude in their roles and routines is potentially more beneficial to the organization. Handy (1993) supported this argument adding that role strain, overload, and misperception, which were all evidenced in this research, contribute to unmet expectations and are therefore dysfunctional features of an organization.

The evidence suggested that an entrepreneur's lack of confidence in the senior managers resisted a participative approach because of cognitive differences. The evidence contributed new insight to classic organizational theory, by demonstrating that the lack of cognitive understanding and communication in their interrelationship limited the entrepreneur's transition from autocratic to participative (Schein 1987) decision making. This was reinforced by a lack of understanding by senior managers of what the vision was, which would 'absorb' or reduce certain elements of uncertainty in Firms A and C and which can reduce the effectiveness of entrepreneurial leadership (Gupta et al. 2004)

McGregor's (1960) theory Y assumes that employees prefer autonomy in decision making and have the information to fulfil their role requirements. The evidence demonstrated that the cognitive dissonance between the entrepreneur and senior managers was caused by limited information flow that Simon (1959, 1979) suggested was only ascertainable at the point of decision making. The entrepreneur's view was thus more characteristic of theory X that had negative implications for a successful psychological contract and mutually met expectations, with a subsequent negative impact on leader-follow relationships.

It is also worth recalling Likert's (1967) argument that a lack of accurate information is often the cause of systems thinking failure and Handy's (1993) argument that vertical and horizontal information flow represents important features of synergy. In this way, Likert and Handy's arguments could be used to explain the negative impact on the psychological contract caused by the lack of information flow.

Likert (1967) captured the continuum of autocratic and participative theory in Systems 1, 2, 3, and 4 analysese represented in Table 11.1. These four systems can be used to understand the causal effect of the interrelationship between the entrepreneur and the senior managers. theory Y assumption is that organizations operating in Systems 3 and 4 will have a power base of decision making that is much broader and includes the senior managers. The idea of the entrepreneur relinquishing control in order for senior managers' thinking to be harnessed to organizational goals and not entrepreneurial thinking is not yet visible in the firms. The unexpected finding and argument here is that these firms have successfully grown to date with limited and varying degrees of strategically shared decision making across levels of senior management and in this way have defyed definitions of entrepreneurial leadership through the sharing and collective execution of decisions and opportunities. In addition, the integrative approach to leadership in which the entrepreneur is leader and creates a dynamic organizational climate due to cognitive transparency is not supported.

If this shift occurred, the psychological contract between the entrepreneur and senior manager would shift to the entrepreneur providing information and a context for the senior managers, which would reinforce their interrelationship in positive ways. The senior managers' expectations would then be met through consensus with the entrepreneur. The analysis using theory Y assumptions meant that the misfit in their interaction was caused by senior managers' lowered expectations because

Table 11.1 Four systems of analysis

Organizational variable	System 1	System 2	System 3	System 4
	Authoritive		Participative	
	Exploitive authoritive	Benevolent authoritive	Consultative	Participative group
	System 1 and 2 reflects entrepreneurial decision making in all the firms		System 3 and 4 reflects perceived entrepreneurial decision making in all the firms	
1. Leadership processes used				
Extent to which superiors have confidence and trust in senior managers	Have no confidence and trust in senior managers	Have condescending confidence and trust	Substantial but not complete confidence and trust	Complete confidence and trust in all matters
Extent to which entrepreneurs behave so that senior managers feel free to discuss important things about their jobs	Senior managers do not feel free at all to discuss things about their job	Senior managers do not feel very free to discuss things about their job	Senior managers feel rather free to discuss things about their job	Senior managers feel completely free to discuss things about their job
2. Character of communication process				
Amount of interaction and communication aimed at achieving organization's objectives	Fair amount of explicit knowledge, but very little tacit knowledge	Fair amount of explicit knowledge, but little tacit knowledge	Fair amount of explicit knowledge, but very little tacit knowledge	Much with both individuals and groups
Extent to which downward communications are accepted by senior managers	Viewed with great suspicion	May or may not be viewed with suspicion	Often accepted but at times viewed with suspicion; may or may not be openly questioned	Generally accepted, but if not, openly questioned

(*continued*)

Psychological closeness (how aware is entrepreneur of cognitive dissonance faced by senior managers)	Has no knowledge or understanding of problems	Has some knowledge and understanding	Knows and understands problems	Knows and understands problems
3. Character of decision making processes				
At what level are they made	Bulk of decisions made by the entrepreneur (at the top)	Policy at top, many decisions within prescribed frameworks made at lower levels	Broad policy and general decisions at top, more specific decisions at lower levels	Decision making widely done throughout organization, well integrated through linking process
To what extent are entrepreneurs aware of problems	Often are unaware or only partially aware	Aware of some, unaware of others	Moderately aware	Generally quite well aware

they could not challenge the entrepreneur and had less perceived role autonomy. This pattern of interaction is no different to Gardner's (1990) argument that leaders are an integral part of a system and have to be thought of in this context.

Table 11.1 shows Likert's (1967) view of how entrepreneurs in system 1–4 can be either authoritative or participative when interacting with the organizational variables of leadership, communication, and decision making.

The evidence on the imprinting of entrepreneurial cognition in the firms as presented in Table 11.1 supported Likert's (1967) argument that top management System 1 style of leadership resulted in System 1 organizational characteristics. The entrepreneur's cognitive process reflected Likert's continuum of System 1 and 2, but was perceived by them as System 3 and 4. Senior managers' perception and descriptions of entrepreneurial decision making authority reflected more of System 1 and 2. Senior managers therefore behaved in a way that reflected what they perceived to be correct. The entrepreneur's pursuit of self-interest Smith (1776) which is the opposite of leadership arguments characteristic of influencing, is why this entrepreneurial leadership is defined as "elusive" in this chapter. Leadership in this work was explored in the context of the interplay between entrepreneurial cognition and senior managers' perception regarding the growth and performance of the firm. Entrepreneurial leadership and the influence of its process and outcomes must be studied in context (Antonakis et al. 2004).

This chapter evidences the still-lacking conceptual framework or definition of entrepreneurial leadership in academic literature. This chapter contributes empirical evidence to entrepreneurial leadership literature by focusing on the impact that entrepreneurial cognition has on their interrelationship with senior managers when making strategic decisions, recognizing, and exploiting opportunities from a process perspective. In this context, in order to understand entrepreneurial leadership, organizational level theories proved to have more utility and relevance, highlighting the theoretical gap in entrepreneurial leadership research.

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12

Conclusion

12.1 Introduction

In this chapter, conclusions are drawn from the empirical evidence, highlighting their contribution to knowledge on the entrepreneurial process from both the psychological and organizational perspectives. In addition, the research questions are answered and future research opportunities are identified. The chapter also introduces research propositions for others to test as hypotheses in their respective contexts. The significant feature of this research applies to the new ways in which disparate concepts were used to investigate the interrelationship between entrepreneurial cognition and senior managers' perception in established entrepreneurial organizations. In this way, the new combination of the concepts that were identified in the conceptual framework provides original insight into how these interrelationships work. The chapter draws on these original insights and the conclusions present factual and conceptual conclusions that highlight the existing configuration in the firms underlined by the dominant cognition of the entrepreneur.

My evidence from investigating the interrelationship between entrepreneurial cognition and senior manager perception makes a contribution to knowledge that bridges entrepreneurial cognition and organizational

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literature. This contribution to knowledge is based on "combining disparate concepts in new ways to investigate a conventional issue" (Trafford and Leshman 2008: 141) from a cognitive perspective. The scope and dimensions of the analysis of the linkages between the concepts of entrepreneurial cognition, bias, temporality, senior managers' perception, organizational factors, and performance provide original empirical evidence. The factual conclusions derived from the evidence that I discovered and analyzed, answer my four research questions. A summary of the original contributions to knowledge is presented in Table 12.1.

The conceptual conclusions in Sect. 12.4 supplement the factual conclusions reflecting the contribution to knowledge by linking the significance of my findings back to the modified conceptual framework.

In Table 12.1 I have consolidated the relationship between the research questions, the factual conclusions drawn from the evidence and the contributions to knowledge.

12.2 Answers to the Research Questions

This section provides answers to the four research questions showing how the original combination of the concepts provides insight to each interrelationship contributing entrepreneurial process knowledge on interrelationships in established organizations (Shepherd 2015).

How and Why Does Entrepreneurial Cognition Affect the Interaction with Senior Manager's Perception in the Organization?

The evidence in this work shows that entrepreneurial cognition significantly affects the interaction with senior managers' perception in the organization. This research provides two reasons as explanations to the first research question. The first reason is the entrepreneurs' complex cognitive processes that are due to tacit knowledge, experience, and the cognition-success-attribution cycle. The second reason is the impact of the senior manager's perception, expectation, and lack of experience of this

Table 12.1 Factual conclusions linked to contribution to knowledge

Research questions	Factual conclusions drawn from evidence	Contribution to knowledge
Q1.How and why does entrepreneurial cognition affect the interaction with senior managers perception in the organization?	Changing entrepreneurial cognition moderates the interrelationship	Advances knowledge that entrepreneur's switching decision making styles moderates the development of shared cognition
	Perceivers Expectancy theory explains senior manager perception	Advances understanding of the moderating effect of cognitive differences on interrelationships, growth and performance
	Entrepreneurs do not adapt cognitive processes to enable shared cognition	Advances knowledge that shared cognition is achieved through senior manager's alignment and not through consensus Advances knowledge that entrepreneurial leadership in LMX is affected by similarities and differences in cognition affecting their interrelationship
	A lack of open and honest communication reinforces the cognition-attribution-success cycle	Extends configuration theory to entrepreneurial organizations highlighting the decline in performance. Advances knowledge that success reduces learning in established entrepreneurial organizations

(*Continued*)

Table 12.1 (continued)

Research questions	Factual conclusions drawn from evidence	Contribution to knowledge
Q2.What are the temporal factors regarding the interaction between entrepreneurial cognition and senior managers?	Entrepreneurs engage senior managers late in information gathering and decision making processes	Explicitly addresses temporal factors in entrepreneurial cognition and interplay with senior managers' perception
	Short, medium, and long-term nature of decisions mean that entrepreneurs switch between different cognitive processes	Advances knowledge on the temporal nature of entrepreneurial cognition on growth and performance
	Entrepreneur switch speedily between heuristic and analytical cognition compared to the senior manager resulting in negative emotions	Confirms individual differences in cognition and adds to research on the reciprocal relationship of emotions in cognition
Q3.How do biases affect the interaction between the entrepreneur and senior managers?	There is limited comprehension and awareness that biases cause conflict	Advances knowledge that different levels of bias affect interrelationships, growth and performance
	Lack of sensemaking and sensegiving has a negative and implicit causal effect	Advances knowledge demonstrating that entrepreneurial sensemaking and sensegiving is not used in uncertain and ambiguous interactions with senior managers
	Entrepreneurial biases have a negative reciprocal effect on senior manager perception	Reinforces entrepreneurial cognition literature across levels and suggests link between entrepreneurial cognition, bias and senior managers' perception

(*continued*)

Table 12.1 (continued)

Research questions	Factual conclusions drawn from evidence	Contribution to knowledge
Q4.How does this interaction occur within the context of organizational growth?	Entrepreneurial cognition demonstrated that senior manager input and feedback is necessary to drive growth and performance is inconsistent	Advances knowledge on open systems thinking by linking entrepreneurial cognition to growth. Confirms input, conversion, output, and feedback loop are positive for growth and performance in established entrepreneurial organizations
	Different expectations led to a different allocation of resources to achieve growth and performance outcomes	Advances knowledge on established entrepreneurial organizations confirming differences in experience and expectations. Advances understanding of different definitions of growth and performance on interaction
		Contributes to knowledge that entrepreneurial team collective cognition impedes or facilitates performance
	Similar backgrounds mediate the interaction effect	Advances knowledge that senior managers align their growth ambitions to entrepreneurs in a cognition-success-attribution cycle
	Open and honest participation in the integration of new knowledge builds growth and performance appropriate for the lifecycle of the organization	Confirms the relevance of age to organizational life-stages. Advances knowledge that age affects the interplay between entrepreneurial cognition and senior managers' perception because of experience and pre-existing schemas
	Prevalent authoritative systems mediate growth and performance	Advances knowledge that the psychological contract is relevant in established entrepreneurial organizations

interrelationship. Entrepreneurial complex cognitive processes are reflected in how the entrepreneurs in my research switched between heuristic and analytical decision making (Vermeulen and Curseu 2008); causal and effectual reasoning (Sarasvathy 2001); and planning and entrepreneurial modes (Mintzberg 1978). The duality of these cognitive processes sometimes confused senior managers and resulted in complexity in shared cognition. This confusion led to senior managers' perception that entrepreneurs did not take risks and that they made autonomous decisions by ignoring disconfirming evidence. The first paradox is that of the entrepreneurial cognitive duality approach in decision making which has an impact on the interrelationship with the senior managers and subsequent demands on the developing organization by "keeping people on their toes" and putting people under pressure to deliver according to quicker time frames.

SM 1

> *I think with him (the entrepreneur) he has his decision and that will be the way it is done. He has already made his decision or his mind up before he gets all the information. I will tend to listen to more opinions than perhaps he (the entrepreneur) does.*

More specifically, the entrepreneurial cognition-attribution-cycle and the adaptive new senior manager decision making processes form ambiguous and conflicting interrelationships by creating fear, "there was a lot of fear" of the entrepreneur in the organization, but paradoxically they believed that the organization was successful because of his actions and the way people reacted to it. The contribution of this research is that these senior managers' perceptions moderate and mediate their interrelationship, depending on the cognitive levels of the senior manager, levels and amount of interaction with the entrepreneur, the quality of the interrelationship, and the alignment of senior manager to entrepreneurial cognition. In addition, through senior manager feedback based on fear of failure, the interaction reinforces entrepreneurial cognition because it lacks open and honest communication. This evidence is reinforced by the entrepreneurial and internal perception that firm success is attributed to entrepreneurial decision making. My finding of external attribution to success supports Heider's (1958) external and internal attribution theory, which has previously been used in larger systems before this research. This evidence reflected by the entrepreneur-senior manager psychological contract (Schein 1987) which addresses perceptions in terms of mutual expectations and the underlying need to receive information needed to complete tasks. The evidence in Firms A, B, and C contributed valuable insights into the nature of unmet expectations and misperceptions of entrepreneurs and senior managers in the firms. My findings confirm existing entrepreneurial decision making literature that entrepreneurs are more prone than other individuals to use heuristic information processes triggered by higher levels of uncertainty and ambiguity and results in automatic information processing (Vermeulen and Curseu 2008). The second paradox between the entrepreneur as autocratic decision maker (Likert 1967) versus the benefits of shared cognition (Tripsas and Gavetti 2000), are regarded in this research as significant to the ongoing growth and performance of the organization. In addition, my findings extend the understanding of complex cognitive processes extending this area of research suggesting that the cognitive differences, distance, and dissonance has a negative impact on senior manager interrelationship and shared cognition. Failure to share tacit knowledge (Smith 2001) damages the psychological contract between the entrepreneur and senior manager although they are not aware of the position or the damage to their interrelationship. Dane and Pratt (2007) argued that experienced entrepreneurs have pre-existing mental representations which they are unable to access in a way that enriches their relationship with senior managers. My research extends Dane and Pratt's research demonstrating a contribution to knowledge that the differences between mental representations derived from the entrepreneur's experience and the less experienced senior managers causes cognitive dissonance. Additionally, the evidence from my research extends Miller's (1992) configuration theory to established entrepreneurial organizational knowledge by showing how the interaction is affected by temporal factors (Miller and Lloyd-Reason 2013). However, along with decision making literature and classic organizational theories, the interplay theories discussed in Chap. 3 have provided some insight into the interdependent concepts of entrepreneurial cognition and bias with senior managers. In particular, Mintzberg's (1978) argument regarding configuration, represents the reciprocal and non-linear nature of the interrelationship between the entrepreneur and the senior managers. In the same way, the influence of the interrelated parts in open systems (von Bertalanffy 1968) reflects how entrepreneurial processes are mutually reinforcing and the six themes of incongruence and communication; fear and expectations; and success and learning underpinned the evidence. In conclusion, the answer to the first research question is that entrepreneurial cognition affects the interaction because of cognitive duality and complex information processing, and their inability and unwillingness to communicate their thinking processes. In addition, the pressure on their interrelationship arises because the senior managers are trying to reduce cognitive dissonance (Festinger 1985) by either aligning their thoughts with the entrepreneur or remaining quietly disenchanted with their relationship. In summary, the reason their interrelationship is affected is because of imbalances in entrepreneur-senior manager cognitive complexity, entrepreneurs pre-existing mental representations, lack of senior manager experience and knowledge, and other interrelated parts discussed in the research questions below.

What Are the Temporal Factors Regarding the Interaction Between Entrepreneurial Cognition and Senior Managers?

The systems approach of "circles of causality" (Senge 1990: 73) explains the conflict between entrepreneurial cognition and senior managers' perception in that entrepreneurs were unaware of the significance of sharing decision making processes and information with senior managers earlier in the process. The second circle of causality was the entrepreneur's ability to make quick decisions and lack of desire to indulge in consensus seeking.

Firm A, Entrepreneur

> *They need to be moving on and moving upwards in terms of their thinking and what they are doing.*

My evidence shows that there are three temporal dimensions that affect the interaction between entrepreneurial cognition and senior managers in a series of decisions and opportunity recognition behavior and actions. This finding applies in similar ways in each of the firms. The evidence shows bifurcation and diverging patterns in entrepreneurial cognition and senior managers' perception during these growing firms (Waller et al. 2005). Senior managers appear less capable than entrepreneurs of navigating entrepreneurial aspects because they have less knowledge and access to information in a given time period and are not as cognitively flexible (Haynie et al. 2010): Entrepreneurs act quickly in case the window of opportunity closes.

The first dimension is the length of time that entrepreneurs take to involve senior managers in their information gathering and decision-making processes and reflects Bluedorn's (1987) theory on the entrepreneur's perception of time. My research contributes to knowledge by demonstrating that engaging senior managers late in the decision making or information gathering process has a moderating effect on their interaction because in some cases the senior manager is aware that the entrepreneur has not included him in the process although they might be part of the information gathering process. Although the senior manager acknowledges that the entrepreneur does not like to be challenged, he fails to see this as part of the reason for not involving him sooner.

The second is that short, medium, and long-term decision making means that entrepreneurs switch between different cognitive processes when making decisions depending on its strategic or operational context. My evidence supports existing literature by Bird (1988), Busenitz and Barney (1997) that there is a contrast between entrepreneurial quick decision making and incomplete information versus the managers' perception that they have access to specific and more comprehensive market information. My research contributes to decision making knowledge by demonstrating that these differences result in emotions such as entrepreneurial frustration and senior manager misperception. However, these frustrations were mitigated by spending more time with the entrepreneur and the entrepreneur sharing his decision-making processes and in the case of Firm A, both the entrepreneur and MD experienced the same biases in their decision making regarding the new manufacturing suite.

The third temporal factor affecting the interaction is the speed with which the entrepreneur switches between heuristic and analytical thinking compared to the senior manager. My research shows that the entrepreneurs use mental shortcuts while the senior managers spend more time gathering facts and information which has a negative emotional impact on their interrelationship, although this is perceived differently by the senior managers. In this way the size and age of the firm made a difference to the timing on shared decision-making processes in the same way that senior manager lack of information and experience did.

In answering the second research question these three temporal factors of the timing surrounding inclusive entrepreneurial decision making, short, medium, and long-term decision making and the speed with which entrepreneurs switched, offer original insight into entrepreneurial and senior manager interrelationship.

How do Biases Affect the Interaction Between the Entrepreneur and Senior Managers?

Due to entrepreneurial cognitive duality, decision making and opportunity recognition was seen by differently by senior managers depending on the context and interaction with the entrepreneur. In some cases, the entrepreneur used System 1 (intuition) and in others System 2 (analytical) and depending on which system the entrepreneur was using and the context, several biases were in play.

The evidence demonstrates that cognitive biases such as planning fallacy, counterfactual thinking and representativeness biases affect the interplay between entrepreneurial decision making and senior managers. My evidence supports Tversky and Kahneman (1973, 1979) arguments on bias that entrepreneurs' decision making are influenced by over-confidence and intuition bias. The influence of these biases are perceived as a lack of information by senior managers with a moderating effect on their interaction. The entrepreneurs' use of intuition bias causes the senior managers to question their decision-making process because it is in conflict with their use of analytical thinking which is not as affected by bias.

My evidence shows that when entrepreneurs deployed over-confidence in their decision making it reinforced the cognition-success-attribution cycle with senior managers and had a positive effect on their interaction when growth and performance is positive. Conversely, when the planning fallacy bias is exercised, and entrepreneurs expect senior managers to be quicker at decision making, their interrelationship is tense. In addition, when entrepreneurs' decision making is biased with counterfactual thinking they are only looking forward in decision making, ignoring past mistakes, which results in cognitive dissonance with senior managers who consider past failures when making decisions or exploiting new opportunities for growth.

The entrepreneurs' lack of cognitive adjustment due to the illusion of control bias theory (Langer 1983) and the search for confirmation of their hypothesis, moderates their interaction with senior managers. The evidence shows that the effect of these entrepreneurial biases on senior managers is that they become lacking in confidence and scared to make incorrect decisions, or decisions with which the entrepreneur would not agree. Additionally, the effect of these biases results in senior manager confusion about their role and responsibilities with negative consequences on the psychological contract. This reciprocal interaction results in a lack of honest and open upward communication.

Therefore, in answering research question three, biases affect the interaction between the entrepreneur and senior managers by influencing entrepreneurial decision making and reinforcing senior managers' misperception of entrepreneurial dual cognitive processes.

How Does Entrepreneur-Senior Manager Interaction Occur Within the Context of Organizational Growth and Performance?

Growth was defined by Firms A, B, and C and relevant to their organizations evolution and development. These definitions are specific to these firms (Table 12.2), and the interplay of these factors is unique to this work.

Interaction between entrepreneurial cognition and senior managers' perception occurs within the context of the above specific organizational growth and performance indicators. The evidence in my research demonstrates that the entrepreneur-senior manager interaction is dependent on individual perceptions of how the organization is growing and performing

Table 12.2 Firms A, B, C, and strategic issues domains

Name of firm	Strategic issues
Firm A	Manufacturing
	Succession
	Recruitment
Firm B	Sales and marketing
	Recruitment
	Technology
Firm C	Recruitment
	Business development
	Strategy and vision

which also vary between the senior managers. In addition, these different perceptions of growth support and contribute to the research that entrepreneurs define and operationalize growth differently to academic researchers (Achtenhagen et al. 2010). While the entrepreneur was perceived to making decisions that lead to successful outcomes, senior managers admitted that they would support them. However, as the evidence showed that under challenging contexts, in which the company was struggling financially, the senior managers questioned his ability to make decisions and subsequently the entrepreneur changed his behavior towards the senior managers. In this way, success or failure led to conflict in entrepreneur-senior manager interactions without them understanding why and how it happened. In addition, the different ways in which they attributed the cause of the success and failure lead to confusion in the interrelationship.

In summary, when an entrepreneurial decision led to a positive increase in growth and performance it reinforced a positive interaction, but conversely, when the entrepreneur makes a decision that leads to financial and operational losses, their interaction becomes top-down and non-transparent. In both instances the cognition-success-attribution cycle and Miller's (1992) System 1 and 2 thinking is reinforced.

12.3 Conceptual Conclusions

It is now possible to link the relevance of my findings back to the modified conceptual framework that was presented earlier. The conceptual conclusion is that the interrelationship between the concepts of bias, temporality, growth and performance, and organizational factors exhibit reciprocity between entrepreneurial cognition and the perceptions of senior managers. The feedback from the senior managers to entrepreneurial decision making resulted in a cognition-success-attribution cycle reinforcing the Icarus Paradox. This shows that as entrepreneurial confidence bias increases, senior managers' perception and expectations become more aligned with entrepreneurial cognition. Cognitive distance and dissonance is therefore reduced and the integration of senior manager new knowledge and information is limited in that he is less likely to challenge the entrepreneur.

Theories which highlight cognitive differences between entrepreneurs and managers (Markman and Baron 2003; Curseu and Vermeulen 2008; Vaghely and Julien 2010) and biases (Tversky and Kahneman 1973, 2008; Casson 2010) do not on their own explain how entrepreneurs and senior managers interact within the context of established entrepreneurial firms. As a school of thought, they underscore the differences which this research confirms, and form a research basis to explore how it affects the communication and information flow between them. Building on cognitive psychology, interplay theories which look at the dynamic interaction of interrelated parts of an organization (von Bertalanffy 1968; Senge 1990); organizations as conversation systems (Covin and Slevin 1991) and person and entrepreneurship fit (Markman and Baron 2003) underpin this research. In addition, growth stage and dynamic theories (Greiner 1972; Adizes 1979; Churchill and Lewis 1983; Levie and Lichtenstein 2010; Wright and Stigliani 2013); entrepreneurial mindset and culture (Shepherd et al. 2010); configuration theory (Miller 1983; Witmeur and Fayolle 2011) underscore the combining of different concepts or constructs.

The application of open system theory (von Bertalanffy 1968; Senge 1990) to explain the interplay between entrepreneurial cognition and senior managers' perception as a system, helped to formulate conceptual explanations for the dominance of entrepreneurial cognition. This approach clarifies the reinforcing interrelationships. The conceptual framework is used as a basis for the conceptual conclusion that the interdependent nature of each concept has an implicit and explicit causal impact. This means that a change in each concept affects the interaction between the entrepreneur and the senior manager, and in turn affects both the input and the output of the organization.

Specifically, the conceptual conclusions reflect that by linking the individual concepts of bias and temporality to entrepreneurial cognition, the implicit causal impact on senior managers' perception is evidenced. In turn, the impact of senior managers' perception is fed back and reinforces entrepreneurial thinking. Additionally, the conceptual framework illustrates how the reciprocal causal effect of performance links with organizational factors and the entrepreneur-senior manager interaction. Existing models on interrelated theories are too general and linear to apply to the interplay of entrepreneurial cognition and senior managers' perception in established entrepreneurial organizations. By drawing together disparate concepts, my conceptual framework underpins the empirical data that provides specific insight into these interrelationships. The conceptual framework also justifies the underlying assumptions about individual and organizational norms. In this way the conceptual conclusion that entrepreneurial organizations are in a dynamic state of change, and the pattern of interrelationships are always changing, can be made. Thus my conceptual conclusion is that a change in performance and organizational factors affect the interrelationship between the entrepreneur and senior managers.

12.4 Significance for Established Entrepreneurial Organizations

This section highlights the practical implications for established entrepreneurial organizations, experienced entrepreneurs, and management. The findings of this research underscore the importance of an open systems thinking approach to explaining and understanding organizational growth and performance. The interdependencies of entrepreneurial cognition with senior manager perception, has direct causality between these two variables for organizational factors and performance. The dominance of entrepreneurial cognition and the aligning of senior manager perception to entrepreneurial cognition have reinforced the cognition-success-attribution cycle.

The significance of this alignment for practice involves communication and feedback, the psychological contract and entrepreneurial leadership. The lack of open and honest communication that is both top-down and bottom-up, reinforced cognition-success-attribution that led to organizational decline as shown in my research. The contribution to practice therefore is that when entrepreneurs in established entrepreneurial organizations understand the cause and effect influence of their cognitive processes, they can better manage their interactions with senior managers.

In this way, entrepreneurs can focus not only on their individual thinking but can share and transfer crucial mental models and expectations to the senior managers. Senge (2006) calls this process 'generative learning' which can help entrepreneurs and senior managers learn and shift their awareness towards a systems thinking approach.

12.5 Research Propositions

Since I adopted an inductive approach for my research methodology, it is not possible to make generalizations from my conclusions. Propositions are therefore suggested that others can test as hypotheses in their respective contexts;

1. The interplay between entrepreneurial cognition and senior manager perception is directly affected by cognitive complexity and biases;
2. A temporal dimension to entrepreneurial cognition affects the interplay between entrepreneurial and senior manager perception;
3. The interplay between entrepreneurial cognition and senior manager perception is moderated and mediated by organizational factors;
4. The interplay between interdependent concepts of entrepreneurial cognition, senior manager perception, and growth performance are cyclical and either positive or negatively reinforcing.

Each proposition is linked to my research questions and the combination of these constructs conceptualizes the interplay between entrepreneurial cognition and senior managers' perception. A social constructionist framework and firm study methodology was a suitable perspective to adopt to access and collect my data. The research approach I used was appropriate because of it's ability to provide insights on a number of complex conceptual issues. This enabled me to make a contribution to knowledge. Adopting a deductive research approach would have resulted in the derivation of different conclusions that were not part of my intended research design and methodology. Thus, my research approach was appropriate for the investigation and this allowed me to generate evidence that provided answers to my research questions. By adopting an inductive approach, research propositions were developed which other researchers could use to test the interconnected and interdependent concepts through a deductive approach. It is also worth noting that my working definitions of the entrepreneur and the established entrepreneurial organization were supported throughout my research.

12.6 Implications for Future Research

At the close of my research it is possible for me to propose four research foci that merit investigation. The significance of both items emerged as my research progressed but each was outside the boundaries of this investigation. Thus, they are proposed as secondary outcomes from my research that warrant investigation.

First, this research demonstrates that senior managers perceive and interpret entrepreneurial cognition in different ways to the entrepreneur. Future research could explore how these differences in background, education, and behavior affect not only the interaction, but the other interlinking aspects of performance and organizational factors. This would add value to the issue domains raised in this research such as 'Succession' and 'Recruitment'. It will also add to knowledge of the contribution of senior managers to organizational success and failure in established entrepreneurial organizations in which growth and performance was found in the evidence to be defined differently.

Second, this research made a contribution to explaining and understanding the temporal dimension of decision making and cognition. A perspective for future research is how temporality in cognition affects the configuration of entrepreneurial-led organizations on a larger scale rather than for three firms. In this way established entrepreneurial organizations in which the entrepreneur is still the decision maker for several industries other than pharmaceutical, electrical services, and technology can be studied. The effect on the interrelationships can then be explored further to see how, and if, a different configuration evolves over time from nascent to mature organizations that would increase the generalizability of the findings in a deductive research approach.

Third, a longitudinal approach that follows-up on how these established organizations continue to grow and perform (Davidsson and Wiklund 2001) in spite of cognitive misfit, would benefit the literature on dynamic state theories on organizational growth. This inductive study has shown that the entrepreneur and senior managers define growth differently, and yet these organizations are successful. An investigation into how these organizations self-regulate (von Bertalanffy 1968) could provide this insight.

A longitudinal study that is longer than the 18 months used in my study could examine if the growth trajectory continued or whether the speed and nature of growth and performance could be improved through enhanced communication of entrepreneurial cognition to senior managers. In this way our knowledge of how these entrepreneurial organizations progress through different stages of growth through improved communication and understanding could be examined for a longer period. This would contribute to the research agenda on organizational lifecycles about why and how mature organizations decline into failure.

Fourth, as a by-product of my research, my secondary findings unveiled entrepreneurial leadership thinking, that could form the basis for further exploration in terms of their interrelationship with senior managers. By researching Likert's (1967) System 1 and 2 entrepreneurial leadership in more detail, researchers could add to the knowledge about the influence of personality and behavior on the interrelationship between senior managers, organizational factors, growth, and performance. The context within which entrepreneurs influence and lead could add rich knowledge to this disparate research area. In this way the study could extend our understanding of how individual concepts influence each other in such organizational settings. This in turn could contribute to the entrepreneurial leadership research agenda.

As an applied psychologist who in the past has focused on quantitative scientific research, I found that the knowledge gained from an exploratory qualitative approach has enhanced my learning. I am able to contribute with insight to the conversations with academic peers and entrepreneurs that helps them to understand the interrelationships, and how entrepreneurial decisions are perceived by senior managers. My pedagogic approach is more holistic which means that I engage directly with aspects of research and practice to help students understand how, what, and why interrelationships form in established entrepreneurial organizations. This includes responding to diverse individual learning and thinking styles, and the evolving needs of students and businesses.

From a practical perspective, the research was validated by entrepreneurs and senior managers who were my respondents. Their observations were significant for me because they were professionals in their field who understood the significance of my findings to the ongoing growth and success of their organizations. Feedback from these entrepreneurs suggested that they related to my interpretations and had already started using the findings to improve their interactions with positive results satisfying the aim of this book to change and contribute to practice.

My research has been shown to have impact on the interrelationships that have been confusing for both the entrepreneurs and senior managers. By answering the research questions and reflecting on their answers, the participants had begun to change their thinking and interaction with each other. My research also offered insight into the entrepreneurs' specific concerns about the impact of the different ways of thinking between themselves and the senior managers. As a result of my findings, the feedback from the entrepreneurs is that they have a better understanding of how to conduct succession planning.

The handling of diverse theories and large quantities of data meant a focused, disciplined and tenacious attitude was the only way to reach a meaningful outcome. This meant the difference between superficial and deep learning by embedding myself in a three-year process has significantly increased my intellectual capacity and capability to critically assess new and existing knowledge. The inductive research approach meant that I was consistently testing my assumptions about entrepreneurial and senior manager thinking, perceptions, and expectations. In this way, the process challenged my existing knowledge and contributed to my development of new interpretations as well as consolidated existing knowledge.

Finally, this research provides empirical evidence using cognitive and organizational theory in understanding more clearly the interplay between entrepreneurial cognition and senior managers' perception.

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