

**An Exploration of Strategic Decision Making:
Implications for Strategic Flexibility**

By

Neil G. Shepherd

MSc (by Research)

Aston University

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SUMMARY

Strategic decision making is crucial for organisations because it determines the extent to which new and alternative strategic options are generated, which enables positive organisational change. The extent to which new and alternative options are generated by strategic decision making depends upon individual level variables, such as the cognitive style of senior strategic decision makers. There is a lack of consensus, as well as a lack of empirical evidence, within the extant strategic decision making literature regarding: (i) the effect that individual level variables have upon strategic decision making characteristics and outcomes; (ii) how strategic decision making characteristics affect strategic decision making outcomes.

In this dissertation a contingency framework is adopted, and it is proposed that environmental and organisational contextual antecedent factors directly impact upon strategic decision characteristics, as well as moderating and mediating the relationships between individual level variables, strategic decision making characteristics, and strategic decision making outcomes.

This dissertation presents a systematic literature review, research propositions and a proposed research methodology in order to identify and outline how a significant contribution can be made to strategic decision making theory.

KEYWORDS: Strategic Decision Making; Strategic Decision Making Characteristics and Outcomes; Cognitive Style; Environmental Factors; Organisational Structure.

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1.0 INTRODUCTION

Strategic decision making (SDM) is “crucial because it involves those fundamental decisions which shape the course of the firm.” (Eisenhardt & Zbaracki, 1992, pg. 17). SDM also determines the extent to which new and alternative strategic options are generated, which enables positive organisational change (Coombe & Greenley, 2004). Strategic decision making has been characterised as a process within the strategic management literature and the strategic decision making process has been defined as “a time-consuming process, in which various kinds of activities, taking place at different moments, can be discerned.”

(Noorderhaven 1995, p.18). Furthermore, academic research is warranted within the field of strategic decision making because “a quick examination suggests that the character of the field resembles a ‘crazy quilt’ of perspectives. A more thorough scrutiny reveals a field based on mature paradigms and incomplete assumptions.” (Eisenhardt & Zbaracki, 1992, pg. 17).

The strategic decision making literature contains a significant amount of terminology which has the potential to hinder understanding. Therefore, it is necessary to define some of the terminology which features prominently. Strategic decisions have been defined as “decisions that involve the commitment of substantial resources at the level of the total enterprise. The process of choice, or decision making can be conceptualised as involving three inter-twined activities: (1) Intelligence activity, (2) design activity, and (3) choice activity.” (Wally & Baum, 1994, p. 932). The characterisation of SDM as a process is discussed in detail in section 2.1.1 of this dissertation.

Decision making (as opposed to *strategic* decision making) has been defined as a process which “involves choices concerning the likelihood of uncertain events. Decision making occurs in situations in which we make predictions about the future, select among two or more alternatives, or make estimates about frequency on the basis of scanty evidence.” (Matlin, 1989, p.415). However, strategic decisions differ from any other type of decision because of the following distinguishing characteristics: (i) It affects the organisation as a whole (Eisenhardt & Zbaracki, 1992; Shrivastava & Grant, 1985; Wally & Baum, 1994; Harrison, 1996; Lynch, 2009; Pitts & Lei, 2000); (ii) the decisions are likely to have a long term effect (Bass, 1983, p.16; Harrison, 1996; Lynch, 2009; Pitts & Lei, 2000), and; (iii) the decision entails a significant financial outlay (Eisenhardt & Zbaracki, 1992; Shrivastava & Grant, 1985; Pitts & Lei, 2000).

1.1 Development of Theory

From performing a systematic literature review¹ it was identified that the following domains of literature contain material which is relevant to strategic decision making: strategic management, marketing, organisational behaviour and social-psychology. Whilst the marketing, organisational behaviour, and social-psychology domains of literature do not all specifically address SDM, these domains of literature do address organisational decision making more broadly. It is apparent that they each contain literature which is clearly relevant to SDM, due to the significant conceptual overlaps and shared themes (e.g. decision making process, cognitive style, cognitive biases and heuristics). This literature review provides a review of the major themes contained within each of these domains of literature, and also presents a consolidated critical synthesis of these themes in order to identify gaps in the

¹ Refer to appendix 8.1 for systematic literature review methodology

theory, and how such gaps may be addressed by drawing upon theory from within these four domains of literature. It should be stressed however that not only have the themes within each of these domains emerged disparately, but there has been a diminution in the prominence of certain themes (e.g. cognitive style and cognitive biases) particularly within the strategic management domain of literature. The review of the social-psychology domain of literature identified literature in these same themes which has been published up until the present day.

A prominent theme within all four domains of literature is that of the effects of cognition (and associated constructs such as cognitive style, decision style, heuristics and biases) within decision making. It is clear that some theory development took place within the strategic management domain of literature from the mid 1980s; however there has been limited theory development within this area since the mid 1990s. For example Nutt (1993) and Lord & Maher (1990) made contributions concerning cognitive style, and Schwenk (1984) and Eisenhardt & Zbaracki (1992) made explicit calls for further theory building within the area of cognition and decision making. Hough & Ogilvie (2005, p.418) state that “To advance the field we need more studies of strategic decision makers based on literature from psychology.” Such calls have largely been ignored despite the fact that the social-psychology domain of literature provides contemporary constructs and measurement scales in topic areas such as cognitive style and heuristics (e.g. Ash, 2009; Hart et al, 2009; Kahneman, 2003; Kahneman & Klein, 2009; Oxoby, 2009), decision making style (e.g. Dunwoody et al, 2000; Spice & Sadler-Smith, 2005) and decision making competence (e.g. De Bruin et al, 2007 and Raven et al 2003). Furthermore, the organisational behaviour literature contains recent theory development in respect of cognition and decision making e.g. Kim et al (2006) and Khatri & Ng (2000).

It is also worthwhile noting that the strategic management literature has not adopted some of the more contemporary conceptualisations of the decision making process contained within the marketing literature. Research efforts focused upon characterising the strategic decision making process (in the strategic management literature) are evident in the mid 1970s through until the mid 1990s (e.g. Mintzberg et al, 1976; Schwenk, 1984; Shrivastava & Grant, 1995) however, the marketing domain has developed a more dynamic perspective of decision making (e.g. Greenley, Hooley & Saunders, 2004). Indeed the marketing literature appears to emphasise the importance of flexibility (Coombe & Greenley, 2004; Greenley et al, 2004; Jocusen, 2004) and complexity (Neill & Rose, 2006) in the decision making process.

1.2 Contents and Structure of the Dissertation

The purpose of this dissertation is to critically review the strategic management, marketing, organisational behaviour and social-psychology domains of literature in order to identify how a significant theoretical contribution can be made to the strategic decision making literature.

This dissertation is structured as follows: The remainder of this section outlines the framework level theory upon which this dissertation is based. Section 2 reviews the major themes contained within the four domains of literature. Section 3 then critically synthesises the literature contained within each of the four domains of literature into one entire body of literature, in order to highlight gaps in knowledge and understanding where a theoretical contribution can be made; section 4 proposes a conceptual model; section 5 outlines a proposed research methodology for the completion of the PhD, and finally; section 6 provides a summary of this dissertation.

1.3 Framework Level Theory – Contingency Theory

This section of the dissertation examines the most appropriate framework level theory (Contingency Theory) for this dissertation and future research in this area. The selection of an appropriate framework level theory is important because it will assist in structuring the research, identifying variables and informing how a contribution can be made (Ginsberg & Venkatraman, 1985).

Contingency theory (“CT”) assumes that “there is no one best way to organize, and that any one way of organizing is not equally effective under all conditions.” (Ginsberg & Venkatraman, 1985, p.421). Furthermore, proponents of CT stress the importance of the concept of matching organizational resources with the corresponding environmental context (Andrews, 1980; Chandler, 1962; Ginsberg & Venkatraman, 1985). Finally, CT posits that “no universal set of strategic choices exist that is optimal for all businesses, irrespective of their resource positions and environmental context.” (Ginsberg & Venkatraman, 1985, p. 421). Thus, an organisation’s performance is contingent upon the extent to which it can optimally deploy its resources within the specific environment in which it operates.

Alternative framework level theories are considered and discussed in section 1.3.4 of this section. Sections 1.3.1 and 1.3.2 relate contingency theory to central themes within the strategic management and strategic decision making domains of literature. Section 1.3.3 identifies some criticisms which have been levelled at contingency theory.

1.3.1 CT and Strategic Adaptation and Strategic Flexibility

Strategic adaptation is defined as “the making of appropriate adjustments to the business and its strategic focus” (Schindehutte & Morris, 2001, p.84). Chakravarthy (1982, p.35)

introduces the concept of “fit”, and defines the purpose of strategic adaptation as “to fit the firm more particularly for existence under the conditions of its changing environment.”

Therefore the concept of “fit”, that is, to match organisational resources to the environment (Chakravarthy, 1982; Ginsberg & Venkatraman, 1985) is central to both the concept of strategic adaptation and CT.

Strategic flexibility is defined as “the extent to which new and alternative decisions are generated and considered...allowing for positive organizational change and adaptation to environmental turbulence.” (Rudd, Greenley, Beatson & Lings, 2008, p. 99). As such strategic flexibility acts an antecedent to strategic adaptation. The concept shares similar themes (organizational change in order to better fit with environmental conditions) with the strategic adaptation concept and also CT, further supporting the assertion that this research should be grounded within a CT framework. The adoption of the CT framework will justify the inclusion of variables such as the environment, and organizational structure in the study.

1.3.2 CT and Strategic Decision Making

A significant body of literature published within the strategic decision making literature has adopted a CT perspective; which focuses upon the alignment of organizational structure and decision making style with the environment. For example, Bobbit & Ford (1980) posit that an organisation’s structure is the result of an interaction of the decision maker’s cognitive and motivational orientations, transformation strategies, and the organisation’s context. A further example is Hough & White’s (2003) investigation of the role of environmental dynamism (defined in their study as rapidly changing technology and shifting competition) as a

contingent predictor of the relationship between rational-comprehensive strategic decision making and firm level performance. Therefore, the adoption of the CT framework supports the assertion that variables such as the environment, organisational structure and decision making style should be included within the SDM research. This is further supported by Ginsberg & Venkatraman (1985, p. 430) who state that “organizational context refers not only to environmental positions or attributes, but also to organizational variables such as the structural context, managerial style, or past performance. However, this standpoint has not been reflected adequately in the empirical research.” This quote therefore supports the inclusion of individual level variables such as managerial or cognitive style in a study of strategic decision making how it facilitates strategic adaptation.

1.3.3 Criticisms of CT

CT has been criticised for a lack of clarity (Schoonhoven, 1981). Schoonhoven, (1981, p.350) states that “it is more an orientating strategy or metatheory, suggesting ways in which a phenomenon ought to be conceptualised or an approach to the phenomenon ought to be explained.” Schoonhoven also criticises CT for assuming relationships to be linear.

Venkatraman (1989), whilst agreeing with Schoonhoven’s assertion that CT lacks clarity, addresses this criticism by outlining a classification framework of different perspectives of the concept of “fit”. Venkatraman (1989) proposes that “fit” can be conceptualised as: (i) fit as moderation, where the impact that a predictor variable has on a criterion variable is dependent on the level of a third variable (the moderating variable); (ii) fit as mediation, where an intervening mechanism exists; (iii) fit as matching, where fit is a theoretically defined match between two related variables; (iv) fit as gestalts, a multivariate perspective referring to the degree of internal coherence among a set of theoretical attributes; (v) fit as

profile deviation, where fit is the degree of adherence to an externally specified profile. And finally; (vi) fit as covariation, referring to a pattern of covariation or internal consistency among a set of underlying theoretically related variables.

Therefore, the conceptual work of Venkatraman (1989) addresses the criticism made by Schoonhoven (1981) which suggested CT lacked clarity. The other criticism made by Schoonhoven (1981) regarding the assumed linear relationships between variables, should be considered during this research, and relationships between variables should not be assumed to be linear.

1.3.4 Alternative Framework Level Theories

Some strategic flexibility and strategic decision making researchers have adopted a Resource-Based View (“RBV”) perspective (e.g. Coombe & Greenley, 2004; Kraatz & Zajac, 2001; Neill & Rose, 2006). The RBV argues that “the heterogeneous market positions of close competitors derive from each firm’s unique bundle of resources and capabilities.” (Hoopes, Madsen & Walker, 2003, p. 890). Furthermore, to be a source of competitive advantage resources and capabilities must be valuable, rare and isolated from substitution or imitation (Hoopes, Madsen & Walker, 2003). Coombe & Greenley (2004, p.1458), argue that “the capabilities for strategic flexibility can be thought of as dynamic capabilities, because they are associated with new resource configurations required to lead or deal with change.”

The RBV has however, been the subject of several criticisms. For example, Priem & Butler (2001, p.33) state that “the strategy literature contains numerous references to resources being

useful, without careful attention to when, where, and how they may be useful.” The authors also outline the following four flaws with RBV theory: (i) considerable conceptual work remains before the RBV can meet the requirements of a theoretical structure; (ii) the RBV makes implicit assumptions about markets; (iii) overly inclusive definitions of resources make it more difficult to establish contextual and prescriptive boundaries, and; (iv) static, cross sectional approaches to RBV result in causal hows and whys remaining in a black box.

A final major criticism of the RBV, which in itself justifies its exclusion as the framework level theory for this research is cited by Priem & Butler (2001, p. 29): “It is the market environment, through opportunities and threats, that determines the degree of value held by each firm resource in the RBV. As the competitive environment changes, resource values may change. Thus, resource value is determined from a source exogenous to the RBV.” As such, the authors suggest that the RBV should adopt a contingency approach and state that “development of contingency theories of resource value might be a helpful step in clarifying the role and likely contributions of the RBV in strategy research.” (Priem & Butler, 2001, p. 32). Therefore, in light of these criticisms of the RBV, and the explicit suggestion that RBV theory *itself* could be improved by the adoption of a contingency perspective, the RBV would not seem a suitable framework level theory to adopt.

An alternative theory which could be argued to be appropriate as the framework level theory for this research is the Upper Echelons Theory. This refers to the notion that the characteristics of senior management (the upper echelon of an organization) can influence the decisions and practices adopted by an organization (Hambrick & Mason, 1984). Hambrick and Mason (1984) posited that managers’ characteristics influence the decisions that they

make and therefore, the actions adopted by the organizations. The authors suggest that this is because demographic characteristics are associated with the cognitive bases, values and perceptions that influence the decision making of managers.

Whilst this theory is of relevance given the importance and effect of senior management characteristics in strategic decision making highlighted in the strategic decision making literature (e.g. Nutt, 1993; Schwenk, 1984), the adoption of this theory may distract from the central theme and associated variables of how organisations adapt, and the role that strategic decision making has in achieving this. The Upper Echelons Theory may therefore too narrowly focus the study upon top management team characteristics and neglect the importance of other variables such as the environment, organisational structure and the strategic decision making process.

1.3.5 Summary of CT as a Framework Level Theory

The literature review has identified the centrality of CT to the study of strategic decision making. The adoption of CT as a framework level theory can offer justification for the variables which have emerged as being significant during the literature review (e.g. the environment, organisational structure, strategic flexibility, and individual level variables such as cognitive style). CT posits that organisational resources must be deployed and matched to the organisation's environment, which is also a concept central to the PhD research topic and the importance of this has been reinforced by the literature review. There is considerable support for CT within the strategic management literature, and Ginsberg & Venkatraman (1985, p. 421) state "it is perhaps a truism that any theory of corporate or business strategy must be, by definition, contingency-based."

2.0 LITERATURE REVIEW – MAJOR DOMAINS OF LITERATURE

This section of the literature review provides an overview of the major themes which were identified related to SDM and DM which have featured within the Strategic Management, Marketing, Organisational Behaviour and Social-Psychology domains of literature

2.1 Strategic Management Domain of Literature

Section 2.1 provides an overview of the major SDM themes contained within the strategic management literature. These can be broadly categorised as: the strategic decision making process (section 2.1.1); strategic decision making typologies (section 2.1.2); individual level variables (section 2.1.3); contextual antecedents (section 2.1.4); SDM characteristics (section 2.1.5), and; SDM outcomes (section 2.1.6).

2.1.1 The Strategic Decision Making Process

A focus within the strategic management literature has been to characterise SDM as being a process. (Schwenk, 1984). Noorderhaven (1995, p.18) defines the strategic decision making process as “a time-consuming process, in which various kinds of activities, taking place at different moments, can be discerned.” Noorderhaven (1995) also states that the SDM process consists of a series of activities and that in the majority of cases “three basic activities are distinguished: Problem identification, generation of alternative solutions and evaluation of alternatives.”

The SDM literature contains several different models of the strategic decision making process (see table 1). Schwenk (1984) attempts to overcome this lack of consensus by synthesising the extant SDM process models in order to derive a process model which simplifies, yet captures the critical stages of the various SDM process models proposed within the SDM literature. Schwenk's (1984) model, together with 10 other SDM process models featured within the SDM literature are presented in table 1, together with a new simplified, derived model. All of these descriptive models contain various numbers of stages, yet all contain distinct similarities. All of the models broadly contain activities where decision makers: (i) Recognise the existence of a strategic problem or a strategic opportunity. It should be noted that some SDM process models describe only the recognition of a strategic problem. However, this view is too narrow and neglects strategic decisions which are taken in response to strategic opportunities (Dutton & Jackson, 1987; Fredrickson, 1985); (ii) develop strategic alternatives which can address the strategic opportunity or strategic problem; (iii) select the most appropriate strategic option; and (iv) implement the strategic decision and undertake control activities. Some models emphasise the detail within each of these four stages, and split each of the four stages into further steps.

Noorderhaven (1995) criticises some of the normative models of SDM which portray the SDM process to be linear and sequential. Noorderhaven (1995) and Mintzberg et al (1976) stress that in practice, decision makers are likely to return to earlier stages of the strategic decision process as initial analyses and assumptions may be proven to be inaccurate as the SDM process progresses, and as such the SDM process is considered to be iterative.

Table 1 – Models of the strategic decision making process

Blankenship & Miles (1968)	Mintzberg et al (1976)	Armstrong (1982)	Schwenk (1984)	Hitt & Tyler (1991)	Eisenhardt & Zbaracki (1992)	Wally & Baum (1994)	Shrivastava & Grant (1985)	Krabuanrat & Phelps (1998)	Nutt (1998)	Schramm-Nielsen (2001)	DERIVED MODEL
1. Recognition of a problem requiring some response	<i>Identification phase</i> 1. Decision recognition 2. Diagnosis	1. Specify objectives	1. Goal formulation & problem identification	1. Examine the firm's external and internal environment	1. Gather appropriate information (driven by known objectives)	1. Intelligence activity	<i>Problem familiarisation</i> 1. Dominant problem-solution set 2. Refinement of problem-solution	1. Precise formulation of the problem	1. Framing	1. Problem perception	1. Recognition of strategic problem or strategic opportunity
2. Investigation of the problem and its environment in an effort to collect relevant information and generate solutions	<i>Development phase</i> 3. Search 4. Design	2. Generate strategies	2. Strategic alternatives generation	2. Derive a set of objective criteria	2. Develop a set of alternative actions (driven by known objectives)	2. Design activity	<i>Solution Development Activity</i> 1. Evaluation of other alternatives 2. Development of feasible solution 3. Ratification by top management	2. Information search	2. Direction setting	2. Problem identification	2. Development of strategic options
3. The selection of a course of action based on analysis of the available information and solutions	<i>Selection Phase</i> 5. Screen 6. Evaluation 7. Authorisation	3. Evaluate strategies	3. Evaluation and selection	3. Decide upon strategy	3. Select the optimal alternative (driven by known objectives)	3. Choice activity	<i>Decision outcome and Implementation</i> 4. Specific decisions 5. Outline approach	3. Listing of alternative solutions	3. Option generation	3. Problem formulation	3. Selection of strategic option
		4. Monitor results	4. Implementation					4. Evaluation of alternatives according to predetermined criteria	4. Option evaluation	4. Search for alternatives	4. Implementation and control
								5. Choice of solution	5. Implementation	5. Evaluation of alternatives	
										6. Choice of alternative	
										7. Start of operation	
										8. Implementation	
										9. Control	

The SDM process models presented in table 1 talk about a process whereby a decision maker undertakes a series of stages, commencing with the perception of a problem or recognition of an action, through until action has been taken to solve it. These SDM process models are associated with rationality (Schramm-Nielsen, 2001). Rationality is characterised by the assumption that prior to making a decision, managers have known objectives, that they seek to comprehensively gather relevant information and then this information is used to generate a set of actions before the optimal solution is identified (Eisenhardt & Zbracki, 1992). Strategic decision comprehensiveness is a construct associated with rationality, and a comprehensive SDM process would generate a wide range of strategic alternatives, with each carefully evaluated and detailed plans made based upon this systematic analysis (Janis & Mann, 1977). A criticism therefore that could be levelled at these SDM process models presented in table 1, is that they ignore the cost of obtaining information as well as assuming that the relevant information will be available (Braybrooke & Lindblom, 1970). The rational model of SDM process also ignores decision maker's cognitive limitations (Schwenk, 1984), which may result in certain stages of the SDM process being omitted.

The rational process model of SDM is synonymous with formal strategic planning. Hahn (1999) cites five steps undertaken in formal strategic planning: (i) Define the organisation's mission; (ii) perform an environmental scan and analysis of competencies; (iii) establish objectives, strategies, and tactics; (iv) implementation, and; (v) review performance and make necessary adjustments. A discussion of the conceptual similarities and differences of formal strategic planning and strategic decision making is beyond the scope of this literature review. However, due to the conceptual overlap between formal strategic planning and the strategic decision making process models, some criticisms of the formal strategic planning literature are now considered, as these same criticisms could be levelled at the SDM process literature.

Among the chief critics of the formal strategic planning literature is Henry Mintzberg (e.g. Mintzberg, 1990; Mintzberg, 1993; Mintzberg, 1994a; Mintzberg, 1994b). Mintzberg (1993) criticises the formal strategic planning literature for not addressing environmental uncertainty². Mintzberg (1993, p.36) states that formal strategic planning is flawed because it “works best when it extrapolates the present or deals with incremental change within the existing strategic perspective.” The implication being that in uncertain environmental conditions, a formal strategic planning process will be unable to make accurate predictions because the future will not be similar to the present, i.e. the environment is unpredictable. Mintzberg (1993, 1994b) emphasises the importance of vision and learning, as opposed to formal strategic planning, in enabling organisations to be flexible and therefore able to adapt to uncertain environments. Mintzberg (1993, p.33) states that formal strategic planning can result in managers failing to consider “truly creative ideas and truly quantum changes.”

Whilst Mintzberg’s (1990, 1993, 1994a, 1994b) criticisms highlight potential weaknesses in the formal strategic planning literature’s characterisations of this process, Mintzberg’s (1990, 1993, 1994a, 1994b) work has itself attracted strong criticism. Ansoff (1991) questions the robustness of the research methodology of Mintzberg’s (1990) work, which was based upon a sample size of one, and of making “sweeping assertions” (Ansoff, 1991, p.451). Ansoff also identifies Mintzberg’s (1990) “failure to meet validity tests for prescriptive and descriptive observations” (Ansoff, 1990, p.455). Therefore, due to the unsound methodology adopted by Mintzberg (1990), combined with Mintzberg’s “insistence on universal applicability of the existence learning model, which leads to assertions which contradict observable reality”, Mintzberg’s (1990, 1993, 1994a, 1994b) work should be treated with a degree of scepticism. However, this dissertation acknowledges the existence of both perspectives, as well as the

² See section 2.1.4.1 for a discussion of environmental factors

relative merits and criticisms of these two perspectives in order to address a criticism levelled at the strategic management domain of literature: “Our problem...has always been one of imbalance, the assumption that planning (or learning) could do it all.” (Mintzberg, 1991, p. 465).

2.1.2 Strategic Decision Making Typologies

The SDM domain contains a body of literature which seeks to propose or derive typologies of SDM (see table 2.) These typologies are discussed within this section of the literature review.

Table 2 - Summary of SDM Typologies

Domain	Author(s) / Year	Research Methodology	Conclusions and Findings
Strategic Management	Hart (1992)	Conceptual	<ul style="list-style-type: none"> 5 modes of SDM proposed: Command mode; Symbolic mode; Rational mode; Transactive mode, and; Generative mode.
	Hickson et al (1986)	Quantitative	<ul style="list-style-type: none"> Typology of strategic decisions proposed: fluid; constricted, and; sporadic.
	Hitt & Tyler (1991)	Quantitative	<ul style="list-style-type: none"> Three models of SDM derived: Rational-Normative; External Control, and; Strategic Choice.
	Shrivastava & Grant (1985)	Mixed	<ul style="list-style-type: none"> Derived four models of SDM process: Managerial Autocracy; Systemic Bureaucracy; Adaptive Planning, and; Political Expediency.

Hart (1992) proposes five styles of strategic decision making. Hart defines a ‘Command Mode’ of SDM as having a “strong individual leader or a few top managers exercising total

control over the firm. Strategy making is a conscious, controlled process that is centralised at the very top of the organisation.” (Hart, 1992, pg. 335). A ‘Symbolic Mode’ is characterised as entailing a mission and vision driving the organisation. A ‘Rational Mode’ of SDM is portrayed as consisting of formal structures and processes, and being comprehensive in terms of its scope. A ‘Transactive Mode’ is an iterative process (similar to the process portrayed by Noorderhaven, 1995 and Mintzberg et al 1976) characterised by feedback and learning, whilst in the final mode, the ‘Generative Mode’ strategy is “made via intrapreneurship...employee initiative shapes the firm’s strategic direction.” (Hart, 1992, pg. 338).

Hickson, Butler, Cray, Mallory & Wilson (1986) proposed a typology of strategic decisions which included fluid, constricted and sporadic decision processes. A fluid decision is characterised by steady speed and is formally channelled. A constricted process is narrowly channelled and restricted in terms of effort. A sporadic decision process is erratic and protracted.

Schwenk (1995) criticises the SDM literature stating that whilst there has been conceptual work done on strategic decision models, however, efforts to assess the validity of the models empirically is somewhat more rare. An exception exists in the work of Hitt & Tyler (1991) whom empirically examined three SDM models: the rational-normative model (sequential SDM process emphasising exhaustive external and internal analysis); the external control model (the success of decisions is determined by the external environment), and; the strategic choice model (some elements of the environment are fixed, the remaining elements should be shaped to the organisation’s advantage). Hitt & Tyler (1991) utilised a procedure referred to

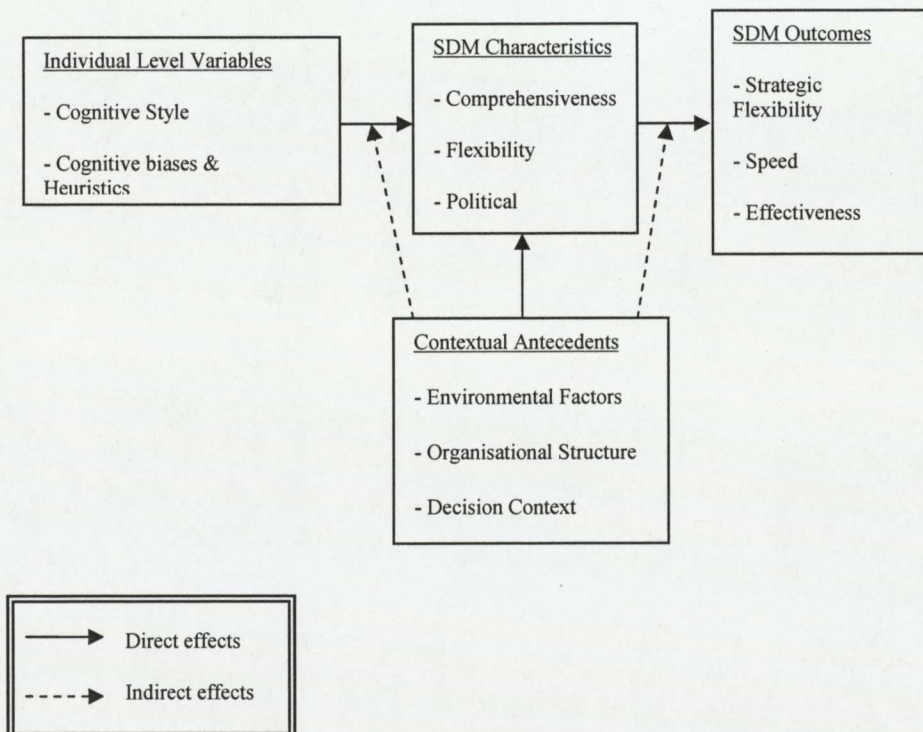
as 'policy capturing', whereby 30 case studies were constructed for respondents in order to assess their preference for objective criteria in decision making. The authors found strong support for the rational-normative model, and also that SDM models varied by industry and executive characteristics (age, educational degree type and work experience).

Further empirical evidence exists in the work of Shrivastava & Grant (1985), who proposed and tested four SDM models. Shrivastava & Grant (1985) utilised measures of: The number of decision situations; number of people involved in the decision process; average time taken for decision-making; average payback; average data processing experience of the organisation; average size of data processing department; perceived success of the decision, and; perceived uncertainty among decision makers, in order to derive their models. The first, the 'Managerial Autocracy Model' has a single key manager responsible decision making. The second, 'Systemic Bureaucracy Model', is characterised by organisational systems, rules and regulations determining the SDM process. The third, the 'Adaptive Planning Model', entails the modification of long range strategic plans by professional staff within the planning cycle to accommodate change within the organisation or in the external environment. Finally, the 'Political Expediency Model' features coalitions negotiating their critical choices. The findings indicated that entrepreneurial firms favoured the Managerial Autocracy model, whereas multinational companies were associated with the 'Adaptive Planning Model'. Shrivastava & Grant (1985) contend that these four models are a basis for developing a more comprehensive taxonomy for classifying SDM processes. However a considerable amount of further research is required and especially important is determining the ways in which SDM processes affect the choice of organisation structure (Shrivastava & Grant, 1985).

2.1.3 Individual Level Variables

The remaining topics contained within the strategic decision making literature which are covered in section 2.1 of this literature review are outlined in figure 1, which is an adaptation of Rajagopalan, Rasheed & Datta's (1993) SDM framework. Rajagopalan et al (1993) did not specifically identify individual level variables; instead this area was subsumed within a broader category of organisational factors, and the authors did not explore the potential effects of individual level variables upon SDM. The remaining topics covered in the review of the strategic management domain of literature can be classified as individual level variables; contextual antecedents; SDM characteristics, and; SDM outcomes.

Figure 1 – SDM Framework (Adapted from Rajagopalan, Rahseed & Datta, (1993)



Individual level variables consist of two areas of theory: (i) cognitive style, and; (ii) cognitive biases and heuristics. The study of individual level variables within the SDM literature is associated with a bounded rational perspective of SDM, whereby researchers have acknowledged the cognitive limitations of decision makers as well as the costs associated with obtaining information. The bounded rational perspective of SDM is characterised by inconsistency in goals across people and time, and limited information search activity (Eisenhardt & Zbracki, 1992; Mandal, Thomas & Antunes, 2009). These individual level variables are discussed in detail in the following sections.

2.1.3.1 Cognitive Style

Cognitive style is defined as “a theoretical construct used to describe an individual’s manner of processing information.” (Coombe & Greenley, 2004, p. 1460). Information processing is a term used synonymously with cognitive style as well as decision style within the strategic management literature and is defined by Kiesler & Sproull (1982, p.556) as “encoding, representation and organisation of encoded material, memory and retrieval.” Cognitive style is likely to influence the strategic decision making process at the first two stages; recognition of the strategic problem or strategic opportunity and the development of strategic options because it is at these first two stages where strategic decision makers gather and utilise information to initially identify a problem and then to generate alternative solutions (Schwenk, 1984). Coombe & Greenley (2004) posit that cognitive style will either enable or constrain decision makers from generating strategic options. Table 3 presents a summary of the literature which has been identified regarding cognitive style which is contained within the strategic management, marketing, organisational behaviour and social-psychology

literature domains. Table 3 is presented here to provide an early overview to the reader of the major research contained within each of the domains of literature relating to cognitive style.

Table 3 – Cognitive Style – Summary of Literature

Domain	Author(s) / Year	Research Methodology	Conclusions and Findings
Strategic Management	Hough & Ogilvie (2005)	Quantitative – Myers Briggs Type Index (MBTI)	<ul style="list-style-type: none"> • Cognitive style impacts upon strategic decision quality, perceived decision effectiveness, and manager decisiveness. • Intuiting/Thinking managers associated highly with perceived decision effectiveness • Sensing/Feeling managers were associate with low levels of perceived decision effectiveness
	Dane & Pratt (2007)	Conceptual	<ul style="list-style-type: none"> • Propose a model that incorporates domain knowledge, implicit and explicit learning, and task characteristics on intuition effectiveness.
	Henderson & Nutt (1980)	Quantitative (MBTI)	<ul style="list-style-type: none"> • Cognitive style was found to be an important factor in the decision to adopt a project and the assessment of risk. • Sensation-Thinking styles saw the highest risk and were reluctant to adopt • Sensation-Feeling types were risk tolerant and more likely to adopt.
	Lord & Maher (1990)	Conceptual	<ul style="list-style-type: none"> • Propose a typology of information processing models (Rational, Limited Capacity, Expert, and Cybernetic).
	Leonard et al (2005)	Conceptual	<ul style="list-style-type: none"> • Groups can develop consistency in information processing behaviours. • The cognitive style of the group reflects differences in the structure and composition of that group, as well as the cognitive style and interactions of individual group members.
	Nutt (1993)	Quantitative (MBTI)	<ul style="list-style-type: none"> • Flexible decision makers are the most effective decision makers. • Flexible decision makers have access to several modes of understanding (sensing, intuition, thinking, and feeling).
Organisational Behaviour	Hunt et al (1989)	Quantitative (MBTI)	<ul style="list-style-type: none"> • Demonstrated the congruence of decision makers' cognitive style and preferred strategy over phases of the decision process. • Dependence of decision process upon decision maker cognitive style.
	Khatri & Ng (2000)	Quantitative	<ul style="list-style-type: none"> • Intuition was positively associated with organisational performance in an unstable environment, but negatively related in a stable environment.
	Ruble & Cosier (1990)	Quantitative (MBTI)	<ul style="list-style-type: none"> • No main or interaction effects of cognitive style upon performance were found. • Task differences affect prediction accuracy.

Social-Psychology	Kahneman (2003)	Conceptual	<ul style="list-style-type: none"> • System 1 / System 2 dual processing theory
	Kahneman & Klein (2009)	Conceptual	<ul style="list-style-type: none"> • Outline the boundary conditions that separate true intuitive skill from overconfident and biased impressions.
	Epstein (1994)	Conceptual	<ul style="list-style-type: none"> • Experiential / Rational dual processing theory
	Epstein et al (1996)	Quantitative (RAI)	<ul style="list-style-type: none"> • Demonstrated the validity of scales for measuring: (i) the experiential-rational dual processing theory, and; (ii) A need for cognition and faith in intuition scale to measure cognitive style.
	Hodgkinson et al (2008)	Conceptual	<ul style="list-style-type: none"> • Contend that the literature concerning intuition is under-developed • Distinguishes and defines intuition, as well as outlining the methodological challenges associated with the valid and reliable assessment of it.
	Allinson & Hayes (1996)	Quantitative (CSI)	<ul style="list-style-type: none"> • Reports the validation of the Cognitive Style Index (CSI) which measures individuals' preference for analytical versus intuitive thinking.

Cognitive style has been found to influence actual strategic decision outcomes (Hough & Ogilvie, 2005). Hough & Ogilvie (2005) found that a decision maker's cognitive style impacts upon strategic decision quality, perceived effectiveness and also manager decisiveness. Cognitive style, "individual differences in preferred ways of organising and processing information and experience" (Hough & Ogilvie, 2005, p.421) was measured using the Myers-Briggs Type Indicator (MBTI). The MBTI is based upon Jung's (1921) theory of psychological types, which suggests that individuals possess preferences for: (i) their orientation to the outside world (extraversion vs. introversion); (ii) their perceptual process (sensing vs. intuition), and (iii) their judgment process (thinking vs. feeling). Hough & Ogilvie (2005), through a simulated strategic decision making environment, found that intuiting/thinking managers were associated with decisions of higher quality. In contrast, sensing/feeling managers made decisions with the lowest perceived effectiveness. Extrovert managers were found to be more decisive than introverted managers. The study does not allow for environmental conditions, and the authors suggest that "it may be that intuitive

managers are more effective in such (unstable) environments” (Hough & Ogilvie, 2005, p.443). The authors also acknowledge the limitations of an experimental design, and state that a field test will help to better understand the effects of cognitive style upon SDM.

The view that intuition may be more effective in certain environments is echoed by Dane & Pratt (2007) whom state that “the need for intuition may be especially acute in organizations embedded in turbulent environments.” (Dane & Pratt, 2007, p.33). Dane & Pratt (2007) outline a research proposition suggesting that the relationship between environmental uncertainty and the effectiveness of intuition is mediated by judgmental task characteristics (i.e. tasks which are unstructured and lack defined decision procedures such as acquisition decisions).

Henderson & Nutt (1980) also utilised the MBTI in an experimental design order to assess how cognitive style influences decision behaviour. The authors found that sensation-thinking styles saw the highest risk in the capital expansion projects proposed to them, and were reluctant to adopt the projects. However, sensation-feeling types were risk tolerant and more likely to adopt the same projects. The authors also determined that cognitive style was influenced by setting. The executives participating in the experiment whom worked in hospitals were more conservative than the executives whom worked in firms: “executives in hospitals...cannot deal with demand and other environmental factors in a structured manner.” (Henderson & Nutt, 1980, p.384). In making this statement, the authors explicitly acknowledge the importance of the environment is influencing a decision maker’s behaviours. Finally, Henderson & Nutt (1980) concede that their findings must be qualified

by the experimental design and narrow scope of their study, and suggest that future research should attempt to link decision style with performance measures.

Nutt (1993) posits that cognitive style will affect the strategic decision making process by determining the types of experience and information which are stored by decision makers which will result in a selective search where “cues that correspond to the types of information emphasised by the manager are recognised, and other kinds of cues are ignored.” (Nutt, 1993, pg. 696). As such, Nutt implies that cognitive style is likely to most affect the SDM process at the first two stages whereby the decision maker is concerned with gathering and making sense of information. Nutt examines how flexible decision styles influence the decisions of executives. Nutt utilises the Myers-Briggs Type Indicator, a scale used to classify people according to Jung’s (1921) psychological types through assessing their preferences for types of data and ways of processing data. Nutt found that flexible decision makers have access to several modes of understanding (sensing, intuition, thinking and feeling). Nutt presents five auxiliary styles (analysers, observers, data processors, linkers and synthesisers), and posits that each particular style uses a different combination of sensing, intuition, thinking and feeling. According to Jung, sensing and intuition are used to acquire information, and thinking and feeling are used to actually reach a decision (Nutt, 1993).

Lord & Maher (1990) present a taxonomy of Information Processing models (rational, limited capacity, expert, and cybernetic). Lord & Maher criticise the extant literature for implicitly adopting either a rational or limited capacity model of information processing and failing to consider the application of the expert or cybernetic models postulated within their paper. A rational model assumes that decision makers exhaustively process all relevant

information in order to maximise a relevant outcome. A major criticism of the rational models is that decision makers seldom have sufficient information or memory to behave optimally. (Lord & Maher, 1990). The Limited Capacity model focuses on how decision makers simplify information processing while generating adequate but not optimal behaviours. This is similar to the 'Satisficing Model' proposed by Simon (1955) whereby "decision makers select the first alternative which meets their minimum requirements, rather than choosing the best from all the alternatives on offer" (Hodgkinson, 2003). Limited capacity models utilise cognitive heuristics and other cognitive biases to reduce information processing demands (Lord & Maher, 1990). Lord & Maher (1990, pg. 13) define an expert model as one where "decision makers rely on already developed knowledge structures to supplement simplified means of processing information." Finally, the cybernetic model is defined as "dynamic...behaviour, learning, and the nature of cognitive processes themselves may be altered by feedback." (Lord & Maher, 1990, pg. 15).

Cognitive style has also been conceptualised at the group level (although the application of the cognitive style construct at the group level is rare). Whilst this section of the dissertation deals specifically with individual level variables, this cognitive style sub-section is a logical place to outline the research applying cognitive style at the group level. The application of cognitive style at the group level is important as SDM can be a process carried out by a group of individuals, not just an individual by themselves. Group cognitive style is defined as "a group's preferred way of gathering, processing, and evaluating information." (Leonard, Beauvais & Scholl, 2005, p.131). The authors propose that differences in organizational decision processes are attributable to differences in cognitive style of the group as a whole (Leonard et al, 2005). This conceptualisation therefore assumes that groups can develop consistency in information processing behaviours, and that the cognitive style of the group

reflects differences in the structure and composition of that group, as well as the cognitive style and interactions of individual group members.

Cognitive style is therefore likely to have a significant effect upon the SDM process. The cognitive style of decision makers determines the type of information sought, how it is processed and the extent of these search and processing activities.

2.1.3.2 Cognitive Biases

Cognitive biases are defined as processes which are employed by decision makers in order to overcome the problem of human information processing capacity being limited, and also to simplify their perceptions of problems (Hodgkinson, Maule, Bown, Pearman & Glaister, 2002; Krabuanrat & Phelps, 1998; Schwenk, 1984). Cognitive biases therefore explain how decision makers deal with complexity, ambiguity and uncertainty (Schwenk, 1984).

Cognitive biases are important because “in explaining the nature, content, and timing of strategic decisions, behavioural and nonrational impacts on the decision process must be taken into account” (Duhaime & Schwenk, 1985, p.287). It is noted that the term ‘heuristics’ is used within the SDM literature also to mean cognitive biases, as Schwenk notes “the term ‘biases’ suggests that these processes generally have a negative impact on strategic decisions.” (Schwenk, 1984, pg. 112). Table 4 presents a summary of the literature which has been identified regarding cognitive biases (and heuristics) which is contained within the strategic management, marketing, organisational behaviour and social-psychology domains.

Table 4 - Cognitive Biases – Summary of Literature

Domain	Author(s) / Year	Research Methodology	Conclusions and Findings
Strategic Management	Nutt (1998)	Quantitative	<ul style="list-style-type: none"> Framing bias is present when Stakeholders frame decisions by calling attention to trends and events they consider need addressing by decision makers.
	Hodgkinson et al (1999)	Quantitative (experimental)	<ul style="list-style-type: none"> The negative impact of framing bias can be reduced by decision makers adopting a cognitive mapping technique.
	Schwenk (1984)	Conceptual	<ul style="list-style-type: none"> Outlines a conceptualisation of the particular stage of the SDM process a particular type of cognitive bias is likely to occur.
	Duhaime & Scwhenk (1985)	Conceptual	<ul style="list-style-type: none"> Propose four cognitive biases which are likely to be present during M&A decision making: reasoning by analogy; illusion of control; escalating commitment, and; single outcome calculation.
	Des & Teng (1999)	Conceptual	<ul style="list-style-type: none"> Propose associations between 5 modes of SDM (rational, avoidance, logical incrementalist, political, and garbage can) and four types of cognitive bias (prior hypothesis, exposure to limited alternatives, insensitivity to outcome probabilities, and illusion of manageability).
Marketing	Qualls & Puto (1989)	Quantitative (Experimental)	<ul style="list-style-type: none"> Demonstrated that perceptions of leaders and the presence (or absence) of role stress (conflict, responsibility and ambiguity) affect decision framing.
	Mahajan (1992)	Experimental	<ul style="list-style-type: none"> Humbling (i.e. negative feedback) can reduce the presence of the overconfidence bias in decision making.
	Larreche & Moinpour (1983)	Experimental	<ul style="list-style-type: none"> Experts are able to provide better estimates than non-experts.
	Lee et al (1987)	Experimental	<ul style="list-style-type: none"> Examined the presence of the prior hypothesis bias in marketing decision making. Marketing Research which confirmed prior beliefs was more highly rated and used.

Organisational Behaviour	Kim et al (2006)	Conceptual	<ul style="list-style-type: none"> • High levels of decision maker confidence are likely to result in greater heterogeneity in the decision maker's adaptive decisions. • Low levels of decision maker confidence are likely to result in imitative decision maker adaptive decisions.
	Drummond (1994)	Qualitative (longitudinal)	<ul style="list-style-type: none"> • Structural and social pressures contribute most to the presence of the escalation bias.
Social-Psychology	Ash (2009)	Experimental	<ul style="list-style-type: none"> • Determined that hindsight bias occurred after decision makers were exposed to incongruent and ambivalent outcomes. • Hindsight bias impedes decision makers' ability to develop more accurate decision-making strategies.
	Hart et al (2009)	Meta-analysis	<ul style="list-style-type: none"> • Decision makers have a preference for congenial over uncongenial information, which is moderated by the strength of the individual's defence and accuracy motivations.
	Moon (2001)	Experimental	<ul style="list-style-type: none"> • Found a curvilinear relationship between sunk costs and the escalating commitment cognitive bias.
	Oxoby (2009)	Experimental	<ul style="list-style-type: none"> • Found that the structure of incentives not only motivates behaviour but also plays an important role in how individual's use information to form judgments about their own efforts and abilities.

A number of different types of cognitive bias are referred to within the SDM literature and one such bias which has been subject to considerable empirical research is referred to as framing bias. This is defined as “when trivial changes to the way in which a decision problem is presented, leads to reversals of preference.” (Hodgkinson et al, 1999, pg. 979). Nutt (1998, pg. 196) emphasises the role which stakeholders play in framing strategic decisions, stating “stakeholders continually call attention to trends and events in which concerns and needs arise that appear to merit a response.” In Nutt’s study of 352 strategic

decisions, he found that claims that suggested controversy and / or solutions were less successful than claims that identified what needs improvement. Hodgkinson et al (1999, pg. 979) found that cognitive mapping, defined as “effortful thought, in a relatively detailed, structured and systematic fashion”, provided an effective means of reducing the negative impact of framing bias upon strategic decisions.

A number of other types of cognitive bias are posited by Schwenk (1984), and an important tenet of his article is to illustrate the stage of the SDM process at which a particular type of cognitive bias is likely to take effect. For example, Schwenk states that ‘prior hypothesis bias’, where decision makers overemphasise the importance of information which confirms their hypotheses, is most likely to occur at the goal formation/problem identification stage. Also, ‘single outcome calculation’, where decision makers focus on just one goal and one course of action (as opposed to multiple goals and multiple courses of action) is most likely to arise at the second stage of the SDM process, the strategic alternatives generation phase. Finally, ‘illusion of control’, which is a type of cognitive bias whereby decision makers overestimate their ability to influence the outcome of their strategy, is most likely to be found at the third stage of SDM, the evaluation and selection phase.

Duhaime & Schwenk (1985) propose four types of cognitive bias that are likely to arise during acquisition and divestment decision making: (i) reasoning by analogy (where decision makers apply simple analogies and images to guide problem definition); (ii) illusion of control (where decision makers overestimate the extent to which the outcomes of an acquisition are under their personal control); (iii) escalating commitment (where decision makers persist with an acquisition despite subsequent evidence of the target performing

below expectation), and; (iv) single outcome calculation (where decision makers focus only upon the most initially promising acquisition targets). The authors also state recommend that research efforts attempt to “increase the interface among the fields of cognitive psychology, behavioural decision theory, and strategic management.” (Duhaime & Schwenk, 1985, p.294).

Das & Teng (1999) suggest that cognitive biases are systematically related to the specific decision process. Das & Teng (1999) suggest that five modes of SDM exist; (i) rational, where decision makers approach decisions with known objectives, and then diligently analyse information to develop alternatives; (ii) avoidance, where decision makers avoid uncertainty in order to prevent the problem that strategic decision-making processes often lead to a resistance to strategic change; (iii) logical incrementalist, where strategic decision making is a step by step incremental process; (iv) political, where it is assumed that groups of organizational members with competing interests fight for a decision favouring them, and; (v) garbage can, where strategic decision making is void of any consistency, and “organisations are viewed as organized anarchies” (Das & Teng, 1999, p.771). Das & Tang (1999) also outline four types of cognitive bias which affect SDM: (i) prior hypothesis, where previously formed hypotheses and beliefs are utilised in decision making; (ii) exposure to limited alternatives, where decision makers only expose themselves to a limited number of alternatives in order to achieve a goal; (iii) insensitivity to outcome probabilities, where decision makers do not attach sufficient importance to the probability of an outcome, rather they focus upon the value of a particular outcome, and; (iv) illusion of manageability, where decision makers form overly optimistic estimates. Das & Teng (1999) propose the following associations between each mode of strategic decision making and cognitive bias:

Table 5: Cognitive Biases and SDM Mode (adapted from Das & Teng, 1999)

	Rational Mode	Avoidance Mode	Logical Incrementalist Mode	Political Mode	Garbage Can Mode
Prior hypothesis bias	X	X		X	
Exposure to limited alternatives		X			X
Insensitivity to outcome probabilities		X			X
Illusion of manageability	X		X		

A debate as to whether cognitive biases may have a negative or positive impact upon strategic decisions exists within the strategic decision making literature. Hodgkinson et al (2002) argue that techniques should be developed in order to de-bias and thus enhance the quality of strategic decisions. An example of how a cognitive bias may negatively impact upon SDM is cited by Hodgkinson, Bown, Maule, Glaister & Pearman (1999) whom state decision makers utilising framing bias may cause trivial features of a decision to unduly influence the outcome. In contrast, Schwenk (1984) posits that such biases may actually improve decisions. Certain cognitive biases, such as intuition (which is more commonly referred to as a category of cognitive style) may enhance the speed of decisions. Wally & Baum (1994, pg. 936) define intuition as being “a form of compressed experience”. The literature conceptualises the use of intuition within the SDM process as having negative effects (Hitt & Tyler, 1991) and also positive effects (Lord & Maher, 1991) upon SDM.

Whilst conceptual development of these constructs can be found in the SDM literature, clarity concerning the effects of these constructs, in terms of their impact upon the SDM process and also SDM outcomes, is lacking. Schwenk explicitly calls for attempts to “identify the effects of some of these cognitive processes on strategic decision making” (Schwenk, 1984, pg. 126). Similarly, Eisenhardt & Zbaracki (1992, pg. 33) state “a next step on the agenda is to blend this psychological research with strategic decision making by exploring which heuristics are most relevant to strategic decision makers, how they work, why they work, and when they are most appropriate.” Rajagopalan, Rasheed & Datta (1993, p. 377) also state that “research on strategic decision processes can benefit from adopting an individual or micro perspective.”

2.1.4 Contextual Antecedents

The SDM literature features a body of literature which influences SDM, both directly (e.g. influencing SDM characteristics), and also indirectly (e.g. influencing the effect of individual level variables upon SDM characteristics, and also influencing the effect of SDM characteristics upon SDM outcomes). These contextual antecedents include: (i) environmental factors; (ii) organisational structure, and; (iii) decision context. These three contextual antecedents are now discussed in the following sections.

2.1.4.1 Environmental Factors

The environment is defined as the “relevant physical and social factors outside the organisational boundaries that are taken into consideration during organisational decision making” (Liao, Welsch & Stoica, 2008, p.16). Dess and Beard (1984) posit that three environmental dimensions exist: munificence (capacity), complexity (homogeneity-

heterogeneity, concentration-dispersion) and dynamism (stability-instability, turbulence).

The environment has also been described in terms of stability. An unstable environment can be defined as an environment with high levels of uncertainty, where decision makers are unable to obtain the information required to perform a task (Fredrickson & Mitchell, 1984).

A major theme within the SDM literature is concerned with the effect that environmental conditions have upon SDM. Table 6 presents a summary of the literature which has been identified regarding the environment which is contained within the strategic decision making domain.

Table 6 – Environmental Factors and SDM – Summary of Literature

Domain	Author(s) / Year	Research Methodology	Conclusions and Findings
Strategic Management	Hough & White (2003)	Quantitative	<ul style="list-style-type: none"> Results indicated that environmental dynamism moderates the relationship between rational-comprehensive decision making and decision quality.
	Dean & Sharfman (1996)	Quantitative	<ul style="list-style-type: none"> No support found for the hypothesis that environmental instability will moderate the relationship between procedural rationality and decision-making effectiveness; this relationship will be stronger in unstable environments than in stable ones.
	Goll & Rasheed (1997)	Quantitative	<ul style="list-style-type: none"> Environmental munificence and dynamism moderate the relationship between strategic decision making rationality and performance.
	Grant (2003)	Qualitative	<ul style="list-style-type: none"> Due to environmental turbulence, strategic planning is less concerned with making strategic decisions and more a mechanism for control.
	Bourgeois & Eisenhardt (1988)	Qualitative	<ul style="list-style-type: none"> Successful firms in high velocity environments balanced a careful step-by-step SDM process with quick decision execution. Successful firms in high velocity environments were associated with a decisive CEO and a risk seeking, innovative top management team.
	Eisenhardt (1989)	Qualitative	<ul style="list-style-type: none"> Fast decisions lead to superior performance in high-velocity environments. Fast decision makers in high-velocity environments develop more strategic alternatives, and integrate tactical plans with strategic decisions.
	Rajagopalan et al (1993)	Conceptual	<ul style="list-style-type: none"> Research needs to focus upon environmental complexity and munificence to further understanding of SDM and the environment.

Hough & White (2003) investigated the role of environmental dynamism (defined in their study as rapidly changing technology and shifting competition) as a contingent predictor of the relationship between rational-comprehensive strategic decision making and firm level performance. The authors found that rational-comprehensive strategic decision making, characterised by exhaustive and systematic gathering and analysis of information, was of little benefit to decision makers. Hough & White (2003, pg. 486) state that rational SDM may “negatively impact performance...furthermore, the frequent opportunities provided by the rapid pace of the dynamic environment may diminish the need to ensure that each decision is fully rational.” In a similar study, Dean & Sharfman (1996) could not find support for their hypothesis that environmental instability moderates the relationship between procedural rationality and decision effectiveness. The authors could not find support for the theory that a rational form of SDM has a stronger relationship with performance under unstable environmental conditions.

Environmental munificence, an “environment’s ability to support sustained growth of an organization” (Goll & Rasheed, 1997, p.585) and environmental dynamism, where data is unavailable, relationships are not obvious and the future is unpredictable (Goll & Rasheed, 1997) both moderate the relationship between rationality and performance. Rationality was measured using a 5 point Likert scale featuring items including; whether a systematic search for opportunities and problems is conducted and whether costs and benefits are systematically considered. Goll & Rasheed (1997, p.584) state that environmental dynamism “may require the firm to employ greater rationality in its analysis in order to understand the numerous environmental elements and their interconnectedness.” The authors also posit that decision makers have a greater tendency to utilise heuristics and cognitive biases under uncertain

environmental conditions, which can result in restricting the range of alternatives considered and the information used.

Grant (2003, p.515) states that due to environmental turbulence (uncertain and unstable environments) “strategic planning has become less about strategic decision making and more a mechanism for coordination and performance managing.” Bourgeois & Eisenhardt (1988) studied strategic decision processes in high velocity environments. The authors characterise a high velocity environment as being one where “the rate of change is so extreme that information is often of questionable accuracy and is quickly obsolete.” (Bourgeois & Eisenhardt, 1988, p.816). The authors selected the microcomputer industry for a case study approach and found that successful firms balanced a careful approach (using an incremental step-by-step process) with quick decision execution. The findings also highlight the importance of a decisive CEO and powerful top management team who seek risk and are innovative.

It is clear from this body of literature that the environment has a significant impact upon SDM, as it can necessitate the rationality and comprehensiveness of SDM (Hough & White, 2003). Rajagopalan et al (1993, p.358) state that “most previous studies have focussed on one aspect of the environment, namely, uncertainty or rate of change. However, there are two other critical aspects of a firm’s operating environment, namely, complexity (the number of elements and their interconnectedness), and munificence (the resource support provided by the environment) which have received relatively little attention.”

2.1.4.2 Organisational Structure

A body of literature exists which examines the relationship between organisational structure and strategic decision making (Rajagopalan et al, 1993). Organisational structure is defined as “the enduring allocation of work roles and administrative mechanisms that allow organisations to conduct, coordinate, and control their work activities.” (Jackson & Morgan, 1982, p.81). Table 7 presents a summary of the literature which has been identified, regarding organisational structure and SDM.

Table 7 – Organisational Structure – Summary of SDM Literature

Domain	Author(s) / Year	Research Methodology	Conclusions and Findings
Strategic Management	Blankenship & Miles (1968)	Quantitative	<ul style="list-style-type: none"> Hierarchical position determines decision behaviour (in terms of freedom from superiors and reliance upon subordinates).
	Miles et al (1978)	Conceptual	<ul style="list-style-type: none"> Typology of strategic orientations (Defenders, Analysers, and Prospectors) each with a different configuration of organisation structure and strategic orientation.
	Bobbitt & Ford (1980)	Conceptual	<ul style="list-style-type: none"> An organisation’s structure is a result of an interaction of the decision maker’s cognitive and motivational orientations, transformation strategies, and the organisation’s context.
	Fredrickson (1986)	Conceptual	<ul style="list-style-type: none"> Describes three structural types (Simple Structure, Machine Bureaucracy, and Professional Bureaucracy), and the SDM process associates with each type.
	Miller (1987)	Quantitative	<ul style="list-style-type: none"> Structural formalisation and integration are related to rationality in decision making.
	Covin et al (2001)	Quantitative	<ul style="list-style-type: none"> In high-tech industries, intuitive decision making is more positively related to performance, when coupled with an organic organisational structure (as opposed to a mechanistic structure).
	Davis et al (2009)	Quantitative	<ul style="list-style-type: none"> Too much structure is preferable to too little structure in dynamic environments.

Blankenship & Miles (1968) studied the association between hierarchical position, organisation size and span of control and five dimensions of managerial decision behaviour (perceived influence on superiors, autonomy from superiors, reliance on subordinates, personal initiation, and final choice – i.e. determining which course of action to pursue). The authors found that hierarchical position was the most important determinant of the decision behaviour that a manager reports for the decisions studied. The authors state that “upper-level managers not only claim greater freedom from their superiors...they also show a stronger pattern of reliance on their subordinates; that is, they tend to involve their subordinates in the decision making process to a greater degree than managers at lower levels.” (Blankenship & Miles, 1968, p.119).

Miles, Snow, Meyer & Coleman (1978) propose a theoretical framework that deals with alternative ways in which organisations define their strategy and construct mechanisms (structure and processes) to pursue these strategies. Miles et al (1978) present a typology of strategic orientations: Defenders, Analysers and Prospectors. Defenders are characterised as focusing upon sealing off a portion of the total market in order to create a stable domain. This is achieved by producing a narrow range of products targeted at a narrow market segment. Competitive pricing and high quality products are utilised to prevent competitors from entering their chosen market segments. Miles et al (1978) describe Defenders as having mechanistic organisational structures whereby top management is heavily dominated by cost control specialists. Control is centralised and communication takes place through formal hierarchical channels. Limited scanning of the environment for opportunities occurs and planning behaviour is focussed around cost and efficiency. Prospectors are effectively the polar opposite of Defenders. Miles et al (1978, p.551) state that “the Prospector’s prime capability is that of finding and exploiting new product and marketing opportunities.” Due to

the flexibility required by such organisations, Prospectors are characterised as possessing organic organisational structures, with decentralised units and projects. The top management is dominated by marketing and R&D specialists. A low degree of formalisation, decentralised control, and lateral communication also feature amongst this type of organisation. Analysers are a balance between Defenders and Prospectors. Miles et al (1978, p.555) define the Analysers' objectives as being "how to locate and exploit new product and market opportunities while simultaneously maintaining a firm core of traditional products and customers." The organisational structure associated with Analysers is the matrix, with heads of key functional units united with product and marketing managers to "form a balanced coalition similar to both the Defender and Prospector." (Miles et al, 1978, p.555). The authors also posit that a fourth type of organisation exists, labelled Reactors. Reactors' management fail to shape the organisation's structure and process to fit their chosen strategy and this ultimately contributes to the failure of this type of organisation. The typology presented by Miles et al (1978) demonstrates how organisations adapt to changing environmental conditions through managers being able to implement new organisational forms and control the people within the organisation.

Bobbitt & Ford (1980) focus upon how the decision maker's choice acts as a determinant of organisational structure. Bobbit & Ford (1980, p.13) criticise the strategy-structure literature and state that "there is conflicting evidence regarding the relationship between an organisation's environment, structure and effectiveness." The authors go on to state that "the majority of research using structure-contingency models has been static, cross-sectional, and bivariate." (Bobbitt & Ford, 1980, p.14). The authors present a conceptual paper, which posits that an organisation's structure is the result of an interaction of the decision maker's cognitive and motivational orientations, transformation strategies, and the organisation's

context. A decision maker's cognitive orientation is thought to influence how a decision maker perceives the discrepancy between an initial state and a desired state because cognitive orientation affects decision makers' information processing capabilities, systems for organising information and observation and problem solving. Furthermore, motivational orientation also affects the decision maker's desire to reduce discrepancies (between an initial state and a desired state) which will cause the decision maker to take action. Bobbit & Ford (1980) acknowledge that decision makers do not have unlimited freedom in their choices in relation to organisational structure and these choices will be limited by factors such as the current structure, the existing organisational members (whether they are qualified and willing to act in new roles) and contingency factors such as technology and the environment.

Fredrickson (1986) suggests that the characteristics of an organisation's strategic decision process are affected by its structure. Fredrickson (1986) describes three structural types (Simple Structure, Machine Bureaucracy, and Professional Bureaucracy), and outlines the pattern of strategic decision processes associated with each structural type. The Simple Structure is dominated by centralisation and "has little or no technical or administrative staff, little differentiation between units, a 'loose' division of labour, and a very small managerial hierarchy." (Fredrickson, 1986, p.291). Due to the concentration of power and knowledge, the responsibility for initiating responses to problems and opportunities rests with the CEO. Such a structure also reduces bargaining in the SDM process (Fredrickson, 1986). However, the success or failure of the SDM process can be directly attributed to the CEO because his/her cognitive limitations are the primary constraint. The Machine Bureaucracy is "a structure that relies on the standardisation of work." (Fredrickson, 1986, p.292). The Machine Bureaucracy has very formalised procedures. As such the SDM process "will be initiated only when the condition of some formally monitored variables indicates a need for

action.” (Fredrickson, 1986, p.292). Furthermore, SDM will be focused around achieving a precise goal. Finally, the Professional Bureaucracy utilises highly skilled professionals who have control of their own work. As such the organisational structure is decentralised.

Fredrickson (1986, p.293) highlights the risk that “strategic problems or opportunities may go unrecognised or ignored because members’ interests are highly specialised, and their perceptions parochial.” Such organisational structures are also characterised by political bargaining, where members attempt to apply solutions from their individual specialisms. Fredrickson, 1986 also acknowledges the relevance of identifying the relevant unit of analysis for such research. Fredrickson (1986, p.294) states that “a firm that is highly centralised is likely to have a strategic decision process that is best understood by using an individual units of analysis, while an organisational perspective sheds light on the same processes in a firm that is dominated by formalisation.” Fredrickson’s (1986) conceptual work highlights that structure is not simply a tool for implementing strategy, rather, it has a deterministic effect of its own upon SDM.

Miller (1987) states that organisational structure and SDM processes are highly interdependent and must be complementary to ensure organisational performance. In an empirical study of 97 SMEs, Miller (1987) showed that structural formalisation (the use of formal procedures and job descriptions) and integration (e.g. task forces and coordinative committees) were related to levels of interaction (political and social processes) and proactiveness (willingness to take risks and assertiveness) among decision makers and to four aspects of rationality in decision making: analysis of decisions, planning, systematic scanning of environments, and explicitness of strategies. Furthermore, Miller (1987) found that centralisation of authority was related to planning, risk taking, and consensus building. The

results of Miller's (1987) study emphasises the importance of complementarity among elements of structure and SDM.

Covin, Slevin & Heeley (2001) describe a three way relationship between decision making style, organisational structure and environmental technological sophistication. Covin et al's (2001) empirical research demonstrated that different combinations of style and structure predict firm financial performance in high-tech and low-tech environments. Covin et al (2001) state that decision making style typologies recognise how decisions are made, and suggest that decision making style can be conceptualised by a key dimension: Intuitive to technocratic. Intuitive-experience decision making style is influenced by decision makers gut feelings. A Technocratic decision style utilises quantitative analysis and is systematic and rational. The authors found support for the hypothesis that in high-tech industries, intuitive-experience based decision making styles are more positively related to organisational performance with organic rather than mechanistic structures. Covin et al (2001) also found that in low-tech industries, technocratic decision making styles are more positively related to performance among firms with organic than mechanistic structures. These results support the notion that "how the firm configures its internal attributes in consideration of its external environment" (Covin et al, 2001, p.62) has important implications for organisational performance.

Davis, Eisenhardt & Bingham (2009) use computational and mathematical modelling to explore the balance between too little and too much structure, which is affected by a trade off between efficiency and flexibility in dynamic environments (environments with velocity, complexity, ambiguity and unpredictability). Davis et al (2009) contend that in dynamic

environments, organisations run the risk of having too much structure, and thus being too constrained and lacking flexibility, or; having too little structure and thus lacking sufficient guidance to generate suitable behaviours efficiently. Davis et al (2009, p.413) state that “it is better to err on the side of too much structure.” Furthermore, the dimensions of environmental dynamism (velocity, complexity, ambiguity and unpredictability) have “unique effects on performance. Increasing unpredictability decreases optimal structure and narrows its range from a wide to a narrow set of effective strategies...a strategy of simple rules, which combines improvisation with low-to moderately structured rules to execute a variety of opportunities is viable in many environments.” (Davis et al, 2009, p.413).

Organisational structure is likely to influence, and be influenced by, the SDM process. The review of the SDM and organisational structure literature indicates that the environment also plays a significant role in moderating the relationship between structure and SDM.

Furthermore, the decision-maker him (her) self is also likely to play an important role in determining the structure of the organisation through the choices that he (she) makes (Bobbitt & Ford, 1980).

From this review of the SDM literature which has addressed the effects of organisational structure, several gaps in understanding become apparent. Firstly, there is a lack of empirical research which explains the effect of organisational structure upon the relationship between cognitive style and SDM outcomes (Covin et al, 2001). Secondly, from the work of Miles et al (1978), Sharfman & Dean (1997) and Davis et al (2009) it can be hypothesised that organisational structure will affect the extent to which SDM is comprehensive and flexible, but empirical evidence is again lacking in order to support the precise nature of this

hypothesised relationship. Finally, Covin et al (2001) and Davis et al (2009) identify that organisational structure may influence SDM outcomes (such as strategic flexibility) which is in itself a significant gap in theory.

2.1.4.3 Decision Context

Another factor which has been identified within the strategic management literature as having an effect upon SDM is the context of the decision. Papadikis, Lioukas & Chambers (1998) found that the perceived magnitude of the impact of a decision was among the strongest explanatory variables in decision making behaviour. The authors also found that rationality and comprehensiveness in strategic decision making was associated with performance, which is at odds with the afore mentioned studies by Hough & White (2003) and Dean & Sharfman (1996). Schneider & De Meyer (1991) state that internal organisational context will shape strategic decision processes, whereas as Pettigrew (1990) believed the nature of the problem influences the strategic decision making process. Sutcliffe & McNamara (2001) present evidence which suggests that decision makers are more likely to use a prescribed (a standardised firm-wide) approach to reaching a decision, when the decision is important (decisions which involve the commitment of substantial resources and have an unknown target). However, the study also found that whilst prescribed practices for created stability in decisions, it appeared to negatively affect future judgments. This suggests that decision makers may become complacent when relying upon prescribed decision making practices (Sutcliffe & McNamara, 2001).

Dutton & Jackson (1987) hypothesise that labelling an issue as either a threat or an opportunity affects both subsequent information processing and also the motivations of key decision makers (referred to as a framing bias in the strategic management and social-psychology literature). An opportunity, where the decision maker perceives a gain to be likely and that they have a high degree of control over the situation is thought to induce high levels of motivation and participation in the decision process. By contrast, a threat, where a negative situation in which a loss is likely and the decision maker has little control, is likely to induce low levels of motivation and participation in the decision process. No empirical research was conducted in order to test the hypotheses; however, how the decision situation is framed is accepted by researchers to affect decision maker's behaviour (e.g. De Bruin, Fischhoff & Parker, 2007; Kahneman & Tversky, 1979; Qualls & Puto, 1989). This thesis is supported by research investigating the relationship between poor organizational performance and risk taking in decision making (Singh, 1986). Singh (1986) found that good organizational performance was also related to low levels of risk taking. This supports the assertion by Kahneman & Tversky (1979) who state that decision makers have a greater propensity to take risk when a possible loss is emphasised, whereas when a possible gain is emphasised, decision makers become more risk averse. Fredrickson (1985) studied the effects of when a strategic decision taken in response to a threat and an opportunity, is made when a firm is performing well compared to when a firm is performing badly. The results indicate that relatively inexperienced managers varied the decision process according to these two factors; however, experienced executives did not vary their decision process. As such, decision motive and performance level were demonstrated to be contextual variables that can have a significant effect on the way strategic decisions are made. The senior executives were found to draw upon both rational and intuitive processes, whereas the relatively inexperienced managers were found to advise a more comprehensive decision process and

had a greater tendency; (i) to bring in outsiders; (ii) show concern for consistency among decisions and; (iii) the range of outsiders contacted.

Rajagopalan et al (1993) identified studies which had found SDM processes to be influenced by degree of criticalness of the decision, impetus, decision motive, urgency and frequency of occurrence. Rajagopalan et al (1993, p.366) criticise this stream of SDM research and state that “it is difficult to draw generalizable conclusions...little consensus exists regarding the definition and operationalization of important decision specific factors...little or no attempt to satisfy the requirements of construct validity or reliability (exists) (and) very few studies have controlled for or simultaneously examined the influence of environmental and organizational factors.” As already mentioned, given that theory development within the SDM domain of literature has slowed since the mid 1990s, it is unsurprising that Rajagopalan et al’s (1993) criticisms have not been addressed. Empirical research which can simultaneously address organisational and environmental factors in SDM has the potential to make a significant contribution to theory.

2.1.5 SDM Characteristics

The SDM literature features a body of research which has explored the characteristics of SDM. These characteristics include: (i) comprehensiveness; (ii) flexibility, and; (iii) political. These SDM characteristics are now discussed in the following sections.

2.1.5.1 Comprehensiveness

Fredrickson & Mitchell (1984, pg. 399) define strategic decision comprehensiveness as “the extent to which organisations attempt to be exhaustive or inclusive in making and integrating strategic decisions.” The authors contend that strategic decision comprehensiveness is a key measure of the extent to which an organisation’s SDM process is reflective of the rational model of SDM. Janis & Mann (1977) state that a comprehensive decision making process is characterised by: (1) Generating a wide range of alternatives; (2) Determining a wide range of objectives; (3) Carefully appraising the upside and downside of various consequences; (4) Intense information search activity for each alternative action; (5) Objective evaluation of information; (6) re-examination of upside and downside potential; and (7) Making detailed plans, including possible contingency plans.

Fredrickson (1984) found a positive relationship between strategic decision comprehensiveness and organisational performance in a stable environment. An unstable environment is one in which the information required to perform a task is not available, whereas in a stable environment it is more likely that “critical decision variables can be identified and allows theory to be developed regarding the relationships among those variables and the organization” (Fredrickson, 1984, p.460). Fredrickson (1984, p.460) concludes by stating that “it must be recognised that individuals, not organisations, make and integrate strategic decisions. Therefore, to understand the comprehensiveness construct as an organisational-level phenomenon, one must understand what it means for individuals’ decision making behaviour.” Indeed, the strategic decision comprehensiveness construct has received criticism within the SDM literature, notably that it ignores the cost of obtaining information as well as assuming that the relevant information will be available (Braybrooke

& Lindblom, 1970). Furthermore, the rational model of SDM, with which comprehensiveness is synonymous, ignores decision maker's cognitive limitations (Schwenk, 1984).

2.1.5.2 Flexibility

Sharfman & Dean (1997) postulate that the strategic decision making process itself must be flexible, in order for the organisation to be flexible enough to adapt. The authors utilised measures of openness (the extent to which decision makers are open to new ideas) and recursiveness (re-examination of assumptions and re-cycling to earlier stages of the decision making process) in order to capture the flexibility construct. As such, flexibility in SDM should be considered as a different concept to strategic flexibility (as discussed in section 2.1.6.1). Sharfman & Dean (1997) present findings from a study of 57 strategic decisions in 25 companies, showing that three contextual antecedent factors influence flexibility in strategic decision making: competitive threat (intense competition and flat or declining demand), slack (resources kept by an organisation above and beyond what is needed to meet ongoing commitments), and uncertainty (complex and unclear problems). The results indicate that managers appear to be more flexible (recursive and open) when decisions are uncertain. However, as the authors state "in the very conditions where managers need the most flexibility (high competitive threat and low slack), they are least flexible." (Sharfman & Dean, 1997, pg. 192).

Coombe & Greenley (2004) present a framework which details how the beliefs of decision makers influence their capabilities to generate hybrid forms of strategic flexibility at the

cognitive level. Implicit in their paper is the assumption that for strategic flexibility to exist at the organisation level, it must first exist at the decision maker level. The authors could be criticised for assuming that the existence of flexibility at the individual unit of analysis will necessarily translate to flexibility at the organisational level (Indik, 1968). Such an assumption neglects to consider a wide range of factors that impact upon strategic decision making (such as the environment, power and politics and decision context). However, the cognitive style construct has been conceptualised as a group level phenomenon (Leonard, Beauvais & Scholl, 2005). Leonard et al (2005) state that the decision making group can have a dominant cognitive style. The decision making group's cognitive style may therefore determine the existence or otherwise of strategic flexibility at the organisational level.

Nutt (1993) explored how flexible strategic decision styles, defined as “the number and kinds of accessible modes of understanding” (Nutt, 1993, pg. 695), influence the choices of senior decision makers. Nutt found that senior decision makers with a flexible style were aggressive decision makers with a high tolerance for ambiguity and uncertainty. Nutt also reported that as the number of modes of understanding available to a decision maker decreased, conservatism increased.

From this body of literature it is apparent that a gap in knowledge exists as it is unclear as to how cognitive style impacts upon SDM, and how this ultimately effects SDM outcomes, such as strategic flexibility.

2.1.5.3 Political

Eisenhardt & Zbaracki (1992, pg. 23) state that “the view that organizations are political systems has been supported by several colourful case studies.” Politics can be defined as “observable, but often covert, actions by which people enhance their power to influence a decision.” (Eisenhardt & Zbaracki, 1992, pg. 26). The authors cite coalitions, lobbying, and control of agendas as examples of political behaviours. Eisenhardt & Bourgeois (1988) found that politics were prevalent when the distribution of power was uneven, and also that effective firms were associated with low levels of organisation politics. Eisenhardt & Zbaracki (1992) state that power wins the battle of choice in SDM. Dean & Sharfman (1993) suggest however, that theory has overplayed the level of politics within organisations. They posit that trust and the importance of a decision mitigate political behaviours.

Competing forces of consensus building and dissent both impact upon the SDM process (Dooley & Fryxell, 1999). A degree of dissent, which is defined as “divergence in the opinions of team members” (Dooley & Fryxell, 1999, p.389) is considered positive in SDM, as it will result in invalid assumptions being challenged and groupthink being neutralised. However successful implementation of strategic decisions is believed to rest upon building consensus between team members (Dooley & Fryxell, 1999). Therefore, in a study of 86 strategic decision making teams in US hospitals the authors found that perceptions of loyalty within teams strengthen the relationship between dissent and decision quality. The authors attribute this to the fact that “loyalty facilitates the constructive processing of dissenting opinions” (Dooley & Fryxell, 1999, p.398). Furthermore, the study indicates that perceptions of within-team competence strengthen the relationship between dissent and decision commitment. The authors attribute this to the fact that “in the presence of competence,

dissent promotes a climate in which specific concerns are resolved that might otherwise engender scepticism and anaemic implementation” (Dooley & Fryxell, 1999, p.398). The effects of conflict in strategic decision making were also studied by Amason (1996), whom examined conflict’s effects upon strategic decision quality, consensus, and affective acceptance. Cognitive conflict, defined as “perceptual diversity...over how to accomplish an organization’s objectives” (Amason, 1996, p.127) was found to contribute to decision quality because it synthesises conflicting and divergent perspectives of decision makers and is “generally superior to the individual perspectives themselves.” (Amason, 1996, p.127). Furthermore, cognitive conflict improves decision makers’ commitment and affective acceptance of decisions owing to the sincere consideration and debate given to the inputs of decision makers (Korsgaard, Schweiger & Sapienza, 1995).

2.1.6 SDM Outcomes

The SDM literature feature a body of research which has sought to develop theory in respect of investigating the outcomes of SDM. These can be categorised as: (i) strategic flexibility; (ii) speed, and; (iii) effectiveness. These SDM outcomes are now discussed in the following sections.

2.1.6.1 Strategic Flexibility

SDM has a profound influence upon strategic flexibility because “for strategic flexibility to exist at the level of the firm, decision makers themselves must possess capabilities for strategic flexibility.” (Coombe & Greenley, 2004, p.1458). Although broadly related, strategic flexibility is different to flexibility within the SDM process (as discussed as an SDM

characteristic in section 2.1.5.2). Strategic flexibility (as an outcome of SDM) is defined as “the extent to which new and alternative decisions are generated and considered in strategic planning, allowing for organisational change and adaptation to environmental turbulence” (Coombe & Greenley, 2004). Environmental turbulence creates the need for organisations to attempt to foster strategic flexibility to enable them to adapt and change in order to keep pace with the environment (Evans, 1991; Rudd et al, 2008). Hence, strategic flexibility is therefore an antecedent of strategic adaptation, as it ensures that organisations are better prepared to respond and adapt to environmental turbulence (Rudd et al 2008). Strategic adaptation is defined as “the making of appropriate adjustments to the business and its strategic focus” (Schindehutte & Morris, 2001, p.84).

The extant strategic flexibility literature has adopted a resource based perspective, arguing that this firm resource can offer a sustainable competitive advantage (Barney, 1991) through its inimitability (Coombe & Greenley, 2004). Coombe & Greenley (2004) state that strategic flexibility is operationalised as either: (i) the flexible manoeuvre approach (e.g. Rudd et al, 2008), which is a firm level view; (ii) the flexible process approach (e.g. Sharfman & Dean, 1997) which examines the decision making process rather than the results, and; (iii) the flexible cognitive style approach (e.g. Nutt, 1993) which adopts a perspective that some decision makers may have a cognitive style that means they are more or less flexible than other decision makers. Coombe & Greenley (2004) assert that capabilities for strategic flexibility are inextricably linked to cognitive style and information processing, a view which is echoed by Sharfman & Dean (1997) who state that flexibility is constrained by management’s mental barriers or cognitive limitations. Sharfman & Dean (1997) postulate that the strategic decision making process itself must be flexible, in order for the organisation to be flexible enough to adapt.

2.1.6.2 Speed

Eisenhardt & Bourgeois (1988) highlighted that an association existed between firm performance and speedy decision making. Other studies have found that speed and performance are associated, but only in high-velocity environments (Judge & Miller, 1991). Wally & Baum (1994), drawing upon data from 151 firms, found that CEO's cognitive ability, use of intuition, tolerance for risk, and propensity to act all associated positively with speedy decisions. The authors also found that a centralised organisational structure was positively associated with decision pace. Wally & Baum (1994, pg. 948) state that "although fast decisions may not necessarily be better decisions, speedy decision making also need not diminish the quality of outcomes. " Accurate decisions may not be of value if they are mistimed. (Smith, Grimm, Gannon & Chen, 1991).

Eisenhardt (1989) found that fast strategic decisions actually use more information than slow decisions, and also develop more alternatives. The inductive study of 8 microcomputer firms identified that speedy decision making was associated with more, not fewer strategic alternatives. This contradicts the work of Fredrickson & Mitchell (1984), whom found that comprehensive SDM (generating a number of strategic alternatives) slowed SDM. Conflict resolution and integration between strategic decisions and tactical plans were highlighted to be of critical importance to strategic decision speed. This is attributed to the fact that integration enables decision makers to analyse the viability of an alternative quickly and also because it allows decision makers to cope with the ambiguity inherent in strategic decisions. Eisenhardt (1989) also states that fast decisions result in superior organizational performance, whilst acknowledging that evidence to support this assertion is tenuous. Eisenhardt (1989) associates speedy SDM with organisational performance due to the fact that "in fast paced

environments, opportunities move quickly, and once a firm is behind, it is difficult to catch up.” (Eisenhardt, 1989, p.570). The study also highlights the cognitive and personal nature of SDM; “executives making fast decisions accelerate their cognitive processing...the result is a deep personal knowledge of the enterprise that allows them to access and interpret information rapidly when major decisions arise...executives accelerate their cognitive processing by using efficient problem solving strategies that maximise information and analysis within the time constraints.” (Eisenhardt, 1989, p.571).

2.1.6.3 Strategic Decision Effectiveness

Dean & Sharfman (1996, pg. 368) define strategic decision effectiveness as “the extent to which they (strategic decisions) result in desired outcomes”. In their study of 52 decisions, in 24 companies, Dean & Sharfman (1996) found that decision making processes are related to decision success. Specifically, the authors found that managers whom adopted a rational SDM process, “those who collected more information and used analytical techniques” (Dean & Sharfman, 1996, pg. 389) were more effective than those who did not. Eisenhardt & Bourgeois (1988) found that effective firms were associated with low levels of organisation politics. Elbanna & Child (2007) found that rational and political processes influence strategic decision effectiveness, although the authors’ definition of effectiveness is not explicitly stated, nor is its measurement articulated in their paper.

Whilst considerable empirical research has been conducted at the individual level, linking cognitive processes to outcomes (e.g. Nutt, 1993), Dean & Sharfman (1996, pg. 369) state

“the link between strategic decision process and effectiveness has not yet however, been so convincingly demonstrated.”

Whilst there exists a body of literature concerning what may make SDM effective, these articles are lacking in clear descriptions of what effectiveness means with regards to SDM (e.g. Elbanna & Child, 2007; Dyson & Foster, 1980). Attempts to develop effectiveness theory are evident within the strategic planning literature (e.g. Dyson & Foster, 1983).

Whilst a full review of the strategic planning effectiveness literature is beyond the scope of this literature review, it is worthwhile considering that the development of strategic planning effectiveness theory appears to suffer from the same deficiencies as does the SDM effectiveness literature: (i) definitional; (ii) measurement of effectiveness using self-report measures, resulting in personal bias, and; (iii) the usefulness of an organisation which is effective at strategic planning and decision making, yet fails to achieve financial and non financial targets would appear to be of limited benefit (Rudd, 2005). Therefore, further conceptual development is required in order to define and operationalise SDM effectiveness as an outcome of SDM.

2.1.7 Summary of Strategic Management Domain of Literature

Section 2.1 has reviewed the major themes contained within the strategic management literature relating to strategic decision making. Strategic decision making has been characterised as a process. Furthermore, the topics contained within the SDM literature include: (i) individual level variables (cognitive style and cognitive biases); (ii) SDM characteristics (flexibility, comprehensiveness, and political); (iii) SDM outcomes (strategic

flexibility, effectiveness, and speed), and; (iv) contextual antecedents (environmental factors, organisational structure, and decision context). Section 2.1 has also highlighted multiple significant gaps in theory which exist within the SDM domain of literature. These gaps, broadly defined, include: the effects of cognitive style upon SDM characteristics and outcomes; how SDM characteristics themselves affect SDM outcomes; and the effect of the environment and organisational structure upon the afore mentioned relationships. Table 8 shows the themes which have been identified in this review of the SDM literature.

Table 8 – Themes within the SDM Domain of Literature

Themes	Strategic Decision Making Domain of Literature	Individual level (I), Group Level (G) or Organisational Level (O)
SDM & DM Processes and Typologies	Blankenship & Miles (1968), Mintzberg et al (1976), Armstrong (1982), Schwenk (1984), Hitt & Tyler (1991), Eisenhardt & Zbaracki (1992), Wally & Baum (1994), Shrivastava & Grant (1985; 1995), Krabaunrat & Phelps (1998), Nutt (1998), Schramm-Nielsen (2001), Hart 1992, Hickson et al (1986)	I, G, O
Cognitive Style	Kiesler & Sproull (1982), Hickson et al (1982), Shrivastava & Grant (1985), Lord & Maher (1990), Hitt & Tyler (1991), Hart (1992), Nutt (1993), Coombe & Greenley (2004), Hough & Ogilvie (2005), Dane & Pratt (2007), Henderson & Nutt (1980),	I, G
Cognitive Biases / Heuristics	Hodgkinson et al (1999, 2002), Schwenk (1984), Nutt (1998), Duhaime & Schwenk (1985)	I
Environmental Factors	Liao et al (2008), Dess & Beard (1984), Hough & White (2003), Dean & Sharfman (1996), Grant (2003), Goll & Rasheed (1997), Grant (2003), Bourgeois & Eisenhardt (1988), Eisenhardt (1989), Rajagopalan et al (1993)	I, O
Organisational Structure	Blankenship & Miles (1968), Miles et al (1978), Bobbit & Ford (1980), Fredrickson (1986), Miller (1987), Covin et al (2001), Davis et al (2009)	I, G, O
Politics	Eisenhardt & Zbaracki (1992), Eisenhardt & Bourgeois (1988), Dean & Sharfman (1993)	G, O
Decision Context	Papadikis et al (1998), Schneider & De Meyer (1991), Pettigrew (1990)	I, G,O
Strategic Decision Speed	Eisenhardt & Bourgeois (1988), Judge & Miller (1991), Wally & Baum (1994), Smith et al (1994)	I, G, O
Strategic Decision Comprehensiveness	Fredrickson & Mitchell (1984), Janis & Mann (1977), Braybrooke & Lindblom (1970), Schwenk (1984)	I, G, O
Strategic Decision Effectiveness	Dean & Sharfman (1996), Eisenhardt & Bourgeois (1988), Nutt (1993), Elbanna & Child (2007), Dyson & Foster (1980; 1983).	I, G, O
Flexibility and Strategic Flexibility	Coombe & Greenley (2004), Nutt (1993), Sharfman & Dean (1997)	I, G, O

2.2 Marketing Decision Making Domain of Literature

A body of literature exists pertaining to marketing decision making which has been published within the marketing and marketing research journals. A summary of the work published within this domain of literature is presented below.

2.2.1 The Marketing Decision Making Process

A focus of research within the marketing literature has been to characterise the decision making process and examine the factors which influence it. Indeed, the marketing decision making literature has to an extent addressed the criticisms of the normative SDM process models, which have been described as failing to acknowledge dynamic and turbulent environments (e.g. Mintzberg, 1990, 1993). Thus, conceptualisations of SDM processes can benefit from integrating the conceptualisations of marketing decision making processes. Greenley, Hooley & Saunders (2004) criticise normative marketing planning models for neglecting to include processes for addressing change and turbulence. Greenley et al (2004, p. 933) state that “adaptation is achieved through the process of flexibility in marketing planning decision making, which is the extent to which managers are willing to explore alternative and new decision-making options, with respect to objectives, strategies, tactics, implementation and control.” The authors propose a conceptualisation of how marketing planning decisions are made within a dynamic context. This conceptualisation utilises six management processes: (i) Proactive management, meaning how eager managers are to pursue opportunities. (ii) Competitive aggression, which refers to the willingness to challenge competitors intensely. (iii) Innovative management, which entails the fostering of innovative ideas for change in order to exploit opportunities. (iv) Organisational learning, which refers to the purposeful accumulation of knowledge. (v) Market orientation, referring

to an organisation-wide focus upon market intelligence. And (vi) Deploying slack resources, which are the means by which flexibility in marketing planning can be achieved. The authors do not provide empirical support for their propositions, and furthermore, the processes related to competitive aggression and organisational learning appear to be at odds with other research. Armstrong & Collopy (1996) found that competitor orientation was detrimental to performance. Furthermore, Sinkula (1994, p.43) states that “processing market information in the endeavour to learn is probably more about sense making than decision making.” The implication being that market information processing and organisational learning do not always involve decision making, and such activities may not necessarily therefore benefit the decision making process.

Jocumsen (2004) proposes a marketing decision making process model, drawing upon in-depth interviews and an analysis of 46 strategic marketing decisions from 32 small businesses. Jocumsen (2004) proposes that the model consists of three loosely defined steps or tasks (i) information gathering and search (e.g. marketing related research, information about the general environment); (ii) financial analyses and assessments (e.g. budgeting, investment appraisal); and (iii) internal matters (e.g. goal setting, personal and lifestyle considerations). These three steps may be performed non-sequentially, however must be preceded by decision initiation and followed by final commitment. Finally, Jocumsen (2004) states that the methods used in carrying out these steps or tasks can be classified as learned competencies, inherent competencies, internal networks and external networks. Jocumsen (2004, p. 670) also states that small business decision makers “make extensive use of gut feel and intuition...they do place much reliance upon past decision experiences, that they rely upon internal advice only to a limited extent and they do utilise advice from business associates much more than that from outside professionals.” Jocumsen clearly touches on

several of the themes identified within section 2.2.1 'cognitive biases' and 2.1.2 'Decision style'. Jocumensen (2004) however fails to define gut feel, intuition and a reliance upon past decisions, however these are concepts which feature prominently within both the strategic management and also psychology literature and are discussed more thoroughly within the critical literature synthesis section of this literature review (section 3).

Neill & Rose (2006) propose that high levels of organisational performance on all dimensions (customer, efficiency, and financial) is associated with a decision-making process which considers multiple dimensions of decision making including customers, competitors, product capabilities, and changes in the macro environment. Furthermore, decision makers engage in high levels of improvisation and make decisions quickly. This characterisation would appear consistent with the characterisations of SDM comprehensiveness, and SDM speed. Thus, the major tenet of the research is to empirically demonstrate that "organisational complexity is an organisational capability that enables more effective strategy making and produces superior firm performance." (Neill & Rose, 2006, p.1).

Menon, Bharadwaj, Adidam & Edison (1999) propose that an innovative culture is the fundamental antecedent of effective marketing strategy making. The authors define marketing strategy making as "a complex set of activities, processes, and routines involved in the design and execution of marketing plans." (Menon et al, 1999, p.21). An innovative culture is defined as "the extent to which there exists within an organisation an emphasis on inventiveness, openness to new ideas, and quick response decision making." (Menon et al, 1999, p.24). Again, the definition of innovative culture shares similarities with the SDM domain which has described SDM characteristics and outcomes (e.g. flexibility and speed)

Using data from 200 marketing-mix related decisions, the authors also find that situation analysis, comprehensiveness, emphasis on marketing assets and capabilities, cross-functional integration, communication quality, consensus commitment, and resource commitment are all fundamental components of marketing strategy making.

Other topics of relevance to the decision making process within the marketing literature include assessments of the environmental determinants of decision making uncertainty and participatory decision making. Achrol & Stern (1988) examine the environmental factors affecting decision making uncertainty, finding that four dimensions – diversity among customers (the degree of similarity or differentiation between elements of the population), dynamism (frequency of change in market forces), concentration (the extent to which output forces are controlled by few organisations), and capacity (the perceived favourableness or unfavourableness of demand conditions) all affect decision making uncertainty. The authors define decision making uncertainty as “(1) the adequacy of available information from all sources for making key decisions, (2) predictability of the consequences of these decisions...and (3) the degree of confidence of the decision maker when making these decisions.” (Achrol & Stern, 1988, p.37).

Vallaster & Koll (2002) criticise the extant decision making theory which focuses on the individual, as opposed to the group level. The authors state that efficient decision making depends upon shared cognitive structures within groups, and an approach to analyse these cognitive structures through the affective (e.g. identification with the group such as satisfaction, commitment, group attachment, role conflict) and communicative (e.g. communication competence, style of interaction) dimensions causing

convergence/divergence of individual cognitions is presented. The authors posit that group decisions arise from information exchange which results in knowledge creation, and that “communication enables the testing of hypotheses and, as a consequence, allows further development of individual’s mental models.” (Vallaster & Koll, 2002, p.41). Whilst the research furthers understanding of group decision making, it neglects to consider the individual differences in decision makers leadership styles, information processing styles and decision making styles which all have been shown to significantly affect decision making, and furthermore, it neglects to consider the role of power and politics in group decision making.

How cognitive style, organizational culture, and information use in responding and interpreting market situations was studied by White, Varadarajan & Dacin (2003). White et al (2003) found that the afore mentioned factors all affect the extent to which managers perceive a specific market situation to be one where they can control the outcomes of their decision. Furthermore, White et al (2003) suggest that the greater the extent that managers perceive that they can control a given situation, the more they appraise the situation as an opportunity, and the more that managers perceive a situation as an opportunity, the greater the magnitude of their response.

The marketing decision making literature shares many similarities with the SDM process literature, although appears to recognise the effects of environmental turbulence upon the process. Furthermore, flexibility, comprehensiveness and speed have all been acknowledged within the marketing domain of literature as being important characteristics of the marketing decision making process.

2.2.2 Cognitive Biases in Marketing Decision Making

The marketing literature explores the influence of cognitive biases upon marketing decision making. The effect of cognitive biases upon SDM has been examined within the SDM domain, however, an examination of the marketing decision making domain of literature reveals additional types of cognitive bias which have not been explored in such detail within the SDM domain.

Qualls & Puto (1989) hypothesise that organisational climate and attitude to risk affect the decision frame. The authors state that the decision frame is the “context associated with a given decision (which) affects the outcome of the decision process.” (Qualls & Puto, 1989, p. 179). Organisational climate is defined as “the set of perceptions held by individuals in an organisation that reflect the extent to which expectations of the organisation are defined.” (Qualls & Puto, 1989, p. 182). The authors found that organisational climate predicts decision frames. It is thought that decisions are framed from an initial reference point (e.g. a leader’s behaviour) and decision alternatives are evaluated based upon this reference point. The authors empirically demonstrated that perceptions of leaders and the presence (or absence) of role stress (conflict, responsibility and ambiguity) affect decision framing.

Mahajan (1992) conducted two experiments in order to investigate overconfidence in marketing management decisions. Overconfidence is defined as a situation where “individuals overestimate the likely occurrence of a set of events.” (Mahajan, 1992, p. 329). Mahajan (1992, p. 329) explains the relevance of this construct “in making marketing management predictions that are either strategic or tactical, managers are likely to underestimate the associated uncertainty...highly confident predictions are the ones that managers are most likely to act upon and commit resources to without pausing to consider

additional information.” Mahajan (1992) found that ‘humbling’ (i.e. unfavourable) feedback increases accuracy and lowers overconfidence in decision making. Additionally the results of the experiments indicated that overconfidence can be reduced by counterfactual reasoning, whereby experiment participants were required to explicitly generate reasons contrary to their initial decision. Finally, the results demonstrated that the ‘richness’ of experienced decision makers mental representations results in higher levels of overconfidence. Mahajan (1992, p.332) explains that experienced decision makers “rely on a host of irrelevant or weak cues that they perceive as being predictive in problem solving...novices in contrast, engage in more detailed processing.” Whilst the study provides novel insights on overconfidence and accuracy of predictions, the generalisability of the findings are restricted owing to the experimental research methodology utilising undergraduate students. The paper also fails to acknowledge the potential mitigating influence that group decision making may have on overconfidence effects.

Larreche & Moinpour (1983) investigated the concept of expertise in the context of judgement in marketing. The authors found that experts were able to provide better estimates than non-experts. Furthermore, experts identified by an external measure, as opposed to being self identified were found likely to provide better estimates.

Lee, Acito & Day (1987) utilise a behavioural simulation in a laboratory setting in order to examine decision makers’ evaluation and use of marketing research results. The authors found that marketing research which confirmed the prior beliefs of decision makers (termed ‘prior hypothesis bias’) tended to be rated more highly and used, whereas marketing research contrary to prior beliefs tended to be overlooked and evaluated as poor. The authors could

not however find strong support for their hypothesis that qualitative marketing research data would be favoured by decision makers owing to the fact that “people underutilise statistical summary data in favour of case study data in making judgments. This preference may be due to the greater vividness of case study data.” (Lee et al, 1987, p.187).

2.2.3 Information and Marketing Decision Making

Whilst the SDM domain of literature has clearly identified the importance of examining how decision makers process information (i.e. cognitive style), it has not explored in significant detail the types of information used by decision makers, and the effect that this has upon the decision process. Several studies within the marketing literature have however examined the use of information in marketing decision making.

Perkins & Rao (1990) studied the effect of managerial experience (measured by number of months of brand management experience by a manager) and decision programmability on managers' information use and decisions. The authors define programmed decisions as being “routine and structured with a well defined starting point, a clear goal, and standardized rules for reaching the goal.” (Perkins & Rao, 1990, p. 2). By contrast, non-programmable decisions are defined as “novel, not being amenable to processing by a pre-specified method and often requiring the decision maker to rely on general problem-solving abilities.” (Perkins & Rao, 1990, p. 2). The authors found that experience is an important determinant of managerial decision making behaviour for relatively un-programmed decisions. The authors state that the effects of experience are manifested in the adoption of ‘soft information’ (such

as internal information), the amount of information used and the decisions themselves (in that experienced managers were more conservative).

Glazer & Weiss (1993) study the relationship between information processing, marketing decisions and performance in turbulent markets through an experimental research design. The authors state that a turbulent market is one that displays “dramatic increases in the number of events that occur within a given period.” (Glazer & Weiss, 1993, p.509). The authors posit that successful performance is dependent upon the congruence between the level of marketplace turbulence and the information-processing style (how important participants considered it was to use current market information immediately) and associated decisions being adopted. Through a marketing simulation game, the authors demonstrated that formal planning leads to an underweighting of the time-sensitivity of marketplace information. This resulted in inferior performance compared to decision makers not engaging in formal planning. The authors state the implications of these findings to mean that “in turbulent information intensive environments, certain types of formal planning may, in fact, hinder rather than improve performance...this results from systematic biases that would appear to prevent decision makers from noticing changes in their environment and hence focussing on the ‘correct’ decisions.” (Glazer & Weiss, 1993, p.509).

Another focus within the marketing literature has been to consider the effects of information type on decision making. Specifically, Armstrong & Collopy (1996) hypothesise that managers are competitor orientated under certain conditions, and in particular when they readily have access to information about competitor’s performance. Furthermore, the authors argue that a competitor orientation is detrimental to performance. A laboratory study and a

longitudinal study confirmed both hypotheses, and firms with competitor-orientated objectives were less profitable and less likely to survive than those with objectives directly orientated around profits. The overriding implication from the study is that decision makers should utilise information orientated on the firm's performance as measured by profits as opposed to market share maximisation.

2.2.4 Summary of Marketing Decision Making Domain of Literature

Section 2.2 has reviewed the major themes contained within the marketing and decision making literature. In broad terms, these topics appear to cluster into three categories: (i) the marketing decision making processes; (ii) cognitive biases in marketing decision making, and; (iii) information and marketing decision making. The marketing domain has developed a dynamic perspective of decision making (Greenley, Hooley & Saunders, 2004). Indeed the marketing literature appears to emphasises the importance of flexibility (Coombe & Greenley, 2004; Greenley et al, 2004; Jocusmsen, 2004) and complexity (Neill & Rose, 2006) in the decision making process. Table 9 shows the themes which have been identified in this review of the marketing literature, as well as the SDM literature.

Table 9 – Themes within the SDM and Marketing Domains of Literature

Themes	Strategic Decision Making Domain of Literature	Marketing Decision Making Domain of Literature	Individual level (I), Group Level (G) or Organisational Level (O)
SDM & DM Processes and Typologies	Blankenship & Miles (1968), Mintzberg et al (1976), Armstrong (1982), Schwenk (1984), Hitt & Tyler (1991), Eisenhardt & Zbaracki (1992), Wally & Baum (1994), Shrivastava & Grant (1985; 1995), Krabaunrat & Phelps (1998), Nutt (1998), Schramm-Nielsen (2001), Hart 1992, Hickson et al (1986)	Greenley et al (2004), Armstrong & Collopy (1996), Sinkula (1994), Jocumsen (2004), Neill & Rose (2006), Menon et al (1999), Achrol & Stern (1988), Vallaster & Koll (2002)	I, G, O
Cognitive Style	Kiesler & Sproull (1982), Hickson et al (1982), Shrivastava & Grant (1985), Lord & Maher (1990), Hitt & Tyler (1991), Hart (1992), Nutt (1993), Coombe & Greenley (2004), Hough & Ogilvie (2005), Dane & Pratt (2007), Henderson & Nutt (1980),	-	I, G
Cognitive Biases / Heuristics	Hodgkinson et al (1999, 2002), Schwenk (1984), Nutt (1998), Duhaime & Schwenk (1985)	Qualls & Puto (1989), Mahajan (1992), Larreche & Moinpour (1983), Lee et al (1987)	I
Environmental Factors	Liao et al (2008), Dess & Beard (1984), Hough & White (2003), Dean & Sharfman (1996), Grant (2003), Goll & Rasheed (1997), Grant (2003), Bourgeois & Eisenhardt (1988), Eisenhardt (1989), Rajagopalan et al (1993)	-	I, O
Organisational Structure	Blankenship & Miles (1968), Miles et al (1978), Bobbit & Ford (1980), Fredrickson (1986), Miller (1987), Covin et al (2001), Davis et al (2009)	-	I, G, O
Politics	Eisenhardt & Zbaracki (1992), Eisenhardt & Bourgeois (1988), Dean & Sharfman (1993)	-	G, O
Decision Context	Papadikis et al (1998), Schneider & De Meyer (1991), Pettigrew (1990)	-	I, G, O

Strategic Decision Speed	Eisenhardt & Bourgeois (1988), Judge & Miller (1991), Wally & Baum (1994), Smith et al (1994)	-	I, G, O
Strategic Decision Comprehensiveness	Fredrickson & Mitchell (1984), Janis & Mann (1977), Braybrooke & Lindblom (1970), Schwenk (1984)	-	I, G, O
Strategic Decision Effectiveness	Dean & Sharfman (1996), Eisenhardt & Bourgeois (1988), Nutt (1993), Elbanna & Child (2007), Dyson & Foster (1980; 1983).	-	I, G, O
Flexibility and Strategic Flexibility	Coombe & Greenley (2004), Nutt (1993), Sharfman & Dean (1997)	-	I, G, O
Information and decision making	-	Perkins & Rao (1990), Glazer & Weiss (1993), Armstrong & Collopy (1996)	I, G, O

2.3 Organisational Behaviour Domain of Literature

A body of literature exists pertaining to organisational decision making which has been published within the organisational behaviour and human relations journals. A summary of the work published within this domain of literature is presented below.

2.3.1 Organisational Decision Making Processes

Similar to the SDM and marketing decision making domains of literature, the organisational behaviour decision making domain of literature has described decision making as being a process. However, the focus in the organisational behaviour domain of literature has been to explain and understand the role of employees in the process, and the motivational benefits associated with involvement in the DM process.

Sagie & Koslowsky (1994) found that employee participation in tactical rather than strategic decisions was a better predictor of an increase in change acceptance, work satisfaction, effectiveness, and time allotted to work. The authors state “the decreased level of ambiguity associated, according to theory, with tactical rather than strategic change decisions, led employees to expect and experience greater involvement in the first type of decision. Also employees found that participation in tactical rather than strategic decisions was more productive.” (Sagie & Koslowsky, 1994, p.45). Other research has focussed upon identifying the structure and content of decision making. Scott, Jordan & Yeatts (1992) conducted four studies and highlighted the diversity of choice behaviour. The authors posit that decision making processes should take into consideration the following variables: (i) the social unit making the decision; (ii) the social implications of the decision; (iii) the affect elicited by the choice process, and; (iv) the type of risk associated with the decision.

2.3.2 Cognitive Biases

The organisational behaviour literature explores the influence of cognitive biases upon organisational decision making. The effect of cognitive biases upon SDM has been examined within the SDM domain, however, an examination of the organisational behaviour decision making domain of literature reveals additional types of cognitive bias which have not been explored in such detail within the SDM domain.

Kim, Payne & Tan (2006) researched decision behaviour and its link to organisational adaptation. Specifically, the authors investigate how a decision maker’s “cognitive-affective environmental interpretation is an overlooked yet key element of the organisation’s

development and adaptation process.” (Kim et al, 2006, p.278). The main tenet of the authors’ argument is that rational cognitive processes interact with affective (i.e. emotional) states in order to develop perceptions. The authors conclude that organisational behaviours in the adaptation process depend upon decision maker’s cognitive-affective informational interpretation of both internal and external environmental stimuli. The authors argue, that under low levels of confidence (an affective response to environmental stimuli) decision makers may be more likely to imitate rivals adaptive actions, and under high levels of confidence greater heterogeneity may be discerned in decision maker’s behaviour.

Organisational Behaviour theory has also explored some of the cognitive biases already referred to within the strategic decision making and marketing decision making sections of this literature review. One such paper is a study by Drummond (1994) whom adopts a longitudinal case study approach to studying the cognitive bias, escalation. Escalation is defined as “a situation in which costs are incurred, negative feedback is received, where there is an opportunity to withdraw or to persist, but the consequences of withdrawal or persistence are uncertain.” (Drummond, 1994, p.592). Escalation can be attributed to four factors: (i) project factors (e.g. in long term projects such as construction contracts where substantial outlays have been made and recoument of costs is dependent upon project completion); (ii) psychological factors (e.g. persistence with a decision to signify to others that they were correct, information bias whereby decision makers seek out information that sustains belief); (iii) social factors (e.g. maintaining appearances and face saving) and; (iv) structural factors (e.g. if sub-contractors have been engaged and plant leased). Drummond (1994) found that structural and social pressures had the greatest impact upon the escalation bias, and that project and psychological factors were of secondary importance. Furthermore, Drummond (1994) identified powerlessness as an additional factor influencing escalation, which they

define as “where the capacity to effect change is non-existent.” (Drummond, 1994, p.604).

Other findings of significance include the prevalence of political influences, in so much as “escalation is influenced by latent political influences.” The findings should be considered in light of the fact that they are based on one case study, which was based upon a very specific context; a City Council Department.

2.3.3 Cognitive Style

A category of cognitive style which has been identified within the organisational behaviour literature is intuition. The concept of cognitive style has featured within the SDM domain of literature, however, the conceptualisation, measurement and predicted effects upon SDM are limited within this domain of literature. The organisational behaviour domain of literature has also acknowledged the importance of cognitive style in explaining decision making behaviour.

Khatri & Ng (2000, p.57) state “although intuitive processes are critical for effective strategic decision making, there is little in the way of applied research on the topic.” The authors attempt to address this gap in empirical research by examining the use of intuitive processes in the decision making processes of organisations within the US computer, banking and utilities industries. Intuition is defined within the article as “a synthetic psychological function in that it apprehends the totality of a given situation; it allows us to synthesise isolated bits of data and experiences into an integrated picture. It is a holistic perception of reality.” (Khatri & Ng, 2000, p.60). The authors also define the properties of intuition as being subconscious, complex (due to the balance of qualitative and quantitative factors it

embraces), quick, not an emotion and not biased. Furthermore, the authors state that intuition is part of all decisions. The authors found that the use of intuitive synthesis was positively associated with organisational performance in an unstable environment, but negatively so in a stable environment. The authors cite three principle reasons for these findings, because in an unstable environment there are: (i) time constraints on collection information; (ii) a substantial amount of information is required to deal with environmental instability; and; (iii) the information itself may be unreliable. This view is supported by Eisenhardt (1989) whom suggests that in high velocity environments, decisions need to taken swiftly and perhaps also without any suitable data or prior precedent. Khatri & Ng (2000) utilised a three item, seven point, Likert scale to measure the use of intuition in organisational decision making, which comprised: (i) the extent to which senior managers rely upon judgment in making important decisions; (ii) the emphasis placed by senior managers on past experience when making important decisions and; (iii) how often, in the absence of sufficient information, senior managers make important decisions based upon 'gut feel'.

Hunt, Krzystofiak, Meindl & Yousry (1989) utilised an experimental research design in order to test hypotheses on the relationship between an individual's cognitive style and decision making. Hunt et al (1989, p.438) define cognitive style as "how a person comes to grips with complex problems, both in terms of conscious strategies and unconscious habits." The authors conceptualise cognitive style as a dichotomy, being either 'analytic' or 'intuitive' (Hunt et al, 1989), and utilise the MBTI to measure cognitive style. The analytic individual "is seen as concentrating on detail and thus as breaking that which is observed into component parts. In contrast the intuitive individual comprehends the field as an integrated whole." (Hunt et al, 1989, p.438). Subjects in the experiment were confronted with a standardised decision task, and at each stage of the decision process the subjects were asked

to choose between a pair of advisors (differing in style) who offered advice about how to handle a strategic issue confronting the firm. The hypothesis that the subject would select the advisor expressing the most similar style to themselves was supported.

Ruble & Cosier (1990) investigated the effects of cognitive style and decision setting upon prediction accuracy. The authors define cognitive style as “individual differences in information processing” (Ruble & Cosier, 1990, p.283). Furthermore, they state that “similar terms have been used to refer to essentially the same construct (e.g. decision styles, problem solving styles).” (Ruble & Cosier, 1990, p.283). The authors contend that in order to advance knowledge of how cognitive style affects decision style, a contingency perspective is required in order to relate cognitive style to decision tasks and settings (Ruble & Cosier, 1990). The authors employed an experimental design, measuring cognitive style using the MBTI, and operationalising decision setting through a number of cues which were either financial (in order to induce analytical cognitive processes), or human resource (in order to induce intuitive cognitive processes). Ruble & Cosier (1990) found that decision setting affected prediction accuracy, however no main nor interaction effects of cognitive styles on performance were found.

2.3.4 Contingent Variables Affecting Decision Making

A review of the organisational decision making literature reveals three contingent variables which are considered to affect organisational decision making: power, politics, and culture. Whilst an examination of the effects of these variables upon SDM is beyond the scope of this research, their existence within the literature is acknowledged, and the major studies which have been identified are discussed within this section of the literature review.

A major area of interest within the organisational behaviour literature has been the influence of power and politics on organisational decision making. Bacharach, Bamberger & Mundell (1995) explore how power affects decision makers justification of decisions. The authors posit that less powerful managers make great use of tactical decision criteria to justify decisions. Tactical justification is a basis of criteria which implies stability and incremental change (Bacharach et al, 1995), whereas strategic logic of justification implies broad and comprehensive organisational change. The authors hypothesised that strategic bases of justification are more likely to be used by powerful managers in their decision making. Bacharach et al (1995) found however, limited support for their hypotheses, as power only explained a nominal variance in the adoption of either tactical or strategic bases of justification for decision making.

Darr & Johns (2004) examined politics at the group level, and tested for the effects of predictors of the development of politics. The study addresses criticism of previous empirical research into organisational politics which have sought to understand the antecedents and consequences of politics directed at the individual level of analysis. (Darr & Johns, 2004). The authors found that individual-level conflict emerged as a predictor of department-level politics. The authors state that “those experiencing high levels of role conflict are more likely to get into confrontations with colleagues” (Darr & Johns, 2004, p. 191). It could be argued however, that this individual level construct is likely to have a minimal effect upon the department level given Indik’s (1968) argument that variables at different levels are less strongly related than variables at the same level of analysis.

Sagie & Aycan (2003) investigate the relationship between culture and participative decision making (PDM). PDM is defined by Heller, Pusic, Strauss & Wilpert (1998, p.42) as a process “by which individuals, groups, collectives secure their interests or contribute to the choice process through self-determined choices among possible actions during the process.” The authors attempt to address criticisms of PDM theory in that research has neglected to acknowledge the importance of national culture (Hofstede, 2001). The authors posit that two dimensions of culture; individualism-collectivism (how the individual defines his/her-self as either independent or part of a collective) as and power distance (the extent to which individuals accept power hierarchy and inequality) are linked to widespread PDM approaches.

2.3.5 Summary of Organisational Behaviour Domain of Literature

Section 2.3 has reviewed the major themes contained within the organisational behaviour literature pertaining to decision making. In broad terms, these topics appear to cluster into three categories: (i) organisational decision making processes; (ii) cognitive effects upon organisational decision making, and; (iii) the effects of power, politics and culture upon organisational decision making. Table 10 shows the themes which have been identified in this review of the organisational behaviour literature together with the SDM and marketing literature.

Table 10 – Themes within the SDM, Marketing and Organisational Behaviour Domains of Literature

Themes	Strategic Decision Making Domain of Literature	Marketing Decision Making Domain of Literature	Organisational Behaviour Domain of Literature	Individual level (I), Group Level (G) or Organisational Level (O)
SDM & DM Processes and Typologies	Blankenship & Miles (1968), Mintzberg et al (1976), Armstrong (1982), Schwenk (1984), Hitt & Tyler (1991), Eisenhardt & Zbaracki (1992), Wally & Baum (1994), Shrivstava & Grant (1985; 1995), Krabaunrat & Phelps (1998), Nutt (1998), Schramm-Nielsen (2001), Hart 1992, Hickson et al (1986)	Greenley et al (2004), Armstrong & Collopy (1996), Sinkula (1994), Jocumsen (2004), Neill & Rose (2006), Menon et al (1999), Achrol & Stern (1988), Vallaster & Koll (2002)	Sagie & Kowalski (1994), Scott et al (1992)	I, G, O
Cognitive Style	Kiesler & Sproull (1982), Hickson et al (1982), Shrivastava & Grant (1985), Lord & Maher (1990), Hitt & Tyler (1991), Hart (1992), Nutt (1993), Coombe & Greenley (2004), Hough & Ogilvie (2005), Dane & Pratt (2007), Henderson & Nutt (1980),	-	Hunt et al (1989), Khatri & Ng (2000), Ruble & Cosier (1990)	I, G
Cognitive Biases / Heuristics	Hodgkinson et al (1999, 2002), Schwenk (1984), Nutt (1998), Duhaime & Schwenk (1985)	Qualls & Puto (1989), Mahajan (1992), Larreche & Moinpour (1983), Lee et al (1987)	Kim et al (2006), Drummond (1994)	I
Environmental Factors	Liao et al (2008), Dess & Beard (1984), Hough & White (2003), Dean & Sharfman (1996), Grant (2003), Goll & Rasheed	-	-	I, O

	(1997), Grant (2003), Bourgeois & Eisenhardt (1988), Eisenhardt (1989), Rajagopalan et al (1993)			
Organisational Structure	Blankenship & Miles (1968), Miles et al (1978), Bobbit & Ford (1980), Fredrickson (1986), Miller (1987), Covin et al (2001), Davis et al (2009)	-	-	I, G, O
Politics	Eisenhardt & Zbaracki (1992), Eisenhardt & Bourgeois (1988), Dean & Sharfman (1993)	-	Bacharach et al (1995), Darr & Johns (2004)	G, O
Decision Context	Papadikis et al (1998), Schneider & De Meyer (1991), Pettigrew (1990)	-	-	I, G, O
Strategic Decision Speed	Eisenhardt & Bourgeois (1988), Judge & Miller (1991), Wally & Baum (1994), Smith et al (1994)	-	-	I, G, O
Strategic Decision Comprehensiveness	Fredrickson & Mitchell (1984), Janis & Mann (1977), Braybrooke & Lindblom (1970), Schwenk (1984)	-	-	I, G, O
Strategic Decision Effectiveness	Dean & Sharfman (1996), Eisenhardt & Bourgeois (1988), Nutt (1993), Elbanna & Child (2007), Dyson & Foster (1980; 1983).	-	-	I, G, O
Flexibility and Strategic Flexibility	Coombe & Greenley (2004), Nutt (1993), Sharfman & Dean (1997)	-	-	I, G, O
Information and decision making	-	Perkins & Rao (1990), Glazer & Weiss (1993), Armstrong & Collopy (1996)	-	I, G, O
Culture	-	-	Sagie & Aycan (2003), Hofstede (2001)	I, G, O

2.4 Social-Psychology Literature

The literature review performed on the social-psychology domain of literature has identified that it contains a significant amount of empirical research concerning decision making, much of which has an occupational focus. This section of the literature review examines the following major themes which can be discerned from this body of literature; cognitive style, cognitive biases, decision making competence, cultural effects upon decision making, and risk.

2.4.1 Cognitive Style

The social-psychology literature contains a significant body of research which has sought to develop understanding of the cognitive style construct. The social-psychology domain of literature offers detailed descriptions of the cognitive style construct, as well as outlining the boundary conditions under which certain cognitive styles are evident and effective, and also alternative ways in which the cognitive style construct can be measured.

Cognitive style has been defined within the social-psychology literature as “a hypothetical construct that has been developed to explain the process of mediation between stimuli and responses. The term cognitive style refers to the characteristic ways in which individuals conceptually organise the environment.” (Goldstein & Blackman, 1979, p. 2).

Social-cognitive psychology research has developed two major dual processing theories of reasoning used in decision making (Leaptrott, 2008) which are determined by an individual's cognitive style. The system 1 (Kahneman, 2003) which is also termed ‘experiential’ (Epstein, 1994) describes a rapid, automatic, effortless reasoning process that is driven by

emotion (similar to the intuitive cognitive style contained within the SDM literature). In contrast, the system 2 (Kahneman, 2003), also termed 'rational' (Epstein, 1994), model of processing operates in a slow, comprehensive, thoughtful and effortful manner. Kahneman posits that the two modes interact, and that system 2 can override system 1 in order to correct a decision. Kahneman (2003, pg. 699) also recognises the benefit of intuitive decision making, stating "skilled decision makers often do better when they trust their intuitions than when they engage in detailed analysis." Epstein et al (1996) constructed two scales; the Rational-Experiential Inventory to measure the two independent processing modes with a modified Need for Cognition scale and a Faith in Intuition scale, in order to measure differences in individual's cognitive style.

A category of cognitive style which has polarised opinion within the social-psychology domain (as well as within the SDM literature) is that of intuition. Kahneman & Klein (2009, p.515) state that "intuition is sometimes marvellous and sometimes flawed." The authors explore the differences between two approaches to intuition and experience that are viewed as conflicting: heuristics and biases (HB) and naturalistic decision making (NDM). The authors also map the boundary conditions that separate true intuitive skill from overconfident and biased impressions. The authors conclude that "evaluating the likely quality of an intuitive judgment requires an assessment of the predictability of the environment in which the decision is made and of the individual's opportunity to learn the regularities of that environment. Subjective experience is not a reliable indicator of judgment accuracy." (Kahneman & Klein, 2009, p.515). Kahneman & Klein (2009, p. 520) define intuition as "the situation has provided a cue: This cue has given the expert access to information stored in the memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition." The authors define expertise as "those who have been

recognised within their profession as having the necessary skills and abilities to perform at the highest level.” (Kahneman & Klein, 2009, p.519).

Kahneman & Klein (2009) describe the use of intuition in judgment in terms of the aforementioned dual processing theory. The authors state “intuitive judgments are produced by System 1 operations, which are automatic, involuntary, and almost effortless. In contrast, the deliberate activities of System 2 are controlled, voluntary, and effortful – they impose demands on limited attentional resources.” The authors emphasise that in the HB approach to understanding intuition “System 2 is involved in the effortful performance of some reasoning and decision making tasks...When there are cues that an intuitive judgment could be wrong, System 2 can impose a different strategy, replacing intuition by careful reasoning.”

(Kahneman & Klein, 2009, p.519). However, much of the HB research has focused upon judgments that stem from simplifying heuristics as opposed to specific experience. Such intuitive judgments are less likely to be accurate. The author’s state that “the intuition model implies two conditions that must be satisfied for an intuitive judgment (recognition) to be genuinely skilled: First, the environment must provide adequately valid cues to the nature of the situation. Second, people must have an opportunity to learn the relevant cues.”

(Kahneman & Klein, 2009, p.520). Not all intuitive judgments are therefore, skilled. For example when “people have subjectively compelling intuitions even when they lack true skill, either because the environment is insufficiently regular or because they have not mastered it.” (Kahneman & Klein, 2009, p.521). Therefore, in summary, whether a intuitive judgment can be relied upon requires an examination of the environment upon which the decision is based and of whether the decision maker has had the opportunity to learn the regularities of the environment (Hodgkinson et al 2008; Kahneman & Klein, 2009). The authors define high validity environments as existing when “there are stable relationships

between objectively identifiable cues and subsequent events or between cues and the outcomes of possible actions.” (Kahneman & Klein, 2009, p.524).

Hodgkinson, Langan-Fox & Sadler-Smith (2008, p.8) define cognitive style as “modes of perceiving, remembering, thinking, and problem solving.” Hodgkinson et al (2008, p.8) state “there is a single superordinate dimension of cognitive style that underpins the numerous facets of information processing identified by many previous researchers...intuition-analysis.”

Intuition is defined as “immediate judgment based on feeling and the adoption of a global perspective” (Allinson & Hayes, 1996, p.122). Analysis is defined as “judgment based on mental reasoning and a focus on detail.” (Allinson & Hayes, 1996, p.122). Allinson & Hayes (1996) report the validation of a scale, the Cognitive Style Index (CSI), which locates individuals along this intuition-analysis continuum. A similar measurement scale exists in the Rational-Experiential Inventory (REI) developed by Epstein (1994), which measures preference for rational versus intuitive thinking, and support has been found within the extant social-psychology literature for the validity of this scale (e.g. Epstein et al 1996; Pretz & Tetz, 2007).

Cognitive Continuum Theory (CCT) is an adaptive theory of decision making, which presents a continuum of cognitive styles, with intuition and analysis as the continuum’s end points. (Dunwoody, Haarbauer, Mahan, Marino & Tang, 2000). This individual level theory explicitly rejects the dichotomous view of intuition and analysis as being either (i) rational; which assumes the decision maker is open to evidence, logical and analytical or (ii) bounded rational; where decision makers use only limited information and time and costs impose constraints (Bazerman, 1998; Noorderhaven, 1995). As such cognition is not viewed as

either intuitive or rational, rather cognition is viewed as falling between the two extremes of intuition and analysis. The theory also focuses on environmental stimuli which induce each type of cognition. CCT posits that a task continuum exists adjacent to the cognitive continuum. The authors state that “the task continuum is a range of different tasks that will benefit from different ratios of intuition and analysis. For example, a judgement task that contains uncertainty and many perceptually measured and redundant cues will be difficult to break down into its component parts...judgements in such an environment will benefit from an intuitive, compensatory approach.” (Dunwoody et al, 2000, pg. 37). The authors argue that task surface (the representation of information and how the task is represented) and task depth (the task structure and the functional relationships that exist between cues) determine which cognitive mode is induced.

Spicer & Sadler-Smith (2005) acknowledge the underlying influence of cognitive style upon decision making style and propose five decision making styles (rational, intuitive, dependent, avoidant and spontaneous). Whilst the authors neglect to consider the potential flaws of failing to consider the dual processing or cognitive continuum theories discussed within this literature review, they successfully tested the psychometric properties and construct validity of the General Decision Making Style (GDMS) questionnaire. GDMS purports to measure five decision making preferences, by utilising a five point Likert scale with five items identified for each style. Spice & Sadler-Smith (2005, pg. 146) do acknowledge the potential for decision makers to be adaptable in their cognitive style and state “other research questions could, for example, include, how malleable and/or situation specific is an individual’s style.”

2.4.1.1 Integrating Characterisations of Cognitive Style From the Four Domains of Literature

Several authors within the strategic management domain of literature have stated that the study of the effects of cognitive style upon SDM warrants significant attention (e.g. Schwenk, 1984; Eisenhardt & Zbracki, 1992; Hough & Ogilvie, 2005). Indeed, the attempts that have already been made to examine these individual level variables can be further developed by the incorporation of conceptualisations and measurement instruments from other domains (e.g. the social-psychology domain). For example, the use of intuition in SDM has been conceptualised as a cognitive style reliant upon gut feel (Khatri & Ng, 2000; Hough & Ogilvie, 2005), and the SDM and organisational behaviour literature have posited that intuition is effective in SDM when the organisation operates in an unstable environment (Dane & Pratt, 2007; Khatri & Ng, 2000).

When intuition is studied in the social-psychology literature, it brings into question the characterisations and hypotheses relating to an intuitive cognitive style contained within the SDM literature. For example, Kahneman & Klein (2009) suggest that intuition can only be effective when used in an environment which provides the decision maker with recognisable cues. This would suggest that intuition would not therefore be effective in an unstable environment. Furthermore, Kahneman & Klein (2009) suggest that true intuition is not gut feel, rather it is simply recognition and the ability of the decision maker to recall information stored in their memory based upon cues provided by the environment, and that the decision maker must have also had the opportunity to have learnt these cues. Thus, by integrating the SDM literature focussing upon intuition with the social-psychology literature, it is likely that not only can the existing hypotheses regarding intuition contained within the SDM literature

be brought into question, but the boundary conditions for when intuition is likely to be effective in SDM can be developed (e.g. in stable environments, where the decision maker has had the opportunity to learn the cues provided by the environment).

2.4.1.2 Measurement Issues Associated with Cognitive Style

Given that theoretical development in SDM has slowed considerably since the early 1990s within the strategic management and marketing domains it is unsurprising that criticisms have been levelled at these domains of literature for using outdated measurement scales in respect of cognitive style. A methodological criticism levelled at the cognitive style-SDM research concerns the adoption of the Myers-Briggs Type Indicator (MBTI) for measuring decision and cognitive style (e.g. Leonard, Scholl & Kowalski, 1999; Nutt, 1993). MBTI was developed in 1962 and measures personality across four dimensions (introversion-extraversion, sensing-intuition, thinking-feeling, and perceiving judging). The lower end of the scale is anchored by extraversion, sensing, thinking and judging. The upper end of the scale is anchored by introversion, intuition, feeling and perceiving. Leonard et al (1999) state that support for only two of the dimensions (sensing-intuition and thinking-feeling) as a measure of cognitive style have been documented in the literature. Furthermore, Epstein, Pacini, Heier & Denes-Raj (1996, pg. 390) state that the MBTI has “serious limitations with respect to measuring modes of (information) processing.”

The SDM literature has not adopted several relevant constructs and measurement devices which have been developed within the social-cognitive psychology discipline such as the Cognitive Continuum Theory and the General Decision Making Style questionnaire.

Cognitive Continuum Theory (CCT) (Dunwoody et al, 2000) is a theory and measurement scale which has featured within the social-psychology literature in order to capture where on a continuum environmental stimuli induce either an intuitive or analytical response. This scale has not featured within the strategic management, marketing nor organisational behaviour literature and may present a promising avenue for further developing understanding of how and when strategic decision makers utilise their intuition and when a more analytical approach is employed. This scale and construct would seem to complement the theories of expert-intuition also discussed in this section. The 'General Decision Making Style', discussed in section 2.4.1 (GDMS) questionnaire (Spicer & Sadler-Smith, 2005) appears to be another alternative to MBTI.

2.4.2 Cognitive biases

Cognitive biases, also referred to as heuristics, are defined as "rules of thumb...Heuristic processing strategies enable the decision-maker to cut through the welter of information bombarding them, by imposing a number of simplifying assumptions on the data."

(Hodgkinson, 2003, p.6). Whilst the strategic management, marketing and organisational literature more commonly refers to heuristics as 'cognitive biases' the two constructs mean exactly the same thing, albeit the strategic management, marketing and organisational behaviour literature general contends that heuristics, or cognitive biases, are generally detrimental to decision making. (Schwenk, 1984).

A form of bias, termed 'hindsight bias' describes a phenomenon whereby "people's retrospective judgments are systematically biased by outcome knowledge." (Ash, 2009, p.916). Ash (2009, p.917) explains that hindsight bias is "systematic differences between people's predictive and retrospective judgments." Ash adds that such a bias has been found

to affect real life decision making situations, such as jurors and medical diagnoses. Ash (2009) conducted two experiments in order to determine that hindsight bias occurred after decision makers were exposed to incongruent and ambivalent outcomes. Ash concludes by stating that hindsight bias is a “maladaptive judgment bias that impedes people’s ability to develop more accurate decision-making strategies.” (Ash, 2009, p.929).

An alternative heuristic investigated by Hart, Eagly, Lindberg, Albarracin, Brechan & Merrill (2009) is that of congeniality bias (also commonly referred to as ‘confirmation bias’). Hart et al (2009, p.556) define the congeniality bias as a type of selective exposure whereby “people defend their attitudes, beliefs, and behaviours by avoiding information likely to challenge them and seeking information likely to support them.” Hart et al (2009) conducted a meta-analysis of whether people “prefer information that supports pre-existing attitudes, beliefs, and behaviours more than information that challenges pre-existing attitudes, beliefs and behaviours.” (Hart et al, 2009, p.559). The results of the meta-analysis confirmed a preference for congenial over uncongenial information, which was moderated by the strength of the individual’s defence and accuracy motivations.

Moon (2001) investigated two further types of heuristic termed sunk cost effects and project completion, which both serve to explain why decision makers may escalate their commitment to a previously chosen course of action. Moon (2001, p.104) states that “sunk costs may push decision makers toward appearances of not seeming to be wasteful. On the other hand, completion pressures may tend to pull decision makers forward toward the social desirability of finishing what was started.” Moon (2001) tested his hypothesis that sunk costs and need to complete exert simultaneous pressures on a decision maker’s level of commitment. 340

participants took part in an experiment that supported the hypothesised relationship and also illustrated that sunk costs have a curvilinear relationship with commitment.

Oxoby (2009) explores whether a relationship exists between an individual's use of a particular heuristic (the proportion heuristic) and the incentives that he/she faces. The premise being that the structure of incentives not only directly motivates behaviour but also plays an important role in how individual's use information to form judgments about their efforts and abilities. Oxoby (2009) explains the proportion heuristic in the context of individual's preparatory behaviours: "Individual's who received larger problem sets completed more practice problems, but a smaller proportion of available problems. These individuals reported lower judgments of own readiness than did individuals receiving smaller problem sets...this is dubbed the proportion heuristic in recognition that individuals were basing preparatory behaviour and readiness on the proportion of practice problems completed." (Oxoby, 2009, p. 121). The results of the experiment demonstrated that relative compensation schemes magnify the influence of the proportion heuristic.

2.4.3 Decision Making Competence

Whilst the SDM, marketing and organisational behaviour domains of literature have focussed upon the effectiveness of decisions, there is little research which seeks to explore the competence of decision makers. Indeed, the normative decision making models posit that the quality of a decision depends upon its process rather than its outcome. (De Bruin, Fischhoff & Parker, 2007). The normative models of decision making typically identify four fundamental skills: Belief assessment which involves judging the likelihood of outcome; value assessment

which entails evaluating outcomes; integration which involves combining beliefs and values in making decisions, and metacognition meaning knowing the extent of one's abilities (De Bruin et al, 2007). De Bruin et al (2007, pg. 938) state that "decision-making processes have been studied in isolation...the price paid for that depth is limited understanding of how individual decision-making skills are related to (a) other decision making skills, (b) demographic characteristics..., (c) other cognitive abilities and decision making styles, and (d) real world outcomes." In order to address some of these limitations, the authors tested the reliability of the Adult Decision Making Competence index (A-DMC), which has seven component tasks: Resistance to framing, recognising social norms, under/over confidence, applying decision rules, consistency in risk perception, resistance to sunk costs, and path independence. The authors found that the A-DMC emerged with significant relationships with measures of socio-economic status, cognitive ability and decision making styles.

2.4.4 Cultural Effects Upon Decision Making

Whilst studying the effects of culture (and risk, section 2.4.5) upon SDM are beyond the scope of this research, literature has been identified which has explored the effects of culture and risk in the context of decision making and is therefore included here for completeness. Research suggests that cultural setting can explain differences that exist in the way in which decisions are arrived at. Schramm-Nielsen (2001) found that managers in French and Danish companies emphasised different phases of the decision making process. The authors found that French decision makers were analytically rational but creatively irrational. The authors termed this style of decision making "emotional man" in order to designate persons or reactions at the opposite extreme from pure rationality. In contrast, the authors depicted Danish decision makers as tending to "satisfice...not optimize in relation to goals and to

accept limited insight...they do not aim to be very analytical, but rather at being realistic.” (Schramm-Nielsen, 2001, pg. 414). This view of Danish decision making is also supported by Larsen (1987) who states that Danes do not start the decision making process by defining formal goals, rather they assess their resources and means at hand. Schramm-Nielsen (2001, pg. 405) states that “there is a lack of concern with cultural aspects of decision making in the classical theories, which present decision making as a universalist phenomenon”, which further supports the view that context is an important factor to consider when investigating strategic decision making.

2.4.5 Risk

The literature suggests that managers handle risk in business situations differently, and that some take a more analytic approach whereas others operate more intuitively (Pablo, 1997). Pablo (1997) states that decisions are riskier to the extent that: (1) There is more uncertainty associated with the potential outcomes; (2) There is a high degree of variability in possible outcomes and; (3) There is potential for extreme, high consequence results.

Kahneman & Tversky (1979) propose that risk behaviour is largely influenced by framing. They suggest that in situations where a positive outcome is emphasised, then individuals are likely to be risk averse in their choices. However, when the situation is presented in a loss frame, a more risk seeking response is favoured by decision makers. Pablo (1997, pg. 5) states that contradictory theories also exist, and that “a conclusive model of risk behaviour cannot be drawn”. It is clear therefore, that risk, and decision makers’ perceptions of risk is likely to affect decision making behaviour.

2.4.6 Summary of the Social-Psychology Domain of Literature

Section 2.4 has reviewed the themes, concepts and empirical work contained which were identified during a review of the social-psychology literature relating to decision making. These themes include: cognitive style; heuristics and intuition; decision making style; decision making competence; cultural effects upon decision making; and risk. The conceptualisations and measurement scales developed in this domain of literature relating to cognitive style, could be integrated within the SDM literature to further develop theory. Table 11 shows the themes which have been identified in this review of the social-psychology literature, together with the SDM, marketing and organisational behaviour literature.

Table 11 – Themes within the SDM, Marketing and Organisational Behaviour and Social-Psychology Domains of Literature

Themes	Strategic Decision Making Domain of Literature	Marketing Decision Making Domain of Literature	Organisational Behaviour Domain of Literature	Social-Psychology Domain of Literature	Individual level (I), Group Level (G) or Organisational Level (O)
SDM & DM Processes and Typologies	Blankenship & Miles (1968), Mintzberg et al (1976), Armstrong (1982), Schwenk (1984), Hitt & Tyler (1991), Eisenhardt & Zbaracki (1992), Wally & Baum (1994), Shrivstava & Grant (1985; 1995), Krabaunrat & Phelps (1998), Nutt (1998), Schramm-Nielsen (2001), Hart 1992, Hickson et al (1986)	Greenley et al (2004), Armstrong & Collopy (1996), Sinkula (1994), Jocumsen (2004), Neill & Rose (2006), Menon et al (1999), Achrol & Stern (1988), Vallaster & Koll (2002)	Sagie & Kowalski (1994), Scott et al (1992)	-	I, G, O
Cognitive Style	Kiesler & Sproull (1982), Hickson et al (1982), Shrivastava & Grant (1985), Lord & Maher (1990), Hitt & Tyler (1991), Hart (1992), Nutt (1993), Coombe & Greenley (2004), Hough & Ogilvie (2005),	-	Hunt et al (1989), Khatri & Ng (2000), Ruble & Cosier (1990)	Epstein (1994), Epstein et al (1996), Allinson & Hayes (1996), Kahneman (2003), Hodgkinson et al (2008), Kahneman & Klein (2009), Dunwoody et al (2000), Spicer & Sadler-Smith (2005)	I, G

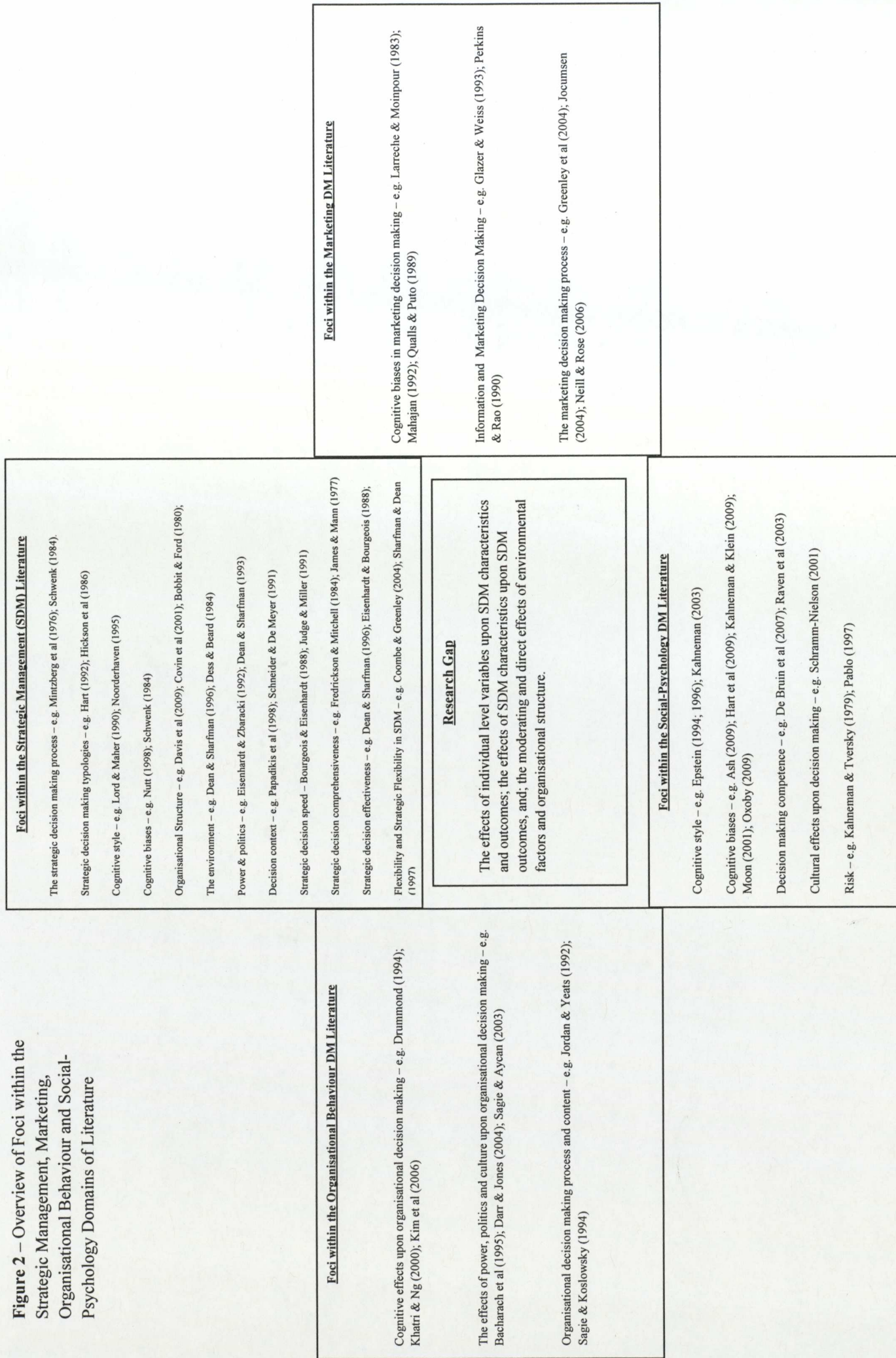
	Dane & Pratt (2007), Henderson & Nutt (1980),				
Cognitive Biases / Heuristics	Hodgkinson et al (1999, 2002), Schwenk (1984), Nutt (1998), Duhaime & Schwenk (1985)	Qualls & Puto (1989), Mahajan (1992), Larreche & Moinpour (1983), Lee et al (1987)	Kim et al (2006), Drummond (1994)	Ash (2009), Hart et al (2009), Moon (2001), Oxoby (2009)	I
Environmental Factors	Liao et al (2008), Dess & Beard (1984), Hough & White (2003), Dean & Sharfman (1996), Grant (2003), Goll & Rasheed (1997), Grant (2003), Bourgeois & Eisenhardt (1988), Eisenhardt (1989), Rajagopalan et al (1993)		-	Kahneman & Klein (2009), Ash (2009), Hart et al (2009), Moon (2001), Oxoby (2009)	I, O
Organisational Structure	Blankenship & Miles (1968), Miles et al (1978), Bobbit & Ford (1980), Fredrickson (1986), Miller (1987), Covin et al (2001), Davis et al (2009)	-	-	-	O
Politics	Eisenhardt & Zbaracki (1992), Eisenhardt & Bourgeois (1988), Dean & Sharfman (1993)	-	Bacharach et al (1995), Darr & Johns (2004)	-	G, O
Decision	Papadikis et al	-	-	-	I, G, O

Context	(1998), Schneider & De Meyer (1991), Pettigrew (1990)				
Strategic Decision Speed	Eisenhardt & Bourgeois (1988), Judge & Miller (1991), Wally & Baum (1994), Smith et al (1994)	-	-	-	I, G, O
Strategic Decision Comprehensiveness	Fredrickson & Mitchell (1984), Janis & Mann (1977), Braybrooke & Lindblom (1970), Schwenk (1984)	-	-	-	I, G, O
Strategic Decision Effectiveness	Dean & Sharfman (1996), Eisenhardt & Bourgeois (1988), Nutt (1993), Elbanna & Child (2007), Dyson & Foster (1980; 1983).	-	-	-	I, G, O
Flexibility and Strategic Flexibility	Coombe & Greenley (2004), Nutt (1993), Sharfman & Dean (1997)	-	-	-	I, G, O
Information and decision making	-	Perkins & Rao (1990), Glazer & Weiss (1993), Armstrong & Collopy (1996)	-	-	I, G, O
Culture	-	-	Sagie & Aycan (2003), Hofstede (2001)	Schramm-Nielsen (2001)	I, G, O
Decision Making Competence	-	-	-	De Bruin et al (2007)	I
Risk	-	-	-	Pablo (1997), Kahneman & Tversky	I

				(1979)	
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Figure 2 illustrates the major themes which this literature review has identified within each of the four domains of literature.

Figure 2 – Overview of Foci within the Strategic Management, Marketing, Organisational Behaviour and Social-Psychology Domains of Literature



3.0 CRITICAL LITERATURE SYNTHESIS

The results of a systematic review of the strategic management literature identified that organisational change and adaptation is facilitated and guided through a process carried out by individuals, labelled as strategic decision making (Coombe & Greenley, 2004; Nutt, 1993; Sharfman & Dean, 1997). The scope of the systematic literature review was expanded beyond the strategic management literature in order to incorporate the marketing, organisational behaviour and social psychology domains which each contain literature which is relevant to strategic decision making, although each has evolved disparately. In order to progress knowledge in the SDM domain, it is essential to integrate the literature from these different domains (Duhaime & Schwenk, 1985; Hough & Ogilvie, 2005) which enables better informed conceptualisation and measurement of theory within the SDM domain of literature. For example, the SDM and organisational behaviour domains of literature have not integrated the conceptualisations and measurement of the cognitive style construct which are contained within the social-psychology literature, and as such, theory concerning the effects of cognitive style upon SDM remains incomplete. The purpose of this section of the dissertation is therefore to critically synthesise the literature from the strategic decision making, marketing, organisational behaviour, and social-psychology domains in order to identify how a significant theoretical contribution can be made to the SDM domain of literature.

From the systematic review of the strategic management literature, and based upon an adaptation of the framework postulated by Rajagopalan et al (1993), the themes relevant to SDM can be categorised as: (i) individual level variables (cognitive style and cognitive biases); (ii) SDM characteristics (comprehensiveness, flexibility, and politics); (iii) SDM outcomes (strategic flexibility, speed, and effectiveness), and; (iv) contextual antecedents

(environmental factors, organisational structure, and decision context). However, the following topics have been excluded from the conceptual model and theoretical development: cognitive biases, politics, and decision context. Whilst the main reason for omitting these topics was parsimony, there are also more specific reasons. Organisational politics, and cognitive biases as themes within the strategic management, marketing, organisational behaviour, and social-psychology literature not only represents significant bodies of literature in themselves; but these are topics which are also likely to have a pervasive effect in all aspects of organisational behaviour. Therefore, a study of the effects of organisational politics and cognitive biases upon SDM is considered too broad, and therefore these topics are beyond the scope of this dissertation and future research based upon this dissertation. Furthermore, the topic of decision context has been omitted as the context of the decisions under scrutiny is strategic decisions, and by their very nature involve a significant level of risk and uncertainty, entail a significant financial outlay, and have a pervasive effect upon the organisation (Eisenhardt & Zbaracki, 1992; Shrivastava & Grant, 1992; Wally & Baum, 1994).

The following sub-sections explore how, through a synthesis of the SDM, marketing, organisational behaviour, and social-psychology literature, the relationships between cognitive style, SDM characteristics (flexibility and comprehensiveness), SDM outcomes (strategic flexibility, speed, effectiveness), and contextual antecedents (environmental factors and organisational structure) can be examined, in order to make a significant theoretical contribution to the extant SDM literature.

3.1 The Effects of Cognitive Style upon SDM Characteristics

All four domains of literature (SDM, marketing, organisational behaviour, and social-psychology) have identified that cognitive style influences SDM and decision making more generally (e.g. Henderson & Nutt, 1980; Khatri & Ng, 2000; Kahneman & Klein, 2009), both directly, by influencing SDM characteristics (e.g. Eisenhardt, 1989; Sharfman & Dean, 1997), and indirectly, by influencing SDM outcomes (e.g. Kahneman & Klein, 2009; Khatri & Ng, 2000). The effects of cognitive style upon the characteristics of SDM (comprehensiveness and flexibility) are now explored in detail.

3.1.1 The Effects of Cognitive Style upon SDM Comprehensiveness

The conceptualisation of the cognitive style construct can be developed by integrating the social-psychology theory with the SDM, marketing and organisational behaviour literature. The extant SDM literature recognises the importance of cognitive style and Krabuanrat & Phelps (1998, p.83) state that “requirements for adaptation centre around information processing and decision-making capabilities.”

Intuition and analysis have been featured in the literature as contrasting categories of cognitive style (Allinson & Hayes, 1996; Epstein, 1994; Hunt, Krzystofiak, Meindl & Yousry, 1989) or opposite ends of a cognitive style continuum (Allinson & Hayes, 1996; Epstein, 1994; Dunwoody, Haarbauer, Mahan, Marino & Tang, 2000). An individual with an intuitive cognitive style “comprehends the field as an integrated whole” (Hunt et al, 1989, p.438) whereas an individual with an analytical cognitive style “is seen as concentrating on

detail and thus as breaking that which is observed into component parts.” (Hunt et al, 1989, p.438).

No empirical evidence to provide insight into the effect of cognitive style upon SDM comprehensiveness has been identified, and only limited conceptual work has been identified (Hough & Ogilvie, 2005; Khatri & Ng, 2000) and this has largely focussed upon one category of cognitive style, intuition. Even with regards to the examination of the construct intuition, theoretical development is limited: “there are only a handful of serious scholarly works on the subject. The majority of them are essentially theoretical in nature.” (Khatri & Ng, 2000, p.57). However, from the studies that do exist an intuitive cognitive style in SDM has been found to positively affect organisational performance in unstable environments (Khatri & Ng, 2000), owing to the speed with which strategic decisions can be made (Eisenhardt, 1989). Hough & Ogilvie (2005, p.417) found that managers used their intuition “to make cognitive leaps.” Therefore, it may be expected that an intuitive cognitive style will have a negative effect upon strategic decision comprehensiveness due to the rapid, unconscious manner in which intuitive decision makers draw upon stored memory (Kahneman & Klein, 2009). However, there is a lack of consensus with the extant SDM literature as to the precise effect that an intuitive cognitive style has upon SDM comprehensiveness. Indeed, Eisenhardt (1989) states that although intuition is associated with speedy SDM, intuitive decision makers use more information and also develop more alternatives. This implies that an intuitive cognitive style will have a positive effect upon SDM comprehensiveness.

Whilst no empirical studies have been identified which examine the relationship between an analytical cognitive style and SDM comprehensiveness, an individual with an analytical cognitive style is believed to prefer to break up decision tasks into component parts and focus upon detail (Hunt et al, 1989). This appears to be congruent with the characterisations of SDM comprehensiveness contained within the SDM literature, for example a SDM comprehensiveness is associated with intense and exhaustive information search activity and careful appraisal of the upside and downside of the strategic alternatives (Jannis & Mann, 1977; Fredrickson & Mitchell, 1984). It is therefore expected that an analytical cognitive style will have a direct and positive effect upon SDM comprehensiveness. Therefore, stated formally the following propositions can be made:

P1A: An analytical cognitive style will have a direct and positive effect upon strategic decision making comprehensiveness.

P1B: An intuitive cognitive style will have a direct and negative effect upon strategic decision making comprehensiveness.

3.1.2 The Effects of Cognitive Style upon SDM Flexibility

No empirical studies have been identified which directly examine the relationship between cognitive style and flexibility in SDM. However, Sharfman & Dean (1997) examined flexibility within strategic decision making, positing that unless the strategic decision making process itself is flexible, it is unlikely that the organisation itself will be flexible and thus incapable of adapting. Sharfman & Dean (1997) conceptualise flexibility in SDM as the extent to which decision makers are open to new ideas and are willing to utilise different information sources. The authors also suggest that the decision makers' recursiveness (their

willingness to re-examine the assumptions that have been made to bring the decision to a certain point) is also crucial for the SDM process to be flexible.

An intuitive cognitive style, which is rapid, effortless and automatic (Kahneman & Klein, 2009) is unlikely to be associated with openness to new ideas, utilising different information sources and recursiveness in decision making. However, the analytical cognitive style, which is associated with inclusive and exhaustive information gathering activity and careful examination of the problem situation, may have a positive effect upon flexibility in SDM, and decision makers with an analytical cognitive style are likely to be recursive and open to new sources of information. Stated formally, the following propositions can be made:

P1C: An analytical cognitive style will have a direct and positive effect upon flexibility in strategic decision making.

P1D: An intuitive cognitive style will have a direct and negative effect upon flexibility in strategic decision making.

3.1.3 Summary of the Effects of Cognitive Style upon SDM Characteristics

The SDM, organisational behaviour and marketing literature highlights the importance of cognitive style and acknowledges its effect upon SDM (e.g. Schwenk 1984; Eisenhardt & Zbracki, 1992), this body of literature contains very little empirical work which has examined the relationship between cognitive style and SDM characteristics. From the limited, and mostly conceptual work which does exist it is apparent that a significant theoretical contribution can be made by empirically examining the relationship between cognitive style (analytical versus intuitive) and SDM characteristics (comprehensiveness and flexibility).

3.2 The Effects of Cognitive Style upon SDM Outcomes

The SDM literature describes the outcomes of SDM as strategic flexibility, speed, and effectiveness. Limited attempts have been made in order to empirically examine the relationship between cognitive style, and the afore mentioned SDM outcomes. Much of the work has been conceptual, and has not integrated perspectives from the other domains. Furthermore, no empirical evidence, and only very limited conceptual work has been found that has sought to explain the relationship between cognitive style and strategic flexibility (as an outcome of SDM), despite the consensus that strategic flexibility is inextricably linked to SDM (Coombe & Greenley, 2004).

3.2.1 The Effects of Cognitive Style upon Strategic Flexibility

Strategic flexibility enables adaptation to environmental turbulence through new and alternative strategic options being generated during decision making (Coombe & Greenley, 2004; Rudd et al, 2008). Coombe & Greenley (2004, p.1458) state that “for strategic flexibility to exist at the level of the firm, decision makers themselves must possess capabilities for strategic flexibility.” The authors state that strategic flexibility can be operationalised in terms of the “flexible cognitive style approach” (Coombe & Greenley, 2004, p.1459) which adopts a perspective that some decision makers may have a cognitive style that means they are more or less flexible than other decision makers. Coombe & Greenley (2004) propose a cognitive content framework for strategic flexibility capabilities; however, they do not explain precisely how a certain cognitive style (e.g. intuitive or analytical) affects the capability for strategic flexibility. Coombe & Greenley (2004) do however assert that capabilities for strategic flexibility are inextricably linked to cognitive

style and information processing, a view which is echoed by Sharfman & Dean (1997) who state that flexibility is constrained by management's mental barriers or cognitive limitations.

Intuition has been defined as "a form of compressed experience" (Wally & Baum, 1994, pg. 936). Thus, when decision makers utilise their intuition they rely on already developed knowledge structures to supplement simplified means of processing information (Lord & Maher, 1990). The use of an intuitive cognitive style in SDM may therefore restrict strategic flexibility by preventing decision makers from considering new and alternative options (Goll & Rasheed, 1997). Therefore an intuitive cognitive style is likely to have a negative effect upon strategic flexibility. Conversely, an analytical cognitive style, which has been considered to have a positive effect upon flexibility in the SDM process, is likely to have a positive effect upon strategic flexibility, as an analytical cognitive style is likely to be associated with the generation and new and alternative strategic decision making options (Coombe & Greenley, 2004). Stated formally, the following propositions can be made:

P1E: An analytical cognitive style will have an indirect and positive effect upon strategic flexibility, and this relationship will be mediated by flexibility in SDM.

P1F: An intuitive cognitive style will have an indirect and negative effect upon strategic flexibility, and this relationship will be mediated by flexibility in SDM.

3.2.2 The Effects of Cognitive Style upon SDM Speed

Researchers within the organisational behaviour domain (e.g. Khatri & Ng, 2000) have contended that an intuitive cognitive style is associated with increased decision speed. This

view is supported by literature across the other domains, e.g. in the SDM domain Hough & White (2005) and Eisenhardt (1989), and in the social-psychology domain Kahneman & Klein (2009). This is due to the fast, automatic and unconscious nature of intuition, resulting in a much less comprehensive SDM process. Therefore, an intuitive cognitive style will have a positive indirect effect upon SDM speed. However, an analytical cognitive style, which is expected to have a direct and positive effect upon SDM comprehensiveness, will have an indirect and negative effect upon SDM speed. This view is supported by the work of Fredrickson and Mitchell (1984) who found that comprehensive SDM resulted in a slow SDM process. However, Fredrickson & Mitchell (1984) did not explicitly explore the effect of an analytical cognitive style upon SDM speed, and as such examining this relationship will make a significant contribution to the extant SDM theory. Stated formally, the following propositions can be made:

P1G: An analytical cognitive style will have an indirect and negative effect upon strategic decision speed, and this relationship will be mediated by SDM comprehensiveness.

P1H: An intuitive cognitive style will have an indirect and positive effect upon strategic decision speed, and this relationship will be mediated by SDM comprehensiveness.

3.2.3 The Effects of Cognitive Style upon SDM Effectiveness

The SDM, and more broadly, the strategic management literature suffers from a lack of conceptual clarity regarding what the precise definition and meaning of effectiveness is, and work is required in order to precisely define this concept before attempting to measure it. Nevertheless, there exists conceptual and empirical research which examines SDM effectiveness. However, limited empirical work exists which examines specifically the

relationship between cognitive style and strategic decision effectiveness. One notable exception is research conducted by Khatri & Ng (2000) who found an intuitive cognitive style to be effective in an unstable environment, and negative in a stable environment. The potential effects of environmental factors are discussed separately later in this section. Hough & White (2005) also found intuition to be associated with decision effectiveness. Therefore, it could be postulated that an intuitive cognitive style has a positive effect upon strategic decision effectiveness.

No empirical research has been identified which directly examines the relationship between an analytical cognitive style and strategic decision effectiveness. However, it has been posited by Smith et al (1991) that accurate decisions are of little value if they are mistimed. Thus, a slow strategic decision may be ineffective. If it assumed that an analytical cognitive style has a negative effect upon SDM speed, then this may also mean that an analytical cognitive style has a negative effect upon SDM effectiveness. It is clear however that the environment has a role in determining the effectiveness of SDM and the relationship between cognitive style and SDM effectiveness, a perspective which is evident in the work of Eisenhardt (1989), Wally & Baum (1994), Khatri & Ng (2000), and Hough & White (2005). Stated formally, the following propositions can be made:

P1I: An analytical cognitive style will have a direct and negative effect upon strategic decision effectiveness, and this relationship will be moderated by environmental factors.

P1J: An intuitive cognitive style will have a direct and positive effect upon strategic decision effectiveness, and this relationship will be moderated by environmental factors.

3.2.4 Summary of the Effects of Cognitive Style upon SDM Outcomes

The SDM, organisational behaviour and marketing literature highlights the importance of cognitive style and acknowledges its effect upon SDM (e.g. Schwenk 1984; Eisenhardt & Zbracki, 1992; Coombe & Greenley, 2004); this body of literature contains very little empirical work which has examined the relationship between cognitive style and SDM outcomes. From the limited, and mostly conceptual work which does exist it is apparent that a significant theoretical contribution can be made by empirically examining the relationship between cognitive style (analytical versus intuitive) and SDM outcomes (strategic flexibility, speed, and effectiveness).

3.3 The Effects of SDM Characteristics upon SDM Outcomes

The SDM literature describes SDM characteristics as comprehensiveness, and flexibility. The SDM literature describes SDM outcomes as strategic flexibility, speed, and effectiveness. Only very limited attempts have been made to empirically examine the relationship between SDM characteristics and SDM outcomes. Much of the work has been conceptual, and has not integrated perspectives from the other domains. Furthermore, despite the recognised importance of strategic flexibility (Sharfman & Dean, 1997; Coombe & Greenly, 2004; Rudd et al, 2008) only a very small number of studies exist which seek to examine the relationship between SDM characteristics and strategic flexibility as an outcome.

3.3.1 The Effects of SDM Comprehensiveness upon Strategic Flexibility

Strategic flexibility has been defined as “the extent to which new and alternative decisions are generated” (Rudd et al, 2008). SDM comprehensiveness has been described in terms of

exhausting strategic options, and generating a wide range of alternatives (Jannis & Mann, 1977; Fredrickson & Mitchell, 1984). Despite the explicit statements from authors postulating that strategic flexibility and SDM are inextricably linked (e.g. Sharfman & Dean, 1997; Coombe & Greenley, 2004; Rudd et al, 2008) no empirical evidence has been identified which examines the relationship between SDM comprehensiveness, and strategic flexibility. In light of the above definitions of strategic flexibility and comprehensive SDM, it is expected that comprehensive SDM has a direct and positive effect upon strategic flexibility. Stated formally, the following proposition can be made:

P2A: Comprehensive SDM will have a direct and positive effect upon strategic flexibility.

3.3.2 The Effects of SDM Comprehensiveness upon SDM Speed

There is a lack of consensus with regards to the relationship between SDM comprehensiveness and SDM speed. For example, Fredrickson & Mitchell (1984) found that comprehensiveness slowed SDM. This contradicts the assertion of Eisenhardt (1989) who found that decision makers responsible for speedy SDM actually used more information and developed a greater number of strategic alternatives. A lack of empirical evidence is evidently hindering the development of theory, and an examination of the relationship between SDM comprehensiveness and SDM speed will develop knowledge within the SDM domain. The social-psychology literature, whilst not specifically addressing this relationship, contends that comprehensive analysis is not as quick as intuitive information processing activities (e.g. Epstein 1994; Kahneman 2003). It is expected therefore that comprehensiveness will have a direct and negative effect upon SDM speed. Stated formally, the following proposition can be made:

P2B: Comprehensive SDM will have a direct and negative effect upon SDM speed.

3.3.3 The Effects of SDM Comprehensiveness upon SDM Effectiveness

A positive relationship exists between SDM comprehensiveness and SDM effectiveness, in a stable environment (Fredrickson & Mitchell, 1984). Similarly, Dean & Sharfman (1996) found comprehensive SDM to be effective. Despite these studies, Dean & Sharfman (1996, p.369) state that “the link between strategic decision process and effectiveness has not yet, however, been so convincingly demonstrated.” Therefore, further empirical investigation of the relationship between SDM comprehensiveness and SDM effectiveness should provide further evidence that SDM comprehensiveness has a direct and positive effect upon SDM effectiveness. Stated formally, the following proposition can be made:

P2C: Comprehensive SDM will have a direct and positive effect upon SDM effectiveness.

3.3.4 The Effects of SDM Flexibility upon Strategic Flexibility

Sharfman & Dean (1997) examined flexibility within strategic decision making, positing that unless the strategic decision making process itself is flexible, it is unlikely that the organisation itself will be flexible and thus incapable of adapting. The authors suggest that a key element in the strategic decision flexibility is the extent to which decision makers are open to new ideas and willing to utilise different information sources. The authors also suggest that the decision makers' willingness to re-examine the assumptions that have been made to bring the decision to a certain point is also crucial for the SDM process to be

flexible. However, no evidence of the relationship between flexibility within SDM and strategic flexibility was provided by Sharfman & Dean (1997).

Coombe & Greenley (2004, p.1458) state that strategic flexibility can be operationalised as a flexible process approach (e.g. Sharfman & Dean, 1997) which examines the decision making process rather than the results. Coombe & Greenley (2004) propose a cognitive content framework for strategic flexibility capabilities; however, they do not provide any evidence to predict the nature of the relationship between flexibility in SDM and strategic flexibility. An empirical examination of the relationship between flexibility in SDM, defined by Sharfman & Dean (1997) as the extent to which decision makers are recursive and open to new ideas and alternative information sources, and strategic flexibility, is likely to make a significant theoretical contribution. It is expected that flexibility in SDM will have a direct and positive effect upon strategic flexibility. Stated formally, the following proposition can be made:

P2D: Flexibility in SDM will have a direct and positive effect upon strategic flexibility.

3.3.5 The Effects of SDM Flexibility upon SDM Speed

The systematic literature review did not identify any research which has sought to examine the relationship between flexibility in SDM and SDM speed. As such an investigation of this relationship is likely to make a significant theoretical contribution. However, Sharfman & Dean's (1997) definition of flexibility in SDM is not indicative of a process which is likely to be speedy. If decision makers are open to exploring new information sources, and being

recursive in the decision making process, this is likely to result in slow SDM. This presents a paradox, as an important tenet of strategic flexibility is that it enables the organisation to adapt to environment turbulence in a timely manner (Smith et al, 1991; Rudd et al, 2008), however, based on the SDM literature it could be hypothesised that flexibility within SDM is expected to have a direct and negative effect upon SDM speed. Stated formally, the following proposition can be made:

P2E: Flexibility in SDM will have a direct and negative effect upon SDM speed.

3.3.6 The Effects of SDM Flexibility upon SDM Effectiveness

The literature concerning the relationship between SDM flexibility and SDM effectiveness is very limited, and hindered by a lack of conceptual clarity regarding the precise meaning of SDM effectiveness. Limited evidence can however be found in the work of Dean & Sharfman (1996) whom found that decision makers who used more information from different sources, and were analytical, were associated with SDM effectiveness. These decision making behaviours are broadly similar to Sharfman & Dean's (1997) characterisation of flexibility in SDM. Whilst it is not possible to make confident predictions based upon such limited evidence, it may be expected that flexibility in SDM will have a direct and positive effect upon SDM effectiveness. Stated formally, the following proposition can be made:

P2F: Flexibility in SDM will have a direct and positive effect upon SDM effectiveness.

3.3.7 Summary of the Effects of SDM Characteristics upon SDM Outcomes

The SDM, organisational behaviour and marketing literature describe the characteristics of SDM (e.g. Fredrickson & Mitchell, 1984; Sharfman & Dean, 1997); and also describe SDM outcomes (e.g. Eisenhardt & Bourgeois, 1989; Coombe & Greenley 2004). However, further empirical research is required in order to examine the relationships that exist between SDM characteristics and SDM outcomes. The extant literature concerning these relationships is limited and mostly conceptual.

3.4 The Effects of Contextual Antecedents

The literature review identified that the SDM literature features conceptual and empirical evidence supporting the existence of contextual antecedents which effect: (i) the relationship between cognitive style and SDM characteristics; (ii) SDM characteristics themselves, and; (iii) the relationship between SDM characteristics and SDM outcomes. The contextual antecedents described within the SDM literature are: environmental factors, organisational structure, and decision context, although this critical literature synthesis and theoretical development shall focus only upon environmental factors and organisational structure.

Furthermore, examining the effects upon SDM of both environmental factors and organisational structure simultaneously, Rajagopalan et al's (1993, p.366) criticism regarding the SDM literature can be addressed: "very few studies have controlled for or simultaneously examined the influence of environmental and organizational factors."

Only very limited attempts have been made to empirically examine the effects of these contextual antecedents and a large amount of the work has been conceptual, and has not integrated perspectives from the other domains.

3.4.1 The Effects of Environmental Factors upon the Relationship between Cognitive Style and SDM Characteristics and SDM Outcomes

There is a conflict between the organisational behaviour/SDM literature and the social-psychology literature concerning the moderating effect that environmental factors have upon the relationship between cognitive style and SDM outcomes. For example, Eisenhardt (1989), Khatri & Ng (2000), Hough & Ogilvie (2005) state that the use of intuition in unstable environments will result in effective SDM. Khatri & Ng (2000, p.64) state “given that hard information may be limited or unreliable, mental processes using soft information may be more appropriate.” Eisenhardt (1989) posits that the increased speed of an intuitive cognitive style can also result in effective SDM. Thus, the general view across the SDM and Organisational behaviour literature is that in an unstable environment, an intuitive cognitive style will have a positive effect upon SDM effectiveness.

The social-psychology literature adopts an opposite view point, however. Kahneman & Klein (2009) state that “evaluating the likely quality of an intuitive judgment requires an assessment of the predictability of the environment in which the decision is made and of the individual’s opportunity to learn the regularities of that environment. Subjective experience is not a reliable indicator of judgment accuracy.” (Kahneman & Klein, 2009, p.515).

Kahneman & Klein (2009, p. 520) define intuition as “the situation has provided a cue: This

cue has given the expert access to information stored in the memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition.” As such, the social-psychology literature would appear to be at odds with the SDM/organisational behaviour literature. The social-psychology literature suggests that a stable environment is likely to moderate the relationship between an intuitive cognitive style and SDM effectiveness, such that intuition will be effective under such environmental conditions. Conversely, an unstable environment, where decision makers cannot identify variables and make hypotheses about likely relationships (Fredrickson, 1984) is likely to moderate the relationship between an intuitive cognitive style and SDM effectiveness such that the relationship will be weaker under unstable environmental conditions.

This is therefore likely to be an area of SDM theory development which can benefit significantly from integrating these different bodies of literature. Indeed, conceptual development of the intuition construct itself within the SDM and organisational behaviour literature can benefit from adopting the characterisations contained within the social-psychology literature. Authors in the organisational behaviour domain (e.g. Khatri & Ng, 2000) and SDM domain (e.g. Hough & White, 2005; Covin et al 2001) have defined intuition in terms of gut feel. However, Kahneman & Klein (2009, p.521) state that “people have subjectively compelling intuitions even when they lack true skill, either because the environment is insufficiently regular or because they have not mastered it.” Stated formally, the following proposition can be made:

P3A: Environmental factors will moderate the relationship between an intuitive cognitive style and SDM effectiveness, such that under unstable environmental conditions the relationship will be weaker.

3.4.2 The Effects of Environmental Factors upon SDM Characteristics

The organisational behaviour and SDM domains of literature have indicated that in stable environments, information is more reliable whereas in unstable environments, data can be unreliable and information may also not be available (Eisenhardt, 1989; Khatri & Ng, 2000). This is likely to result in a flexible SDM process, as decision makers are forced to be recursive in the SDM process, and embrace alternative sources of information (Sharfman & Dean, 1997). It is expected therefore that in an uncertain environment organisations will be more flexible in SDM.

With regards to the second SDM characteristic, SDM comprehensiveness, the extant literature is ambiguous as to the effect that an unstable environment will have. Fredrickson (1984) found that organisations were more likely to be comprehensive in SDM in stable environments, as a stable environment increases the likelihood that decision makers will be able to identify key variables and form hypotheses regarding the relationships between these variables. Eisenhardt (1989) however contends that in unstable environments decision makers develop more strategic alternatives and are more comprehensive in their decision making. The literature which has sought to examine the effect of intuition (e.g. Khatri & Ng, 2000; Hough & Ogilvie, 2005) contends that decision makers are more likely to rely upon intuition in unstable environments, due to the absence of the requisite and reliable information. This would seem to accord with Fredrickson's (1984) perspective. It is likely therefore that in an unstable environment organisations will be less comprehensive in SDM. Stated formally, the following propositions can be made:

P3B: Environmental factors will have a direct effect upon flexibility in SDM, such that in unstable environments organisations will be more flexible in SDM.

P3C: Environmental factors will have a direct effect upon SDM comprehensiveness, such that in unstable environments organisations will be less comprehensive in SDM.

3.4.3 The Effects of Environmental Factors upon the Relationship between SDM

Characteristics and SDM Outcomes

There is a lack of consensus within the SDM literature as to the effect that an unstable environment has with regards to moderating the relationship between SDM characteristics and SDM outcomes. There is empirical evidence which indicates that environmental factors have a moderating effect in the relationship between SDM comprehensiveness (a characteristic of SDM) and SDM effectiveness (an outcome of SDM). For example, Hough & White (2003) found that environmental dynamism (rapidly changing technology and shifting competition) had a moderating effect upon the relationship between SDM comprehensiveness and organisational performance (a measure of SDM effectiveness), such that in the presence of environmental dynamism, the relationship was weaker. However, Dean & Sharfman (1996) could not find support for their hypothesis that SDM comprehensiveness had a positive effect upon decision effectiveness under unstable environmental conditions. Goll & Rasheed (1997) found that rationality (a closely associated construct to comprehensiveness) was associated with organisational performance in environments high in munificence (high growth industries) and dynamism (hostile and non-munificent). Given the lack of consensus within the literature it is only possible to suggest that an unstable environment will moderate the relationship between SDM comprehensiveness and SDM effectiveness. Stated formally, the following propositions can be made:

P3D: Environmental factors will moderate the relationship between SDM comprehensiveness and SDM effectiveness.

3.4.4 The Effects of Organisational Structure upon the Relationship between Cognitive Style and SDM Characteristics and Outcomes

The second contextual antecedent, organisational structure, has been the subject of some conceptual work and limited empirical work in the SDM domain of literature. Covin, Slevin & Heeley (2001) found that in high-technology industries an organic organisational structure is positively related to organisational performance when coupled with intuition. Covin et al (2001) also found that an organic organisational structure was associated with organisational performance in low-tech industries when coupled with a technocratic decision style, characterised by systematic analysis using quantitative techniques (and therefore distinctly similar to the analytical cognitive style). It is likely therefore that an organic organisational structure will moderate the relationship between cognitive style (analytical and intuitive) and SDM effectiveness, such that it will strengthen the effect. Stated formally, the following proposition can be made:

P3E: An organic organisational structure will moderate the relationship between cognitive style (analytical and intuitive) and SDM effectiveness, such that it will strengthen the effect.

3.4.5 The Effects of Organisational Structure upon SDM Characteristics

Miles, Snow, Meyer & Coleman (1978) identify an organisational type called a “prospector”, defined by its flexibility and organic organisational structure. An organic organisation structure, with decentralised units, projects and control with lateral communication (Miles et

al, 1978) is likely to be conducive for the flexible SDM (characterised by openness and recursiveness) described by Sharfman & Dean (1997). This view is supported by Davis et al (2009) who found that in dynamic environments, organisations with too much structure risk being constrained and lacking flexibility. It is likely therefore that an organic organisational structure will have a direct and positive effect upon SDM flexibility.

Miller (1987) found that structural formalisation (formal procedures, and job descriptions) was related to rationality and comprehensiveness in SDM. Davis et al (2009) identified that too much structure is preferable to too little in dynamic environments, and that structure enables decision making rules to be put in place to guide decision makers, also narrowing the range of options. Too much structure (Davis et al, 2009) will have a negative effect upon SDM flexibility. It may also be expected therefore, that organisations with structural formalisation will also be comprehensive in SDM. Stated formally, the following propositions can be made:

P3F: Organisations with an organic organisational structure will be flexible in SDM.

P3G: Organisations with structural formalisation will be comprehensive in SDM.

P3H: Structural formalisation will have a direct and negative upon flexibility in SDM.

3.4.6 The Effects of Organisational Structure upon the Relationship between SDM

Characteristics and SDM Outcomes

Very limited empirical work exists which provides insight regarding the effect of organisational structure upon the relationship between SDM characteristics and SDM outcomes. An exception exists in the work Covin et al (2001), who indicate that an organic structure is likely to moderate relationship between SDM comprehensiveness and SDM effectiveness in low-tech industries, such that it will strengthen the effect. Stated formally, the following propositions can be made:

P3I: An organic organisational structure will moderate the relationship between SDM comprehensiveness and SDM effectiveness, such that it will strengthen the effect.

3.4.7 Summary of the Effects of Contextual Antecedents

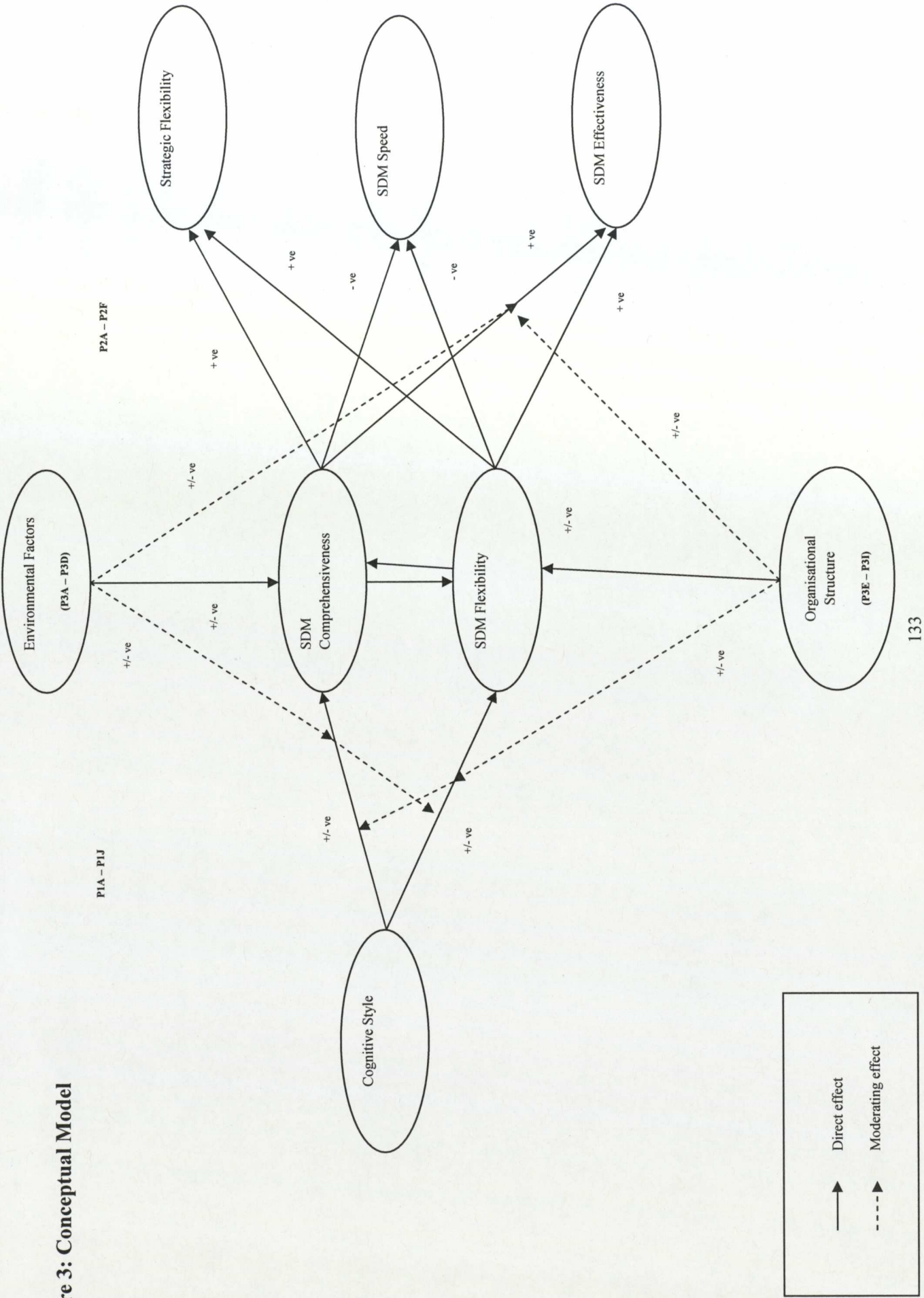
The SDM, organisational behaviour, marketing, and social-psychology literature provide very limited empirical evidence upon which hypotheses can be formed concerning: (i) the effects of contextual antecedents (environmental factors and organisational structure) upon the relationship between cognitive style and SDM characteristics (flexibility and comprehensiveness) and SDM outcomes (speed, effectiveness, and strategic flexibility) (e.g. Khatri & Ng, 2000; Covin et al, 2001; Kahneman & Klein, 2009); (ii) the effects of contextual antecedents upon SDM characteristics (e.g. Miles et al, 1978; Miller, 1987; Eisenhardt, 1989; Sharfman & Dean, 1997; Davis et al, 2009), and finally; (iii) the effects of contextual antecedents upon the relationship between SDM characteristics and outcomes (e.g. Dean & Sharfman 1996; Goll & Rasheed, 1997; Covin et al, 2001; Davis, 2009). Empirical research is therefore required in order to examine the nature of the relationships that exist

between contextual antecedents and; cognitive style, SDM characteristics and SDM outcomes.

4.0 CONCEPTUAL MODEL

The research propositions stated in section 3 can be summarised in the following conceptual model:

Figure 3: Conceptual Model



4.1 Summary

Organisations adapt and change in order to better match their resources to the environment through a process referred to as strategic decision making (Chakravarthy, 1982; Coombe & Greenley, 2004; Nutt, 1993; Sharfman & Dean, 1997). Strategic flexibility is important in enabling organisations to adapt, because it provides new and alternative options for responding to the demands of the environment (Rudd et al, 2008).

The systematic literature review identified that in addition to the SDM literature, literature pertinent to SDM exists in the marketing, organisational behaviour, and social-psychology domains. In order to develop theory within the SDM domain of literature, an integrated approach is required whereby the literature from the SDM domain, as well as the marketing, organisational behaviour and social-psychology domains of literature are combined. The importance of this approach is manifest in the incomplete conceptualisation of intuition (e.g. Hough & White, 2005; Khatri & Ng, 2000), which does not adopt the boundary conditions for intuition which have been developed within the social-psychology literature (e.g. Kahneman & Klein, 2009).

The critical synthesis of the literature identified the centrality of: (i) cognitive style; (ii) SDM characteristics (flexibility and comprehensiveness); (iii) SDM outcomes (strategic flexibility, effectiveness, and speed); (iv) environmental factors, and; (v) organisational structure. Several gaps in knowledge are evident from the critical literature synthesis. These include: (i) the direct effects of cognitive style upon SDM characteristics; (ii) the indirect effects of cognitive style upon SDM outcomes; (iii) the conceptualisation and measurement of

cognitive style, and the conditions under which a certain category of cognitive style may be effective in SDM; (iv) How SDM characteristics affect SDM outcomes; (v) a definition and measurement device for effective SDM; (vi) a lack of consensus concerning the moderating effect of environmental factors and organisational structure upon the relationship between cognitive style and SDM outcomes, and also upon the relationship between SDM characteristics and SDM outcomes, and; (vii) the direct effects of environmental factors and organisational structure upon SDM characteristics.

5.0 PROPOSED RESEARCH METHODOLOGY

This section of the dissertation outlines a proposed research methodology in order to complete the research. Furthermore, this section outlines the fundamental philosophical viewpoints pertinent to the knowledge generation process.

5.1 The Knowledge Generation Process

The PhD research topic will be conducted from a Realist's philosophical perspective. Lee & Lings (2008, p.31) define a Realist philosophy as being the "belief in an objective world which we can observe and measure. However, realist philosophy also contends that there are some things beyond our ability to confirm their existence directly, but yet still have independent existence." The realist philosophy accepts theories which are abstract and unobservable (Healey & Perry, 2000; Lee & Lings, 2008), and this is of fundamental importance given the centrality of cognitive style and strategic flexibility in this study. Cognitive style and strategic flexibility cannot be observed directly; however, their presence can be inferred by observable indicators. For example, existing strategic flexibility research has utilised certain measures in order to infer strategic flexibility which include changes in: production and the product mix, as well as the organisation's ability to obtain external finance (Rudd et al, 2008).

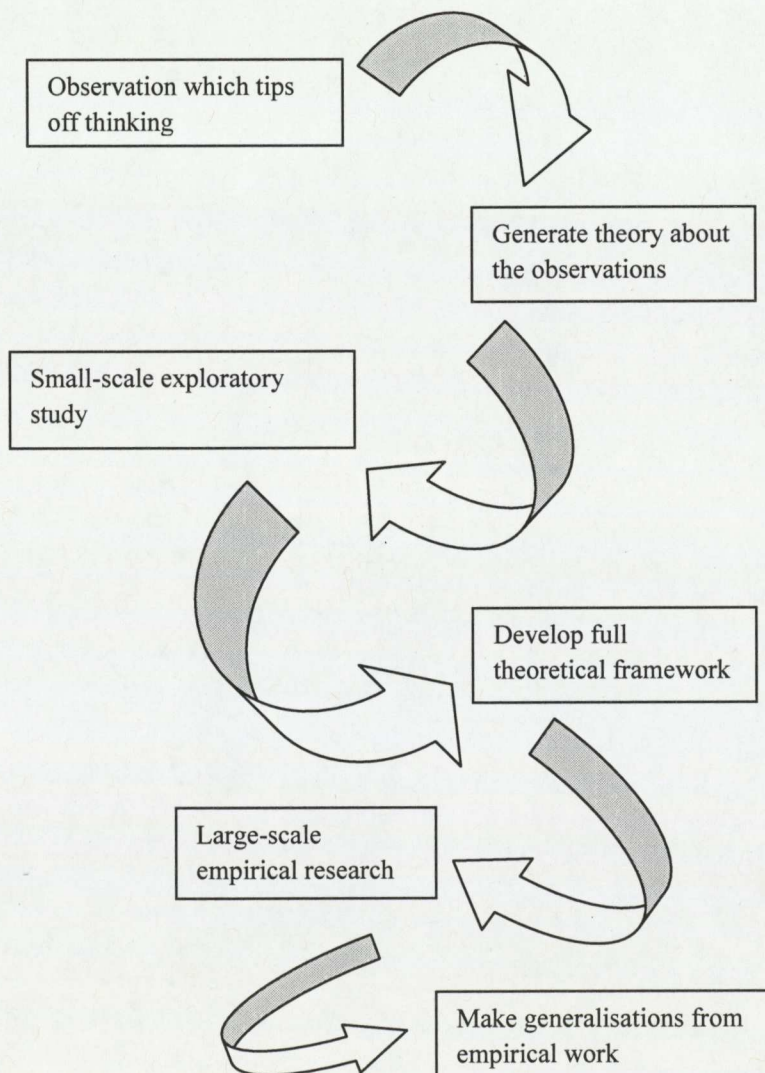
The PhD will be written from the perspective of a researcher whose ontology is that an observable reality exists, and that it is possible to objectively understand and explain this reality; however this reality can only be imperfectly understood and is only probabilistically apprehensible (Healey & Perry, 2000). The PhD shall also be written with a Realist's

epistemology, whereby it will be acknowledged that whilst unbiased, generalisable knowledge can be created, such knowledge may also be context specific.

5.2 Induction and Deduction

Whilst the research methodology literature presents a dichotomy of elementary logic (e.g. Bryman & Bell, 2007), in reality the research process alternates between induction and deduction (Lee & Lings, 2008), as represented in figure 4:

Figure 4 – Induction and Deduction in Practice (Lee & Lings, 2008).



The initial idea for the PhD topic was generated whilst working in industry and observing organisation's strategic decision making. To supplement this idea, a systematic review of the strategic management, marketing, organisational behaviour, and social-psychology literature has been performed in order to generate theory regarding the initial observations. Therefore, the next phase of this research process will be to conduct a small scale study to develop and refine the research propositions contained within this thesis. Once this has been performed, a full theoretical framework will be developed and large scale empirical research conducted. The following sections discuss firstly, the exploratory small scale study, and secondly, a large scale empirical study.

5.3 Small Scale Exploratory Qualitative Study

The application of variables such as cognitive style and strategic flexibility in the context of SDM is a relatively nascent approach to theory building in the SDM domain. A qualitative approach to understanding these constructs and their dimensions may in the long term yield more success in their application as variables in SDM (Edmondson & McManus, 2007). A qualitative approach will enable further theory building as well as the development and refinement of the research propositions contained within this dissertation (Bryman & Bell, 2007). Such an approach will enable the depth, detail, and facets of the constructs to be captured, which may ultimately lead to more effective measurement of these constructs when large scale empirical research is conducted. Indeed, this approach addresses a criticism which has been levelled at strategy research: "there has been a tendency to prescribe prematurely in management policy – to tell how it should be done without studying how it is done and why...prescriptions become useful only when it is grounded in sophisticated description." (Mintzberg, 1977, p.91). Snow & Thomas (1994) identify that for theory

building, whereby hypothesised relationships are developed, interviews are an appropriate research method in order to explain theory (how and why certain variables are related) and predict theory (the conditions under which the theory holds true).

It is therefore proposed that approximately 15 interviews will be conducted with senior decision makers (e.g. CEOs and Managing Directors) of organisations. It is intended that this will be completed, with all interviews transcribed, by the end of December 2010.

Cassell & Symon (2004, pg. 11) state that “the goal of any qualitative interview is to see the research topic from the perspective of the interviewee, and to understand how and why they have come to this perspective.” A principal advantage of this method is that it enables topics with a number of different levels of meaning to be explored (Cassell & Symon, 2004), which makes it ideally suited to exploring the multi-faceted nature of strategic decision making.

Saunders, Lewis & Thornhill (2007, p.315) state that “where it is necessary for you to understand the reasons for the decisions that your participants have taken...it will be necessary for you to undertake a qualitative interview.”

There exist a number of different types of interview, including ‘in depth’, ‘exploratory’, ‘semi-structured’, and ‘unstructured’ (Cassell & Symon, 2004). The use of unstructured interviews in the context of this research has the potential to be especially powerful. The unstructured interview is believed to be capable of producing rich and insightful data, and it is unlikely that the true cognitive processes underlying strategic decision making would be captured by a formal structured interview “untainted by relationship factors” (Cassell &

Symon, 2004, p. 11). A number of alternative methods which could be utilised instead of interviews exist. These are now discussed:

5.3.1 Focus Groups

Lee & Lings (2008, p. 221) define a focus group as “a form of qualitative data collection which involves the simultaneous participation of a number (usually five to eight) of respondents.” Lee and Lings (2008) suggest that a major benefit of focus groups is that it enables a wide range of viewpoints to be provided, and it also allows for the views of the participants to be challenged and argued with. Lee & Lings (2008, p. 222) state that a major advantage of focus groups is that it provides “more opportunity to study how the social world is constructed by participants – as we do not experience the world in isolation, but construct it together with other actors.” Given that strategic decision making is a social and dynamic process, the use of focus groups is likely to yield very valuable data. However, Byers & Wilcox (1991) highlight the risk that participants may provide responses which they deem to fit in with the social norm. Focus groups are also likely to be logistically problematic to organise, and require the researcher to be skilled in this area.

5.3.2 Action Research

Saunders et al (2007, p.591) define action research as being “concerned with the management of a change and involving close collaboration between practitioners and researchers.” A fundamental aspect of action research is that the researcher is actually part of the organisation within which the research is taking place. It is clear that such research would yield rich insight into the strategic decision making process that arguably no other research method

would be capable of. Action research is generally considered to benefit both researcher and the sponsor. However, in the context of this research it may be argued that the research would be of limited tangible benefit to the sponsor organisation. A practical constraint may also exist in so much as it may be problematic to find an organisation willing to host a researcher conducting action research given the extremely sensitive nature of the information and processes which the researcher will gain insight into.

5.3.3 Discourse analysis

Cassell & Symon (2004, p. 203) define discourse analysis as being “concerned with how individuals use language in specific social contexts.” Discourse analysis enables researchers to understand why individuals “construct themselves and the world in particular ways” (Cassell & Symon, 2004, p. 203). As such, discourse analysis would appear to be a technique which may yield insight into the cognitive styles of strategic decision makers. Meeting minutes from Board meetings, and email exchanges between senior decision makers may provide rich sources of data for discourse analysis in this particular research context.

Saunders et al (2007) state that a principle disadvantage of this research method is that considerable experience is required before a researcher is comfortable with the process. A more practical limitation also exists in the difficulty that may be encountered in obtaining access to written manuscripts relevant to the strategic decision making process.

5.3.4 Ethnography

Saunders et al (2007, p. 597) define ethnography as a technique which “focuses upon describing and interpreting the social world through first hand field study.” The authors go

onto state that most ethnographic research entails extended participant observation.

Ethnography would undoubtedly yield rich contextual insights into the strategic decision making process, and the cognitive styles displayed by decision makers. Lee & Lings (2008, p.) contend that “ethnographic research is based on the idea that first-hand experience of culture is a better basis for understanding it than looking in from the ‘outside’.” Whilst from a practical perspective gaining access to organisations willing to participate in this type of study may prove difficult, the potential benefits are enormous as “true ethnographic studies normally result in rich, ‘thick’ descriptions of social context” (Lee & Lings, 2008, p. 63).

5.3.5 Summary of Small Scale Exploratory Qualitative Study

This section has contended that the research topic has a number of different qualitative research techniques to draw upon, namely: Interviews, focus groups, action research, discourse analysis and ethnography. Of these, action research would appear to be the least practical option given the difficulty that may be encountered in finding a sponsor organisation due to a lack of benefit which is likely to be derived from the sponsor.

Ethnographic and action research techniques may also suffer from similar constraints in so much as many organisations may be unwilling to allow a researcher to “immerse themselves” (Lee & Lings, 2008, p. 62) in the organisation and have access to such sensitive first hand information.

Discourse analysis would be hindered by a lack of experience on the researcher’s behalf which is likely to hinder the interpretation of the data, and focus groups are unlikely to be a practical method given the logistical challenges and lack of experience of the researcher.

Interviews are likely to be a more practical alternative in terms of accessing respondents, and through using unstructured interviewing techniques, may yield some rich data which captures many of the individual and contextual factors associated with strategic decision making.

5.4 Large Scale Empirical Study

Realists are generally associated with quantitative research methods (Lee & Lings, 2008). Quantitative methods allow Realists to “uncover the complexity of causal relations” (Lee & Lings, 2008, p.30). The systematic literature review has identified the need for empirical research in order to further develop knowledge in the SDM domain, and specifically, to further develop understanding as to how individual level variables such as cognitive style influence SDM characteristics and outcomes. It is unlikely that such causal relationships could be inferred through qualitative research methods alone, as the aim of such qualitative research would be to gain insight, rather than infer causality. The small scale qualitative study will enable the development of hypotheses, and should clarify the relationships which have been deduced from the literature. However, in order to test this theory and relationships, a large sample will be required (Snow & Thomas, 1994). Therefore, qualitative and quantitative methodologies will be combined. Jick (1979, p. 602) states that “qualitative and quantitative methods should be viewed as complementary rather than as rival camps.” Snow & Thomas (1994, p.468) state that “explanatory studies are normally well grounded in theory that posits an association between variables. However, there may be inadequate or conflicting arguments about the direction of the relationship or the generalisability of the association across different settings. Thus, the hallmark of the explanatory study is a large sample size, coupled with hypothesis testing.”

An important aspect of quantitative research methods is measurement. Measurement enables the linking of numerical quantities to the attributes under scrutiny (Lee & Lings, 2008). This is of fundamental relevance to this research given the centrality of individual level variables, such as cognitive style, and strategic flexibility, which are unobservable variables. Therefore, the presence or absence of constructs such as strategic flexibility is inferred by use of a multi item scale (Lee & Lings, 2008). For example, Rudd et al (2008) developed a scale with items (e.g. changes in product mix, funding and computing capacity) to capture the dimensions of strategic flexibility. These dimensions enabled the authors to estimate the latent construct (strategic flexibility).

In light of the conceptual model which has been developed so far, it is likely that a multivariate form of analysis will be required in order to simultaneously assess three or more variables (Bryman & Bell, 2007). It is likely that structural equation modelling (SEM) will therefore be employed to conduct the data analysis. SEM is “a technique used for specifying and estimating models of linear relationships among variables.” (MacCallum & Austin, 2000, p. 202). Structural equation models can include both measured variables and also latent variables. SEM has significant advantages over standard regression techniques as it enables the study of multiple simultaneous effects. (Lee & Lings, 2008). Indeed, alternatives to SEM may include principal component analysis, factor analysis, discriminant analysis, or multiple regression. However, SEM has the advantage of flexibility over these alternative analysis methods. Specifically, SEM enables the researcher to “(a) model relationships among multiple predictor and criterion variables, (b) construct unobservable LVs (latent variables), (c) model errors in measurements for observed variables, and (d) statistically test a priori substantive/theoretical and measurement assumptions against

empirical data. (i.e., confirmatory analysis). Thus, SEM involves generalisations and extensions of first-generation procedures.” (Chin, 1998, p.1).

It has been noted that a limitation with SEM exists in that it only satisfies two of the three conditions for a causal relationship (Bollen, 1989). The SEM approach addresses association and isolation, but not directionality. This limitation can be addressed however, by citing the extant literature as supporting the direction of causality proposed within the conceptual model. Tomarken & Waller (2005, p.46) also highlight that SEM suffers because “nonstandard and complex model specifications are challenging for the average user and thus susceptible to error. Indeed, errors have been noted in the specifications developed by SEM specialists.” Tomarken & Waller (2005) also cite further limitations concerning convergence problems, and that “because products of normally distributed observed and latent variables are themselves not normally distributed, standard errors and estimates of fit might not be accurate.” (Tomarken & Waller, 2005, p.46). However, in spite of these limitations SEM has a number of strengths, including its ability to “specify latent variable models that provide separate estimates of relations among latent constructs and their manifest indicators.” (Tomarken & Waller, 2005, p.34). Furthermore, Tomarken & Waller (2005, p.34) state that SEM offers “measures of global fit that can provide a summary evaluation of even complex models that involve a large number of linear equations. Most alternative procedures that might be used in place of SEM (e.g. multiple regression) to test such models would provide only separate “mini-tests” of model components that are conducted on an equation-by-equation basis.”

It is likely that a self-completion questionnaire will be the data collection instrument utilised, as it presents the most likely method of generating a sufficiently large sample whilst minimising costs (Snow & Thomas, 1994). According to Bryman & Bell (2007) self-completion questionnaires have the following benefits: (i) cheap to administer; (ii) quick to administer; (iii) avoids interviewer biases and effects; (iv) avoids interviewer variability, and; (v) is convenient for respondents. Self-completion questionnaires are not without their limitations however, such as the inability to probe, and low response rates (Bryman & Bell, 2007). However, the effects of such disadvantages can be minimised by: (i) an effective covering letter accompanying the survey; (ii) a systematic process for following up non-returns, and; (iii) ensuring that the survey is as short as is feasible. (Bryman & Bell, 2007). It is intended that the large scale empirical investigation will be complete, and data analysed by March 2012.

5.5 Ethical Considerations

A fundamental ethical principle within the context of research is informed consent. This principle ensures that the participant is protected, and is partaking in the research voluntarily. Participants' anonymity must also be protected, and confidentiality maintained. As such, respondents will be assured of the confidentiality and anonymity of their responses. A further ethical issue of key importance is that of the storage and preservation of the data. It will be ensured that appropriate safeguards are in place to ensure that the data is secure and its confidentiality cannot be compromised. As part of the research design, a research proposal will be submitted to the Aston Business School Research Ethics Committee detailing the ethical probity of the research. This safeguard will ensure that consideration has been given to all potential ethical risks, and also how these risks can be mitigated.

5.6 Summary of Proposed Research Methodology

In order to complete the research, a Realists' philosophical perspective will be adopted, where the purpose of the research will be to infer causality, whilst embracing unobservable constructs (Lee & Lings, 2008) such as strategic flexibility and cognitive style. An exploratory qualitative study will be completed in order to explore and develop the concepts, and research propositions contained within this dissertation. The results of the exploratory study will then be incorporated into a full theoretical framework, upon which a large scale empirical investigation will be based (in order to offer explanation in the testing of theory), using a multivariate form of analysis. SEM will enable the simultaneous assessment of the variables outlined within the conceptual model.

6.0 DISSERTATION SUMMARY

Organisations change and adapt through a process labelled as strategic decision making (Coombe & Greenley, 2004; Nutt, 1993; Sharfman & Dean, 1997). The scope of the systematic literature review incorporated the SDM, marketing, organisational behaviour and social psychology domains of literature which each contain literature which is relevant to strategic decision making, although each domain has evolved disparately. In order to progress knowledge in the SDM domain, it is essential to integrate the literature from these different domains (Duhaime & Schwenk, 1985; Hough & Ogilvie, 2005) which will enable more informed conceptualisation and measurement of theory within SDM.

The critical synthesis of the literature identified the centrality of: (i) cognitive style; (ii) SDM characteristics (flexibility and comprehensiveness); (iii) SDM outcomes (strategic flexibility, effectiveness, and speed); (iv) environmental factors, and; (v) organisational structure.

Several gaps in knowledge are evident from the critical literature synthesis. These include: (i) the direct effects of cognitive style upon SDM characteristics; (ii) the indirect effects of cognitive style upon SDM outcomes; (iii) the conceptualisation and measurement of cognitive style, and the conditions under which a certain category of cognitive style may be effective in SDM; (iv) How SDM characteristics affect SDM outcomes; (v) a definition and measurement device for effective SDM; (vi) a lack of consensus concerning the moderating effect of environmental factors and organisational structure upon the relationship between cognitive style and SDM outcomes, and also upon the relationship between SDM characteristics and SDM outcomes, and; (vii) the direct effects of environmental factors and organisational structure upon SDM characteristics.

Empirical research which addresses the gaps in theoretical understanding highlighted by the systematic literature review will make a significant contribution to theory within the SDM domain of literature. An exploratory qualitative study will be completed in order to explore and develop the concepts and research propositions contained within this dissertation. The results of the exploratory study will then be incorporated into a full theoretical framework, upon which a large scale empirical investigation will be based, using a multivariate form of analysis.

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8.0 APPENDICES

8.1 Systematic Literature Review Methodology

Table 12 – Summary of results for key search terms - Aston University E-Library.

Database	Strategic Decision Making	Stratig* Decision	Decision	Decision Making	Environment + Strategic Decision Making	Organization Structure + Strategic Decision Making	Cognitive + Strategic Decision Making	Cognitive + Decision Making	Flex* + Strategic Decision Making	Flex* + Decision Making	Characteristics + Strategic Decision Making	Outcomes + Strategic Decision Making
ABI/inform Global Including Trade & Industry (ProQuest)	9,514	0	420,882	93,411	1,369	442	212	1,703	0	0	0	498
Business Source Premier (EBSCO)	6,794	29,306	334,400	70,534	763	763	225	1,850	156	852	0	315
Emerald Full Text	0	0	0	0	0	0	0	0	0	0	0	0
JSTOR Business	15,755	20,911	81,494	55,527	9,751	9,413	3,341	6,298	3,959	9,340	0	7,009
Science Direct	69,773	10,366	795,864	411,803	51,011	41,129	16,128	80,712	19,488	59,946	2	39,284
Swetswise	491	0	496	498	472	488	499	496	0	0	0	495
EconLit with full text (EBSCO)	19,640	54,688	116,994	76,184	12,432	9,441	2,304	5,509	4,734	11,385	1	9,392
International Bibliography of the Social Sciences (EBSCO)	1,600	4,414	39,083	26,225	187	31	52	536	16	159	0	80
PsycArticles	29	356	4,074	2,412	0	0	7	414	0	8	0	4

Note: * denotes an instruction to the database to search for all words including that term. e.g. If the letters 'stratig*' were input, the database would search for 'strategy' and 'strategic' as both contain 'stratig'.

The Aston E-library lists the most relevant of the articles which it has identified for each search and these were reviewed in order to determine their appropriateness. Reviewing each one of the journals identified by the Aston E-Library searches as detailed in table 12 would clearly be an impractical task.

The literature search terms detailed in table 12 were also input into Google, Google Scholar, and ProQuest in order to provide comfort over the completeness of the search performed using the Aston University E-Library programme (which interrogates the literature databases listed in table 12). The literature search using the terms listed in table 12 built upon earlier searches which used the following terms: (i) strategic planning and performance; (ii) small business + strategy; (iii) small business and strategic planning; (iv) small business + strategic decision making; (v) strategic flexibility; (vi) strategic adaptation; (vii) slack resources, and; (viii) strategic change. These initial searches identified the centrality of the strategic decision making topic.

The literature search utilising the search terms detailed in table 12 identified the relevance of three domains of literature (marketing, organisational behaviour, and social-psychology), in addition to the strategic management literature. The journals which were searched within for each of these three additional bodies of literature are detailed below:

(i) Marketing: Journal of Marketing; European Journal of Marketing; Journal of Marketing Research; Qualitative Market Research.

(ii) Organizational Behaviour: Organizational Behaviour and Human Decision Processes; Human Resources; Journal of Managerial Issues; International Journal of Organizational Analysis; Organization Studies; Journal of Organizational Behaviour; Journal of Managerial Psychology.

(iii) Social-Psychology: American Psychologist; Journal of Personality & Social Psychology; Journal of Experimental and Social Psychology: Learning, Memory, and Cognition; Journal of Occupational and Organizational Psychology; Journal of Behavioural Decision Making; Psychological Bulletin; Psychological Review; Journal of Applied Social-Psychology; British Journal of Psychology; Personality and Individual Differences.

The afore listed journal titles were selected based upon either: (A) Being a 3* or 4* ranked journal per The Association of Business Schools Academic Journal Quality Guide (June 2009), or; (B) Being identified as a relevant reference from another journal.