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Phyllis JOHNSON

**A Study of Cognition and Behaviour in Top Management
Team Interaction.**

Supervisors: K. DANIELS
A. HUFF

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ABSTRACT

This thesis is concerned with strategy development processes in top management teams. It focuses on an explanation of consensuality in these teams; in particular, collective cognition and its relationship to convergent behaviour.

Four different explanations of the nature of collective cognition and its relationship to convergent behaviour were established in a review of the extant literature. These explanations were operationalised in the form of four propositions that were tested using a progressive case study design.

In total three case studies were conducted. The first case, University Business School, was used as a pilot and helped to generate a more concrete operationalisation of three of the four propositions. These were then examined and refined in a second case study; Colour Scheme. The third and final case, Construct Chemicals, was conducted longitudinally over time and tested these refined propositions.

In all of the cases, data was collected in a similar way. That is, team members were interviewed both before and after important strategy development meetings. During these interviews, team members' views about their strategic issue were approximated using a cognitive mapping technique. Other additional data were also collected at this time. The behaviour exhibited during team meetings was observed and discussions tape recorded. In the first two cases, only one meeting was attended, whereas in the final case four meetings were attended.

These qualitative data were analysed to ascertain the presence and nature of collective cognition in the teams and to explore the extent to which this collective or indeed individual cognition was reflected in the behaviour observed in the team environment during periods of strategy development.

It was established that in the organisations studied, collective cognition existed in various forms within dyads or subgroups within the top teams. However, several context dependent contingent variables were found to affect the development of collective cognition in the teams. Equally, a range of context specific contingencies mediated the relationship between cognition and behaviour in the top team environment. All of these variables were built into a complete framework that represented the data collected.

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This thesis is dedicated with much love to my husband and best friend

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A THOROUGHLY APPROPRIATE THOUGHT

In the light of knowledge attained, the happy achievement seems almost a matter of course, and any intelligent student can grasp it without too much trouble. But the years of anxious searching in the dark, with their intense longing, their alternation of confidence and exhaustion, and the final emergence into the light - only those who have themselves experienced it can understand that.

Albert Einstein.

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CHAPTER ONE

Introduction and Overview

1.1 Introduction

This research explored the process of strategy development in top management teams. Research interested in this organisational process, has increasingly referred to the way in which senior managers use and make sense of information. Indeed, a specialised stream of research; managerial and organisational cognition (MOC), has focused on this aspect of strategy development.

Within the MOC field of research, attention was initially directed towards a general concern with the application of cognitive theory to the management context, as opposed to remaining committed to the explanation of action and the *processes* of strategy development. In his review and critique of the MOC literature, Walsh (1995) argued that the field ought to strive to return to position where the primary concern was with process; cognition and its relationship to behaviour. In terms of the strategy development process; an activity especially related to top teams, Walsh argued that it was important to explore the relationship between cognition and behaviour at the collective or group level.

This research has been specifically concerned with moving beyond individual strategists' minds and exploring the potential existence and behavioural impact of collective cognition within top management teams engaged in strategy development. The research was structured around two questions:

- What is the nature of collective cognition ?
- What is its relationship to convergent behaviour and what context dependent factors mediate this relationship in TMT's engaged in the process of strategy development ?

It is argued in the following chapter that the existence of some form of collective cognition in strategy development teams is an implicit and common assumption. For example, Barr & Huff (1997) recently argued that an organisation as a whole must have a significant level of "shared schematic frameworks" amongst its members to be a "viable economic unit" (p.341). In discussions about the effect that interpretive schemes, (Bartunek, 1984) recipes (Spender, 1989) and paradigms (Johnson, 1987) have on strategy development, some form of collective cognition has been assumed. The assumption of a relationship between collective cognition and consensuality of a team is perhaps most apparent in the consensus performance literature (e.g. Dess & Orger, 1987; Woolridge & Floyd, 1989; Dess & Priem 1995).

Amongst others, Klimoski & Mohammed (1994) have argued that it is far from certain what is meant by collective cognition; they ask what kind of cognition is held collectively, how is it achieved and what degree of collectivity is required between

individuals before it can be suggested to account for their behaviour. In this thesis, several literatures are reviewed to establish different explanations of the nature of collective cognition and its relationship to convergent or consensual behaviour in teams. Four explanations were uncovered and encapsulated in basic propositions to be tested, explored and developed during the research. These are fully explained in the chapter that follows but are summarised briefly as follows. Collective cognition and convergent behaviour in the top team environment are the products of:

1. Cognitive homogeneity in terms of a team's strategic issue
2. Cognitive overlap in terms of a team's strategic issue
3. Distributed network of diverse issue based cognition held together by a shared view of how the team ought to interact

or that

4. Collective, issue or team based cognition are not the most useful ways of accounting for behaviour in the top team environment.

1.2 Research Approach

In this thesis, different explanations of collective cognition are operationalised in the form of propositions, and their appropriateness examined and tested in top management team contexts. This was achieved by first using a pilot study, University Business School¹, to operationalise four basic propositions. It is important to note that this pilot case began by testing only the first, somewhat naïve, proposition. Other propositions emerged as a result of the analysis of this case. In this way the first proposition was used as a platform from which to generate the other three. All four of these propositions were then 'tested' with the board of a family business (Colour Scheme) and refined according to the extent to which they fitted the data collected there. Finally, these refined propositions were 'tested' to examine their appropriateness in the explanation of longitudinal data collected during four months of fieldwork and close contact with the top team of a subsidiary of a major multi-national organisation.

In each of these three cases, team members were interviewed before and after important strategy development meetings as well as being observed during the meetings themselves. During each interview, team members' cognition was approximated using a cognitive mapping technique described in Chapter Three.

This form of design, described as a progressive case study design, relies upon the process of incremental refinement of basic propositions in localised contexts. This approach was considered to be especially applicable because of the lack of clarity about the basic concept at the centre of the research; collective cognition. By focusing on the

¹ Note all names have been changed

detail in three different contexts, the progressive case design, whilst testing propositions, remained exploratory and acted as a mechanism to contribute some clarity to this useful concept. In total, the propositions went through three stages of evolution.

Bearing in mind the in-depth, case based nature of this research, there are a number of features that need to be made explicit in this opening chapter in order to set expectations at an appropriate level. First the data presented here is rich qualitative data, gathered through *lived experience* in the field. Consequently, when the cases are reported, there is an attempt to reflect this by means of rich description. Second, even though the research is structured around the testing of four propositions, these were continually refined through an ongoing process of iteration between data and literature and so fundamentally, the research is exploratory in nature. Third, as only three cases were conducted, the research is based on the relevance of theory in practice and does lay claim to proven generalisability. Finally, the progressive nature of the design means that, to a large extent, the central argument of the research *emerges* during the thesis: each chapter contributes to the final discussion and conclusions that appear in Chapters Eight and Nine.

1.3 Overall Conclusions

The central argument to emerge by the end of this research is concerned with the *context dependency* of both the form that collective cognition can take, its potential to emerge at all and its affect on the teams' ability to converge in relation to their developing strategies.

It was established at the end of the analysis of the cases that collective cognition does not appear to exist as issue based homogeneity but can exist in the form of overlap (the sharing of some core aspects of issue based cognition) between dyads or sub-groups within a team. At no time during this research was there evidence of teamwide overlap. In addition three different forms of overlap were found to exist: thematically consistent and sustained overlap; thematically variable but sustained overlap and thematically variable and temporary overlap. These are explained in detail later in the thesis. The type of overlap dyads or sub-groups shared appeared to be contingent on several context specific factors. It was also established that collective cognition can exist in the form of a team based as opposed to issue based phenomenon. That is, team members can share an understanding of appropriate ways of interacting in their team and this (rather than their views of the strategic issue they are discussing) guides their behaviour in the team environment. It emerged that the extent to which such team based collective cognition was able to affect team behaviour and in particular their propensity towards consensuality, was also dependent on a range of context specific contingencies. A framework is developed in the thesis that represents the different forms of collective cognition, their relationship to behaviour in the team environment and the range of variables that were found to mediate this.

1.4 Outline of the Chapters

The thesis comprises eight further chapters. *Chapter Two* puts forward an argument for the cognitive approach to understanding strategy development. It then goes on to focus on collective cognition and reviews several literatures that have explored this phenomenon. These include, cognitive science, socio-cognition, MOC and human factors (ergonomics). This review is structured around four different explanations of collective cognition and its relationship to convergent behaviour which are operationalised in the form of basic propositions. This chapter concludes with the two research questions discussed earlier.

Chapter Three explains the research design, specific methods and analyses that were used to test the propositions and in so doing offers a response to the research questions of the thesis. In this chapter, only general aspects of data analysis are discussed as fuller, case specific accounts, appear in the case study chapters themselves.

The pilot case of the research, conducted in University Business School, is presented in *Chapter Four*. Here the first naïve proposition of the research is tested and found to be unable to account for the data collected. The three other basic propositions listed above are constructed by iterating between the data and the literature.

These new propositions are then examined in the context of the board of a family business called Colour Scheme. This case is written up as *Chapter Five*. A similar structure to the previous chapter is followed here, in that each proposition is tested in terms of the extent to which it accounts for the data collected. The patterns found in the data that could not be accounted for by these propositions are described and used to refine the propositions resulting in their second stage of evolution.

Finally, these evolving propositions are examined by means of a longitudinal case with the top team of a subsidiary of a major multinational organisation. The case of Construct Chemicals is written up in two stages. *Chapter Six* presents the analysed data from the case, whilst *Chapter Seven* offers an interpretation of the data in terms of the propositions. At the end of this chapter, the patterns that fall outside of the explanations the propositions were able to offer are highlighted. The propositions are then refined in their third and final stage of evolution.

Chapter Eight, presents a summary of the findings of all three cases which includes a contingency based model representing the relationship between cognition and behaviour. The second half of this chapter returns to the literature discussed in Chapter Two and discusses both the overall argument of the research as well as the specific contributions it has made to extant knowledge.

Finally *Chapter Nine*, the concluding chapter of the thesis, begins by reiterating the major findings of the work before moving on to discuss the limitations of the work, the implications for future research, the practical implications of the work and the key personal lessons learned during the PhD process.

CHAPTER TWO

Literature Review and Generation of Research Question

2.1 Introduction

This chapter puts forward the central theoretical argument of the thesis. It begins by making a case for the cognitive approach to the study of strategy development processes. It then moves on to review the body of work that has previously documented such an approach, known as the managerial and organisational cognition literature (referred to from this point on as MOC). This review takes a critical stance and uses the work of Walsh (1995) to outline an acceptable agenda for future research in this field.

The chapter then focuses on one of the central areas of concern to emerge from this critical review, namely the lack of clarity around the concept of collective cognition. The extant literature that explores the concept of collective cognition is reviewed and organised in terms of four competing, but not mutually exclusive explanations of collective cognition and its potential relationship to convergent behaviour in strategy development teams. These explanations are operationalised in terms of four propositions which in turn are used to generate two research questions that act as a foundation for the research design that follows in Chapter Three.

2.2 Cognition & Strategy Development Processes.

In this section it is argued that the cognitive approach can make a contribution to current understanding of strategy development processes in top management teams. An overview of the challenge of the cognitive approach, its history and future directions is also included in this section. But first, it is important to be clear about the way this research conceptualised strategy development.

The process of strategy development in organisations can be thought of as some form of linear process: information search, idea generation, decision and implementation. However, as argued by Eden & Ackerman (1998) it is beginning to be widely accepted that in reality, strategy development is an emergent process in which all of the above activities are to some extent happening simultaneously and inform one another. In addition, the strategy or general course of action an organisation follows can emerge almost tacitly from its culture and the implicit assumptions that are taken for granted by members of the organisation (Johnson, 1987). In fact, it may be something of a myth to conceptualise strategy development in organisations as the activity of 'strategic decision making' taking place at a single point in time in the top team environment. Instead, this research sees strategy development as a gradual convergence around a course of action, or trajectory that may or

may not include formalised decision making. In short strategy development can be viewed as an *everyday activity* (Johnson & Huff, 1998) embedded in the micro processes of the organisation. However, it is considered to be likely that the activities that facilitate such convergence will take place in and around the top team who usually make up the most influential group of individuals within an organisation (Kakabadse & Myers, 1996) and are therefore more likely to determine its direction.

i) Where the Cognitive Approach Fits Within Strategy Development Research.

Major decisions with long term, far ranging implications for structure, control, logistics, and performance ultimately cumulate to become the recognisable corporate strategy of an organisation (Mintzberg, Raisinghani & Theoret, 1976). In the past, the exploration of a firm's overall strategy focused on comparisons of the *content* of strategic decisions, searching for the characteristics of optimal decisions. Strategy content research (comprehensively reviewed by Fahey & Christensen, 1986) includes familiar work that seeks to demonstrate how the fit between environmental characteristics, specific firm characteristics and a particular strategy can be advantageous or disadvantageous to firm performance (stretching from Ansoff, 1965; to Porter, 1985). The content approach focuses on the economics of choice rather than the process of choosing, consequently the thoughts and actions of individual managers are marginalised in this analysis.

Schendel (1994) argued that strategy research is now characterised by an alternative to the rational economics of the strategy content approach. The process approach (reviewed by Huff & Reger 1987; Schwenk, 1995) considers strategic activity at the individual, firm and industry level, as less planned, more incremental and generally vulnerable to a vast array of variables that intervene in the relationship between environmental conditions, the selection of a particular strategy and firm performance. For example Mintzberg's early research set up the *straw man* of planned rational strategic activity as the norm in firms. What he discovered in reality was a proliferation of emergent strategies (Mintzberg, 1978) which were more a function of unplanned reaction than proactive pre-planning. This finding has been confirmed by several other pieces of case based strategy process research (Wilson, 1982; Pettigrew, 1985; Hickson et al 1986; Johnson 1987). These have demonstrated how power, politics, culture and that way in which an organisation is structured can dominate the particular strategic direction of an organisation.

By considering the strategic activities of firms as emergent (Mintzberg & Waters, 1985) or as a process of emergent *strategizing* (Eden & Ackerman, 1998), whether incrementally structured (Quinn, 1980), incrementally unstructured (Johnson, 1987) or just unstructured (Cohen, March & Olsen, 1972), process researchers effectively prioritise the actions of individual managers operating either on their own or within the top management teams of their organisations. Further, if the process of strategy development is not just a simple mechanism of matching strategic information to strategic models, but a subjective and social process of imperfect selection of information, imperfect choice and imperfect

implementation, then individual differences become central to any analysis of effective decision making.

As mentioned briefly already, there are several social phenomena that contribute to strategy development and these have been looked at in various ways. Pettigrew (1985) focused on politics in his longitudinal work with ICI, whereas Johnson (1987) focused on culture as a means of accounting for strategy development in Foster Brothers. In the Bradford Studies, Hickson et al. (1986) explored the way in which strategic decisions were made in multiple organisations and established several general patterns in different organisations.

Many early process studies arrived at the conclusion that that the way managers make sense of the world is important to the strategies that ultimately develop within their organisations (Spender, 1980; Bartunek, 1984; Johnson, 1988). These studies came to the view that cognition was important, but failed to establish what they meant by cognition, why was it important and how its effects could be captured and understood in a strategic context. Although not explicitly studying cognition itself, early concepts of recipes (Spender, 1980), interpretative schemes (Bartunek, 1984) and paradigms (Johnson, 1988) did help to foster an interest within the strategy field which eventually focused more explicitly on cognition. Representative of this work were the early seminal texts of: Eden, Jones & Sims' *Thinking in Organisations* (1979), Gioia & Sims' *The Thinking Organization* (1986) and Huff's *Mapping Strategic Thought* (1990). Interestingly, although there was an explosion of interest in the cognitive approach to strategy development, many researchers newly interested in this field became captivated by cognition for cognition's sake and lost sight of the processual (behavioural) origins of their work e.g. Porac, Thomas & Baden Fuller (1989).¹

Nonetheless, recent years have seen a substantial rise in the popularity of the cognitive approach to understanding strategy development. This approach prioritises the information processing capabilities and habits of individual managers, top management teams (TMTs) and even whole organisations. Its account of strategy development is commonly legitimised by the following line of argument: the actions of the individual strategist begin with sensemaking, so to understand strategy we need to understand sensemaking (Bougon, Weick & Binkhorst, 1977; Stubbart, 1989; Walsh, 1995).

"since strategic management studies the activities of managers, and since managers must think about strategy why don't researchers allocate more research to studying how strategic managers think"

Stubbart, 1989 p. 326

In his review of the "state of the art" in managerial cognition research, Gioia (1986) claimed that:

¹ This point is argued more fully in section 2.3.

"Cognition is quintessentially characteristic of people organising, and it thus represents a good central foundation from which to explore the many interconnections with other views that can contribute to a holistic picture."

Gioia 1986 p. 340.

and in their discussions of the future of strategy process research Rajagopalan, Rasheed, & Datta, (1993) and Schwenk (1995) cited exploration of individual and organisational minds as one of the most important themes for future strategy development work to concentrate on.

ii) The Challenge of the Cognitive Approach.

Strategists face ill structured complex problems as a matter of routine (Schwenk, 1984; Starbuck & Miliken, 1988). In such a high pressured environment, it may be reasonable to expect that an individual's information processing capacity; clearly demonstrated to be limited in its capacity (Miller, 1956), could be significantly challenged. The exploration of the potential impact of this cognitive challenge has become an important element of our understanding of what is the complex and highly social process of strategy development in organisations.

Recognising the strategist as sensemaker (Weick, 1995) brings with it a fascinating and infinitely researchable paradox or core puzzle. This puzzle is concerned with the cornerstone of our intelligent life (Rumelhart & Norman, 1990), namely our ability to attend selectively to information, disregarding unimportant stimuli in favour of those which our pre-existing store of knowledge indicates are as important. This ability speeds and advances our capacity to remember, reason, solve problems and act. However, it also presents us with a potential *Achilles Heel*, by allowing predetermined expectations to exclude contradictory, novel and unfamiliar pieces of information entering our analysis of the world. In 1974, Tversky & Kahneman demonstrated how such *heuristic processing* can lead to systematic and repeated errors in basic information processing. The paradox mentioned at the beginning of this paragraph, resides in the recognition that our greatest information processing asset also has the potential to become our greatest handicap.

Within the strategy process literature the existence of systematic errors in processing strategic information has been confirmed. For example, the work of Dutton and her colleagues (Dutton, Fahey & Narayanan, 1983; Dutton & Jackson, 1989; Dutton, Walton & Abrahamson, 1989) has demonstrated how threats and opportunities can be consistently misinterpreted during periods of strategic issue diagnosis. In fact, our ability to reject as false, that which does not fit what we know to be true, is vast. Identified as *dissonance* by Festinger (1957) and the *perseverance effect* by Fiske & Taylor (1991), the impact of this form of short sightedness or *strategic myopia* (Abrahamson & Fomburn, 1994) can be seen in the trends of *strategic drift* (Johnson, 1987) and non response to environmental jolts identified in the strategy literature (Kiesler & Sproull, 1982; Murman & Tushman, 1995) as

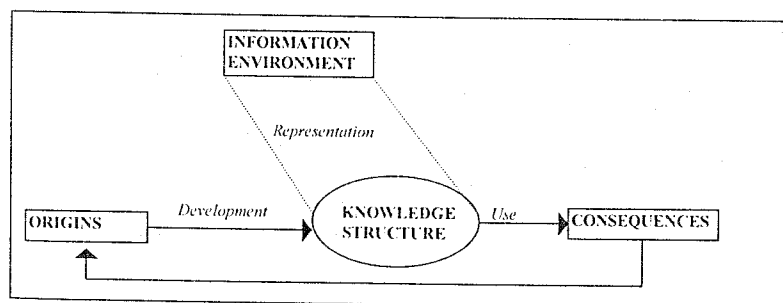
well as in other more dramatic contexts e.g. two fatal aircraft crashes (Weick 1990; Hughes & Harris, 1995) and a fire disaster (Weick, 1993).

If it is accepted, as argued in the previous section, that strategy development is an emergent process, embedded in the everyday and the taken for granted assumptions and activities within the organisation, *the challenge of the cognitive approach* is to explore in what ways the way in which managers process and use information contributes to this activity and eventual convergence. More specifically, to understand precisely how cognition contributes to strategy development and to highlight the variables that facilitate or bound the positive and negative affects that human information processing can have on strategy development processes in organisations and ultimately organisational performance. In so doing it is likely that one important distinction may need to be made; that is, the differentiation between *resting* cognition and *cognition in action*: i.e. this is what I believe now sitting here in my office, but when I interact in the TMT environment and contribute to the development of strategy in my organisation, my thinking processes may be affected by the cognitive, emotional and behavioural dynamics of the situation.

iii) The History of the Cognitive Approach within the MOC Literature.

Within the field of MOC research, human information processing and memory have been operationalised as top down theory driven phenomena (Nisbett & Ross, 1985; Abelson & Black, 1986). Cognition is characterised by the existence and operations of a series of mental templates (constructed from past experience) held in long term memory that impose meaning on information in working memory i.e. entering our consciousness. These templates have been demonstrated to be organised within long term memory in hierarchical categories with fuzzy boundaries where membership is determined by a series of comparisons to prototypical members of that category (Mervis & Rosch, 1981). In his seminal review of the MOC literature Walsh (1995) provided the model of cognition shown in figure 2.1 below, he uses the term knowledge structure to represent the mental templates described above.

Fig 2.1: Walsh's Model of Cognition.



This figure highlights the fact that an important aim of the MOC approach has always been to understand the particular ways that strategists make sense of and use information about their strategic environment. However, within these basic parameters there has been a vast array of research, which in many ways has been "disparate and uncoupled" (Fiol & Huff, 1992 p.267) and lacking a general framework for classification.

One of the first sections of Walsh's (1995) review demonstrates the lack of consistency in the extant literature simply by displaying the variety terms that had been used to describe knowledge structures. He counted well over seventy alternatives to his chosen term 'knowledge structure'. However, the main objective of Walsh's paper was to help draw the field together and generate a coherent future agenda.

Walsh successfully classified the extant literature in a functional way by categorising research in terms of its cognitive focus: whether it was concerned with exploring the attributes or content of a knowledge structure (summarised in table 2.1) or merely interested in the structure of a particular aspect of a manager's knowledge (summarised in table 2.2). He further subdivided *structure* and *content* work according to its concern with either knowledge structure development, knowledge representation or knowledge usage; by level, e.g. individual, group organisational or industry and whether the work was of a empirical or theoretical nature. This system of classification created a matrix of forty eight different approaches to exploring cognition in the management setting. These have been applied for a variety of different reasons to a variety of different management groups with a variety of end products.

Table 2.1: Research Concerned with the *Attributes* or *Contents* of Managers' Knowledge Structures (KS) Adapted from Walsh (1995), the figures refer to published articles.

Level of Investigation	Theoretical or Empirical	Focus on What is Represented in KS	Focus on KS Development	Focus on KS Use	TOTAL
INDIVIDUAL	T	4	9	21	34
	E	16	16	16	48
GROUP	T	6	2	4	12
	E	5	7	13	25
ORGANISATION	T	9	3	7	13
	E	1	3	5	9
INDUSTRY	T	4	4	5	13
	E	9	2	5	16
TOTAL		54	46	76	

Table 2.2: Research Concerned with the *Structure* of Managers' Knowledge (KS).
Adapted from Walsh (1995) the figures refer to published articles

Level of Investigation	Theoretical or Empirical	Focus on What is Represented in KS	Focus on KS Development	Focus on KS Use	TOTAL
INDIVIDUAL	T	3	1	6	10
	E	0	11	4	15
GROUP	T	0	0	1	1
	E	2	0	1	3
ORGANISATION	T	2	1	3	6
	E	1	0	0	1
INDUSTRY	T	0	0	0	0
	E	0	0	0	0
TOTAL		8	13	13	

As these tables show, there has been less interest in the *structure* of managers' knowledge than in the attributes or *content* of specific knowledge structures. Walsh's review demonstrated that over 80% of the work he looked at addressed attributes or content and not structure. This weighting in favour of content based work might be expected as the simple investigation of the structure of knowledge leaves researchers with little to contribute to ongoing discussions of complex and context dependent organisational behaviour. In the content area, by far the greatest amount of work has looked at individuals (almost 50%), with empirical work marginally greater than purely theoretical work.

As his review progressed through the other three levels of content based work, namely the investigation of group, organisation and industry structures, Walsh found less work as the theoretical / conceptual and methodological difficulties increased. In fact it is a matter of debate whether cognition should be extrapolated beyond the individual level to consider organisational and industry knowledge structures. Eden, Ackerman & Tait (1993) describe this tendency as reification and argue that cognition belongs to individuals not organisations (p.2). In 1963 Cyert & March argued more broadly that only individuals have goals, collectives do not. On the other hand, Schneider & Angelmar (1993) argued that cognitive concepts could be usefully applied at the supra individual level, where as others question the anthropomorphic tendencies that work at the supra individual level can expose but very rarely deals with. Walsh & Ungson's (1991) work on organisational memory stands as one of the few pieces of research that considers and models the development, storage, communication and use of a collective cognitive concept.

iv) A Critique of the Cognitive Approach and a Future Research Agenda.

The historical preference in MOC for individual level content based work was criticised by Walsh (1995) when he proposed a future agenda for managerial and organisational cognition research. He made four major proposals for future MOC work.

First he called for a moratorium on what he described as content portraits; studies that just describe the content of particular knowledge structures, arguing that their role as a first step

in exploring the potential of the cognitive approach in management research is now clearly redundant as we know enough of the basics² to move on to more challenging questions. Walsh argued that those interested in adopting a cognitive approach to the understanding of organisational behaviour, but in particular strategy development, should move away from defining cognitive parameters and more towards a consideration of how cognitive phenomena can assist in the exploration and explanation of behaviour.

It is important to note that the criticisms levelled at the MOC literature here are not necessarily universal criticisms that can be applied to cognitive psychology as a whole. For example, cognitive science, the discipline upon which the MOC field was originally based, has never attempted to include the study of behaviour in its remit. Cognitive Science makes it clear that it assumes that cognition is a legitimate topic in its own right (Anderson, 1985). Cognitive Science in its pure form is really the science of how individuals develop knowledge and for cognitive scientists *behaviour* is operationalised as: information search, processing, transfer to long term memory etc.; hence the usefulness of the computational metaphor (Johnson-Laird, 1988). Other branches of cognitive psychology e.g. social cognition, are more concerned with behaviour, but initially very few MOC researchers claimed to pin their work back into social cognition but rather to cognitive science.

Consequently, it is not valid to criticise cognitive psychology per se for not focusing on behaviour. It may be more appropriate to criticise MOC research that has not been clear about exactly where it is basing itself within the broad field of cognitive psychology and the assumptions it is in effect taking on board. For instance, if it was assumed that cognition is a legitimate topic in its own right, then the study of cognition in the context of strategy development could also be legitimately operationalised as a primarily cognitive activity: i.e. exploring individual's own strategic planning and visioning. However, as already established at the outset of this chapter, strategy development is less a rational stimulus response activity and more of a social process. Consequently, a cognitive approach understanding this process needs to have a strong behavioural element. In turn, this ought to lead to a greater concern with social cognition than cognitive science. Therefore, to come full circle, Walsh's criticism about the lack of focus on behaviour could be valid when levelled at MOC work that lays claim to approximating cognitive science (i.e. heavily cites cognitive science work and ignores social cognition), but not cognitive psychology in general.

² For instance we know that managers do indeed simplify their information environment, we also know that individual differences in heuristic processing (Tversky & Kahneman, 1974) can lead to individual differences in knowledge structures created by closely associating managers (Hodgkinson & Johnson, 1994). Conversely we know that individuals that associate with each other can share common elements of understanding (Allard-Poesi, 1997; Fiol, 1995; Weick & Roberts, 1993; Larson & Christensen, 1993; Orasanu & Salas, 1993; Langfield-Smith, 1992), and the antecedents of this cognitive similarity and diversity would seem to include some or all of the following; functional background (Bowman & Daniels, 1995; Schilit & Paine, 1987), management level (Johnson, Daniels & Asch 1998) degree of expertise (Day & Lord, 1992; Lurgio & Carroll, 1985; King, 1995; Schonefeld & Hermann, 1982) and nationality (Calori, Lubatkin & Very, 1998; Markoczy, 1995; Calori, Johnson & Sarnin, 1992; Shaw, 1990; Schneider, 1989).

Walsh's second point was concerned with the accuracy with which individuals represent their informational world. He argued that researchers should consider how accurate managers' representations need to be for effective action. In fact others have argued that such accuracy is not required (Starbuck & Milliken, 1988; Weick, 1990). For instance, even the association between knowledge structures and behaviour can be questioned: we do not know the extent to which behaviour displayed in organisations is evoked by the knowledge structures that researchers attempt to represent. It may be that behaviour can be predicted and understood via these representations of cognitive architecture. However, an alternative explanation may also be true. Behaviour exhibited could be so context dependent that knowledge structures that exist in long term memory are of limited use. In other words, it has not been established that people engaged in strategy development activities act in a fashion that is mindful of their knowledge about that issue. Their behaviour may be the result of an altogether different set of influences. For example Weick's (1990) description of the behaviour of a group of fire fighters at Mann Gulch demonstrated that those individuals were acting in a way that was counter intuitive in terms of what they knew to be true about the behaviour of a forest fire. The behaviour they actually exhibited appeared to grow out of fear and panic. Walsh argued that future work should concern itself not just with cognition in organisations, but also with the link between cognition and behaviour.

Walsh's two final points were very closely related. He, along with many others, (e.g. Klimoski & Mohammed, 1994) called for MOC research to become more social and to move beyond individual minds. Weick makes the point effectively:

"Discussions of collective mental processes have been rare, despite the fact that people claim to be studying social cognition (e.g. Schneider, 1991). The preoccupation with individual cognition has left organisational theorists ill-equipped to do much more with the so called cognitive revolution than apply it to organisations one brain at a time."

Weick & Roberts 1993 p 358.

However, a move into the collective domain would demand simultaneous interest in individuals and collectives, as well as attention being paid to broader social phenomena. This complexity is presumably a significant contributory factor in the paucity of work that moves beyond the individual mind.

The final point that Walsh makes is to isolate one particular area of the social cognition research that he sees as particularly promising. That is the *emotional* or *affective* aspect of the relationship between cognition and behaviour within the organisation. He describes this as one of the most important new directions the field can take (p.307). The role of emotion can have a huge impact on the decisions people make and the ways they choose to act, but to date cognition researchers seem averse to picking this up.

Others have made similar points in the past. Conway (1993) comments that cognition work across the board ignores concepts such as emotion, the self, consciousness and collective memory. Mangham (1986) suggests that cognitive based theories in management tend to avoid issues like emotion as they prefer to emphasise cognition as a deliberate and conscious guide to behaviour. He suggests that much of the basis of social order is ultimately tacit and "run off without deliberation" and our theorising about life inside organisations needs to demonstrate an appreciation of this. Recent research that begins to explore the link between emotion and strategy development is a welcome exception to this trend (Daniels, 1998a; 1998b).

A useful way of bringing together the criticisms levelled at the MOC literature is to return to the point made at the beginning of this chapter. That is, even though the original work that evoked cognition in an attempt to account for strategy development arose out of an understanding and inspection of *process* at close quarters (Spender, 1980; Bartunek, 1986; Johnson, 1988), much MOC work has operationalised cognition as a monolithic phenomena. This work attributes no temporal, active or behavioural element to cognition at all. This lack of appreciation of the nature of human thinking, in terms of its origins and uses was an extremely damaging influence within MOC research as a whole, that could be argued is continuing as the dominant approach in the North American tradition (Augoustinos & Walker, 1995).

In summary then, the MOC approach to understanding strategy development was initiated by interests of process researchers who evoked, but never fully explained, cognitive notions in their theories of strategy development (Spender, 1980; Bartunek, 1986; Johnson, 1988). In parallel, texts by Eden, Jones & Sims' (1979), Gioia & Sims (1986) and Huff (1989) began to explicitly focus on the role of cognition in organisational behaviour. Since then, MOC has broadened to become a rich burgeoning field in its own right (Walsh, 1995). However, associated with this growth has been an lack of direction and precision around some key concepts (Fiol & Huff, 1992). Some of the easier issues have been tackled but the complex and potentially significant issues remain.

According to Walsh (1995) the key areas that have received the greatest and most vociferous demands for additional research attention have been the following: (1) to explore the concept of the collective mind in terms of what it is, how it develops and how it facilitates group behaviour (2) to study cognition at both the collective and individual levels, taking both cognition and social phenomena into account (3) to explore the link between managers' representations of a situation or an issue and the way in which they actually act (4) to explore the impact that other powerful psychological phenomena such as emotion have on managers' ability to process and act on information.

This piece of work has taken Walsh's paper as a landmark within MOC as it efficiently organises a disparate field and delivers a coherent and relevant future agenda. This research was designed to respond to each of the demands outlined above. The next section of this

review isolates the topic of *collective cognition* within decision making or closely associating groups. It reviews several different positions on the existence and extent of collective cognition and concludes with a research agenda.

2.3 Focusing on Collective Cognition.

Recently, MOC research has seen a movement towards more complex behaviourally linked issues. These include collective cognition which has also been referred to as shared representations or team mental models. For instance, Barr & Huff (1997) recently argued that an organisation as a whole must have a significant level of "shared schematic frameworks" amongst its members to be a "viable economic unit" (p.341). They present the possibility that the more cohesive the shared schematic frameworks of the key actors, the quicker the organisational response to environmental change.

Looking back to a significant point made earlier, many of the original strategy process researchers as well as more recent neo institutional theorists (Greenwood & Hinings, 1993; Scott, 1995) who claim to be talking about cognition and processes of sensemaking, used similar concepts (recipes, interpretive frames, paradigms & archetypes) as surrogates for what amounts to collective cognition. These often borrowed terms (recipes from Schutz, 1972; paradigm from Kuhn, 1970) were used to refer to collective sensemaking, but were never clearly defined. By "collective cognition" they may have meant homogenous knowledge or a series of socially enacted norms e.g. rules and routine ways of behaving: it is simply unclear.

Nevertheless, the notion of some form of collective mind is an attractive device in the explanation of group behaviour. Indeed, ever since Durkheim (1938) discussed the "cohesiveness of social life", the concept of group cognition or the "group mind" has been implicitly present in many theories of organisational behaviour. Sackman (1992) argued that such assumptions of homogeneity were imported into management science from anthropology, where much of the research was undertaken in small cohesive tribes. However she protests that:

"Most of today's organisations and their relevant environments are more complex, more dynamic and less isolated"

Sackman (1992 p. 27).

The implicit assumption underpinning collective thinking in groups is that the social structures of groups tend to subsume individual desires and create conformity to a set of group norms (Feldman, 1984; Mc Grath, 1984; George, 1990). These pressures create similarity which, it has been suggested can lead to isomorphic structures and processes in institutions (Di Maggio & Powell, 1991). Note that Institutionalists such as Di Maggio &

Powell do not claim to start from collective thinking, they simply imply it in their explanations of institutionalisation.

Axelrod (1976) wrote about the cognitive maps of collectives and described how beliefs and assertions of individuals aggregate to produce consensual decision making behaviour. This sentiment has been reiterated in several pieces of work: Shrivastava & Schneider (1984) discuss *organisational frames of reference* as foundations for strategy processes within organisations. Daft & Weick (1984) talk about *collective interpretation* amongst the top management team. Indeed the concept of collectively held beliefs contributing to collective or similar behaviour has been extended beyond organisational boundaries to the industry level with Spender's (1989) *industry recipes* for success. Although much more concerned with good practice and collective norms as opposed to what later researchers have described as cognition, in discussing beliefs Spender does still evoke the notion of shared cognition.

Barr & Huff (1997) remind us that *many* researchers interested in the link between cognitive processes and action taken by an organisation (or a group within an organisation) treat the organisation as a "a unitary actor" (p. 340). Indeed the assumption that collective cognition is at some level driving collective behaviour, can be found dotted throughout the management literature. However there is still very little precision surrounding this increasingly popular concept. Klimoski & Mohammed (1994) argue that:

"Despite this enthusiasm in the field of organisation science for the notion of the group mind in some modern guise, we maintain that it is premature. More specifically, important conceptual work must first be done to examine the concept critically."

Klimoski & Mohammed (1994 p. 403- 404).

Mc Clure (1990) makes a similar point.

"Many theorists have forwarded the notion of the group having a life beyond the individuals that form it. There is considerable agreement that the group mind exists, how it forms is the question."

Mc Clure (1990 p.159)

These and other authors point out that there are serious gaps in our understanding. We do not know the *content* of collective cognition, its *function*, its *antecedents* or its *consequences*. Put more simply, we're not sure what it is, we're not sure if it's important we're not sure what creates it, and we're not sure what happens to individual and group behaviour when it's present or absent.

Klimoski & Mohammed (1994) review the team mental model construct, and conclude that its content can be seen as either based on inter-individual *similarity* of representation, on inter- individual *overlap* in representation or on a *distributed* network of diverse

representations held together by collective social processes. They are themselves persuaded by the latter view. They found little agreement in terms of the form of the team mental model and found that any evidence of a relationship between a team mental model and behaviour indicated that it tended to influence *ways* of doing things not *what* should be done. However, they offer very little discussion of the antecedents of the team mental model (limiting discussion to the possible effects of group development and the quality of group interaction) and they offer no real comment at all on the consequences of the team mental model for individual, group and organisational behaviour. So at this point in time, all we can conclude realistically from their work, is that there are a number of competing definitions of collective cognition based on *similarity*, *overlap* and *distribution*.

The section that follows offers a new synthesis of research that has in some way evoked the notion of collective cognition in its consideration of collective, consensual or convergent behaviour. This review considers areas of work and possibilities that were not included in the Walsh or Klimoski & Mohammed reviews. In doing so, it offers greater coverage of the function, antecedents and consequences of collective cognition as well as its content, whilst still recognising Klimoski & Mohammed's work at the foundation of this section. This review is organised around four competing explanations that are operationalised in terms of four propositions. Each explanation and proposition is discussed in the sub sections that follow.

It is important to take a moment to discuss *chronology* at this stage of the thesis. Although the classification of extant literature which follows has a sense of clarity, this has emerged over the years of my work and I believe it does not currently exist in the MOC literature. It was not the start point but the *result* of broad literature reviewing and case study analysis. Consequently, the discussion that follows can be seen as one of the achievements of the thesis in itself.

My starting point and initial thoughts about collective cognition and convergent or collective behaviour were consistent with those that could be found in the MOC field at that time. That is, that collective cognition was a function of homogeneous thinking (at various levels of abstraction) between individuals leading to the emergence of convergent behaviour in closely associating groups. However, the data collected from even the first and most basic pilot case did not fit this proposal. Instead, it appeared to be closer to ideas of overlap that I quickly found in the literature. In addition two further propositions were able to account for unexpected patterns in the data. The second case saw the development and amendment of all four propositions that had concluded the pilot case. Finally, this process was continued into the last case. All together, the propositions moved through three iterations, a process of gradual improvement and change. In fact this process is consistent

with Piaget's (1978) theory of equilibration³ that describes the way in which we learn and develop ideas.

A discussion of all four propositions in the form in which they were initially generated; described as a *base proposition* appears here at the outset of the thesis instead of at the end for three reasons: (1) they clarify the literatures that address collective cognition and convergent behaviour and therefore assist with the construction of the central thesis of this work; (2) all four base propositions had been introduced by the end of the first case, so in some way, all four propositions acted as a framework for the interpretation of each case. Consequently they need to appear at the start of this account as opposed to being introduced part way through; (3) as long as there is honesty about the origins and chronology of ideas, this thesis can avoid appearing to set itself up to find what it proposed in the first place; i.e. evidence that neatly fits four initial propositions, when in actual fact, the propositions were part of the discovery of the research.

Base Proposition I - This first proposition, shown in the box below, was the naïve starting point of the research and operationalises collective cognition as inter individual homogeneity that has the potential to promote consensuality and convergence in groups of individuals working closely with one another. This proposition discusses TMTs and specific strategic issues under discussion in their team meeting as a context to explore collective cognition as homogeneity and its potential to promote consensuality as part of the overall strategy development process.

Proposition I

Individuals in a team may hold different views about an important strategic issue before a team meeting. However, once agreement is reached in that meeting, team members can be expected to hold the same view of that agreement when interviewed after the meeting.

As noted above, the view that collective cognition is based on homogenous representations shared by social groups and that this homogeneity drives consensuality and convergent behaviour, is often implicitly assumed in the decision making and MOC literature. In addition to the authors already cited in this chapter, Gioia, Donnellon & Sims (1989) Isabella (1990) Dutton & Dukerich (1991) and Innami (1992) also evoke the notion of shared beliefs, shared scripts, shared interpretative worlds in their accounts of group behaviour without a discussion of what it means to share knowledge. Indeed, collective cognition is adopted as a useful construct to explain different elements of organisational behaviour but is not fully explored in terms of what is shared, how is it shared and how permanent is any emergent collectivity i.e. will it drive individual behaviour in a team environment in a consensual direction. The absence of discussion leads to the assumption

³The process of successively replacing a view of the world when new information no longer fits an existing view, is entirely consistent with Piaget's (1978) theories of equilibration i.e. the way our minds learn and develop by assimilating and accommodating new information.

that these authors (and many others) view collective cognition as a product of inter-individual homogeneity of beliefs. Two examples will be used to illustrate this point. The first is a representative piece of MOC work, the other is a series of research projects concerned with TMT consensus and performance.

Poole, Gioia & Gray's Model of Schema Change - Poole et al (1989) conducted a piece of ethnographic research in a US bank to examine schema change (from diversity to consensus) amongst work groups. In effect, they were studying the construction of collective cognition or in their terms "shared beliefs" and the processes that construct them. The scenario that they chose to explore, was schema change in response to a program of organisational change. They noted the methods used to induce schema change and their relative success rates by interviewing over sixty one informants during a ten month fieldwork period. They found that the methods used to induce schema change were; enforcement, instruction, proclamation and manipulation. They also discovered that the most successful means of inducing schema change was face to face enforcement, with the equally direct means of manipulation following slowly behind.

This work offers a valuable contribution to our understanding of how schema change can occur in a real occupational setting and demonstrates that coercion is generally a more successful tactic for producing shared beliefs than persuasion. It also reveals two implicit assumptions. First, that collective cognition is based on homogeneity i.e. it can be induced. Second, that any collective cognition achieved either via methods of persuasion or coercion can account for the behaviour of the individual managers in the team. In fact it may well be that the means of inducing schema change have differing impacts on individual's behaviour; i.e. a coercively induced schema change may have less permanence and influence on behaviour than a schema change induced by persuasion. Either way, Poole et al do not comment but rather assume a universal relationship. However, the following quote used by Gioia (1986) himself demonstrates how unpredictable the relationship between thinking and acting can be. Presumably Poole, Gioia & Gray would accept the criticism that to put some one else's thoughts into action i.e. those that you had been coercively induced to accept, would be even less predictable.

"Thinking is easy, acting difficult and to put one's thoughts into action the most difficult thing in the world" - Goethe

Gioia (1986 p.336)

The TMT Homogeneity Performance Literature. This work is concerned with the association between certain characteristics of senior managers, their beliefs and measures of firm performance. This work is exemplified by Hambrick and Mason's (1984) upper echelons perspective. There is a continuing debate between those who argue for the positive outcomes derived from homogenous TMT's (Bourgeois, 1980; Dess, 1987; Michel & Hambrick, 1992) and those who argue that heterogeneity produces high performance

(Bantel & Jackson, 1989; Bourgeois & Eisenhardt, 1988; Eisenhardt, 1989). However, the TMT demography researchers; along with those who contribute to the debate by focusing on consensus within the TMT and organisational performance (Bourgeois, 1985; Dess & Orger, 1987; Woolridge & Floyd, 1989; Priem, 1990; and Dess & Priem 1995), make the tacit assumption that consensuality and convergent behaviour in TMTs are the result of inter-individual cognitive homogeneity. In the consensus performance literature, little attempt is made to establish what cognitively is meant by consensus. Instead, its antecedents are explored to establish a contingency based relationship with firm performance. As shared belief is left undefined, it must be considered likely that these researchers believe it to be the product of group members thinking the same thing, sharing the same view.

In fact, when the mass of assumptions made about complex phenomena in the TMT demography and consensus performance literatures are uncovered, it is hardly surprisingly a basic position of equivocality remains. Two recent papers (Lawrence 1997; Markoczy, 1997) heavily criticise both literatures for leaving a massive black box unopened as part of their analyses. Lawrence suggests that this black box contains vague and untested assumptions about psychological and social processes. She goes on to suggest that if this box is left unopened, TMT research will never move beyond a reductionist and unhelpful variance model that has failed to establish any consistency in its findings over several years of research effort.

Both the TMT demography and consensus literatures are accepted as valid high profile fields of mainstream management research and serve as useful illustrations of the dangerous and endemic trend within the TMT literature to evoke the notion of shared beliefs without considering what it may mean for beliefs to be shared amongst group members; i.e. what is shared, how does it become shared and how does it specifically affect a group's ability to reach consensus.

What Does the Homogeneity View Contribute ?

The homogeneity view offered the MOC field a way to consider the possible effects that cognition could have on behaviour at the group level. The very inclusion of the concept of collective cognition in many theories of decision making marks a shift towards a positive outlook on the contribution cognitive theories can make to the strategy development literature. Also, it is this approach that, opened the door to better cognition research in the future. In themselves, these factors are contributions to the management literature.

Over and above these contributions, this simple view of collective thinking and consensuality within teams based on homogeneity has potential uses in research that is not purely cognitive, but is interested in accessing potential agreement at a very abstracted level. For example, taking an audit of employee attitudes to a change programme may only require information about the collectivity of people's thoughts and opinions at a very general level - do you agree with the programme or not. If there is collective thinking at this

level a TMT could move on to a further stage of implementation, if not then a step backwards may have to be considered. So in terms of research relevance, large scale work that again is not purely cognitive but wishes to address thinking at a generalised level, could evoke the notion of collective cognition as homogeneity as a manageable way of addressing cognition in a broader project. In addition, this base proposition described earlier as naïve, can be supported from other fields. For example, there was evidence from psychology research to suggest that during group encounters, individuals will focus on the sections of information that is common to them. Edwards & Middleton (1986), Hinsz (1990) and Winquist & Larson (1998) all argue that of pieces of information common to all members of a group will be discussed at the expense of the diverse ideas. These common ideas can subsequently be mutually re-enforced and eventually replace the diversity between group members. These ideas are in fact reminiscent of Janis' (1982) notion of *groupthink* and in many ways make intuitive sense. That is, people may recognise the powerful sense of being of one mind with someone else. This reason alone may have accounted for early MOC and TMT research's captivation with the idea.

Realistically though, it is unlikely that this view of cognition could be particularly helpful on its own as it is flawed in two important ways. First, individual members of a closely associating group e.g. a decision making group, are unlikely to hold exactly the same view of an issue or same perception or interpretation of a phenomenon (Resnick, 1993). This is simply because individuals construct and process knowledge independently from one another and in a top down theory driven fashion. In addition, empirical evidence has demonstrated that even when looking at simple issues (i.e. who are your competitors) members of a TMT can hold surprisingly diverse views (Daniels et al, 1994; Hodgkinson & Johnson, 1995; Johnson et al 1998) Consequently it would be difficult to rely on cognitive homogeneity alone in an account of collective behaviour.

However, it is important to note that the work of Porac & Thomas (1994) which held on to the notion of cognitive homogeneity argued in 1989 (Porac, et al, 1989) has demonstrated that generalised perceptions of classes of competitors can be homogenous in closely associating industries. Nevertheless, to put forward a convincing argument for the utility of homogeneity as an account of collective thinking and convergent behaving on some level, Porac et al would have to extend their work to demonstrate that people predominantly think at this generalised level when thinking about (and acting on the basis of that thinking) their competitors. In this way their ideas would contribute to our understanding of one aspect of strategy development from a cognitive point of view. They have not done this and the problems with the homogeneity view remain. Cognitive similarity operationalised as overlap may be a more useful concept and will be discussed in the section that follows.

The second flaw in the homogeneity view, is that it avoids a consideration of the context dependency of thinking and acting. That is, even if it were possible to share exactly the same view of a phenomenon, when an individual member of a group is called upon to act in line with that view, their actual behaviour may be influenced by a whole range of mediating

factors. For example, individuals may differ in their ability to accurately recall a collectively negotiated way of responding to a situation they face, they may also vary in their emotional attachment and commitment to the goals of the group and this, along with other demands, may not motivate them to behave in a manner that induces convergence within their team or group. All of these issues are concerned with the context dependency of thinking and acting. Returning to Gioia's comment in 1986 "*putting one's thoughts into action is the most difficult things in the world*". By ignoring the context of thinking and acting, this view is somewhat flawed and may only offer a minimal contribution to a realistic consideration of collective cognition.

Nevertheless, this proposition is retained in the thesis and taken forward for exploration in the cases that follow for two reasons: (1) Because on one level it seems to make intuitive sense to hold the *same* view as another person, this attractive concept may well continue to be employed across management research that in some way makes use of cognition in its explanation of behaviour in organisations. However, if there is a significant volume of work that can be used to make a strong argument against it, it may not. This research was designed to test proposition one in order to make such a response by showing in what respects the notion of cognitive homogeneity can be an unhelpful concept. (2) To use as a platform for the development of more complex propositions.

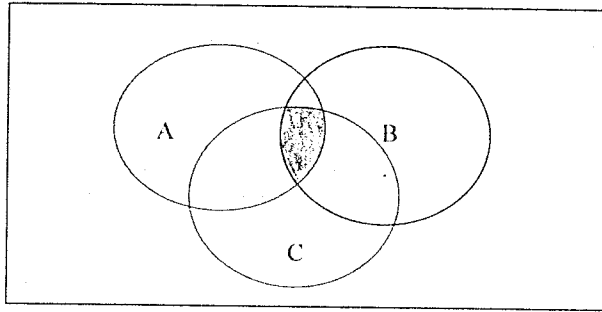
Base Proposition II - Once it is accepted that the thesis of absolute cognitive homogeneity as the driver of convergent behaviour is problematic, the search for a response to the puzzle posited by Resnick begins.

"How can people know the same thing if they are each constructing their knowledge independently ? How can social groups co-ordinate their actions if each individual is thinking something different ?"

Resnick (1993 p.2)

Within several literatures, what was until recently the most widely accepted answer to this puzzle can be found. This view is referred to by Klimoski & Mohammed (1994) as an *overlapping* view of collective cognition, or in their terms a "team mental model". This commonly held view is that a collective may not share identical beliefs, attitudes, views or opinions, but they do share core elements. Figure 2.2 below demonstrates this; i.e. A, B & C's cognitions overlap in the shaded area.

Figure 2.2: A Representation of Overlapping Cognition Within a Social Group - Adapted from Langfield-Smith (1992 p. 362)



This view of collective cognition and its relationship to convergent or consensual behaviour in the top team environment during the process of strategy development is summarised in base proposition II that is shown in the box below.

Proposition II

Members of a decision making team's ideas, opinions and views about a strategic issue can overlap before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. After the meeting, individual team members will share an overlapping view of the agreement reached: overlap will have spread teamwide.

Central to the overlapping view of collective cognition are accounts of how core overlap can develop within a group. A typical argument is that the initially different positions of individual members of a group can change or develop incrementally until they share fundamental elements in common. This is one of the classic postulates of social psychology. The idea that beliefs within a group converge over time to a normative position i.e. that we conform to social pressure, has been around since the work of Asch (1956). He demonstrated in laboratory settings how phenomenally sensitive individual members of a social group are to apparent consensus of views amongst other group members. It has been demonstrated time and time again that perceived majorities within social groups will almost always prevail as others conform to the dominant view.

Outside of the psychology laboratory agreeing, converging and conforming are all behaviours that are central to the concepts of organisation and structure in our society. Even though as a society we are increasingly awarding value to the ideas of individualism and empowerment, we still share an overriding desire to converge around single outcomes, to cluster around agreement (Moscovici & Doise, 1994). Social interaction generally centres around those things we have in common rather than those we do not; we collude to create consensus.

The theme of core cognitive overlap within a group is one that has been evoked in the MOC literature to account for collective behaviour. Two influential and extensively cited pieces of research are Walsh, Henderson & Deighton (1988) and Langfield-Smith (1992). Both of these authors implicitly accept the overlapping thesis as a driver of convergent behaviour and discuss its development within social groups. Each will be briefly reviewed.

Walsh, Henderson & Deighton's Negotiated Belief Structures - Building on the earlier work of Walsh & Fahey (1986), Walsh, Henderson & Deighton (1988) developed the idea of a negotiated belief structure. The Walsh & Fahey (1986) work had posited that political processes⁴ within groups determine whose knowledge structures are represented in the aggregation of individual views that forms the collective knowledge structure of a group. Walsh et al's work (1988) extended this notion of a partially shared, politically enacted schema by attempting to clarify the nature of the construct. They introduced two key elements of the negotiated belief structure: coverage and consensus. Coverage referring to greater or lesser coverage of a range of issues and consensus referring to degree of alignment of individual beliefs. They also proposed that both coverage and consensus can be potential or realised depending on the way in which the group interacts. They hypothesised and demonstrated in a simulation, that the best performing groups would be those with high realised coverage and low realised consensus: i.e. representative of a broad range of views but with only core homogeneity (overlap) amongst the group members, not absolute homogeneity (high realised consensus).

Walsh et al's work delivers three key contributions. First, the idea that the collective cognition of a group is essentially a negotiated product that is heavily influenced by the political hierarchy of the group. Second, in offering their empirical work, they develop a more complex understanding of the construct by showing how collective cognition can emerge from the interaction of coverage and consensus within the group. Third they demonstrate how the level of collective cognition (realised consensus) that exists within a group has a relationship to group performance. This crucial connection was a useful benchmark that helped to justify further work in collective cognition. However, there are some problems associated with this work. Although offering an important first step, Walsh's work does not offer any real insight into how negotiated belief structures are actually negotiated i.e. how they come about and what are the facilitating or blocking processes involved. In addition it offers no contribution to our understanding of just how overlapping is the cognition within the team and how long does any negotiated consensus last i.e. does the negotiated belief structure guide individual behaviour away from the group environment. Some of these questions were picked up by Langfield-Smith's work published some four years later.

⁴ Political influence and its relationship to collective thinking and behaving will be discussed in greater detail in a sub section that follows.

Langfield-Smith's Collective Maps - Langfield-Smith (1992) challenged the extent to which collective cognition accounts for collective behaviour. The findings of this work indicated that collective cognition is in fact context dependent and emerges from group interaction. Langfield-Smith specifically argued for an overlapping view of this transitory social product. That is, *some* information is shared but not *all* (see figure 2.2). Importantly, Langfield-Smith also pointed out that any overlap that is constructed in the group forum may well be diluted, and disappear when individuals are left to their own devices:

"There may instead be "collective cognitions", more transitory social artefacts, which are subscribed to in varying degrees by members of the group at a particular point in time during collective encounters."

Langfield-Smith (1992 p.360)

In short collective cognition for Langfield-Smith was an overlap of views prompted by negotiation, argument and interaction within the group. As individuals leave the group environment they each create their own memory of what was negotiated, argued and agreed. So once again, cognition can become diverse and individual, with fewer shared elements over time.

This work offers two important contributions. First, it makes a strong argument for the perception of collective cognition to switch to an overlapping approach by empirically demonstrating its emergence in an experimental setting. Second, it shows that this negotiated, context dependent phenomenon, can have a short existence in the collective dimension from which it emerged. However, as Langfield-Smith points out, this work is experimental and is therefore blind to key characteristics of real groups, and second, since so much of the nature of collective cognition is accounted for by group processes, future research interested in accessing collective cognition should have a significant observational element included in its research design. (p.365).

What Does the Overlapping View Contribute ?

The overlapping view of collective cognition in groups, as espoused by Walsh et al (1988) and Langfield-Smith (1992), offers an empirical development in our understanding of how core commonality can emerge in a group. The basic idea is that the development of a collective way of seeing a problem, is contingent on the interaction processes within a group. Power and hierarchy would also seem to have particular influence in the negotiation of the core elements of knowledge shared within a group. In addition, the *way* a group interacts contributes to the creation of a uniform view. A second significant contribution that comes from Langfield-Smith's work, in particular is her discussion of the transitory nature of collective cognition which prompted her to call for future research exploring potentially varying degrees of permanence in collective thinking within decision making groups.

The potential usefulness of this view of collective cognition became apparent early in this research. That is, after the first period of fieldwork, collective cognition seemed to be something represented by only partial similarity that appeared and then disappeared in less than a week. Introduced at the pilot stage, this proposition was carried throughout the latter periods of fieldwork as the overlapping concept was believed to offer crucial insights into this complex phenomenon.

After reviewing the Walsh et al (1988) and Langfield-Smith (1993) papers, it would appear that an especially interesting aspect of overlapping cognition still to be explored is a consideration of *what* overlaps in group members' views of an issue and how people can appear to fall in and out of agreement over time. In fact, a common oversight in this overlapping view is an account of behaviour outside of the group forum, i.e. does it account for co-ordinated behaviour or does it have no impact on individual behaviour at all and in the case of Walsh's work, was the negotiated view that emerged amongst the group fully implemented by all group members?

In general these examples of an overlapping view of collective cognition and its relationship to collective or co-ordinated behaviour, offer a snap shot view of the emergence of agreement at one point in time but they fail to test fully or consider its longevity or its ability to account for convergent, co-ordinated behaviour. This research, specifically the last longitudinal case was designed to explore this.

Base Proposition III

The third proposition is concerned with what Klimoski & Mohammed's called the *distributed* view of collective cognition. This view of collective cognition and its relationship to convergent or consensual behaviour in the top team environment during the process of strategy development is summarised in base proposition III is shown in the box below.

Base Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussions could be the product of their shared social schema of how to interact during team meetings. This distributed knowledge allows the team to work as a cohesive unit that is able to reach agreement.

The notion of distributed cognition is concerned with a configuration of individual views that, although different, are still able to combine to produce convergent behaviour in teams. In this view, overlap is not a cognitive pre-requisite for consensuality and convergent behaviour. This means that members of a top management team need not have the same representation of plan A, for example, to act upon it in a consensual fashion. Instead there can be a distribution of views (or pieces of information) that are likely to be diverse. The

collective forces in the distributed scenario, are the mechanisms of interaction. It is around these mechanisms of interaction that there may be the same kind of collectivity as described by the overlapping view.

The concept of distributed cognition has, according to Salomon (1993), been around since the founding father of Psychology - Wilhelm Wundt discussed his ideas of *völkerpsychologie*. Salomon's review of the origins of the concept of distributed cognition traces its development through the work of Vygotsky in the 1920's, the anthropology of Franz Boas in the 50's, Geertz in the 70's and D'Andrade in the 80's.

In his discussion of the concept of distributed cognition, Salomon (1993) begins with a consideration of what *distributed* actually means, i.e. it means to be without a single locus and it also means to share. This means that cognition does not reside solely in the single locus of the individual, but can also be stretched over and between a network of individuals. In this way, cognitions can be jointly composed and exist within a network of social actors. Importantly, Salomon recognises that not all distributed cognitions are the same in their nature, but he stresses that they do all share one important characteristic, that:

"Intelligence is not a quality of the mind alone, but a product of the relation between mental structures and the tools of the intellect provided by culture"

Salomon (1993 p.112)

In this way, the distributed view is fundamentally different from the overlapping view. That is, in the overlapping view, the locus of collective action is core commonality (overlap) between social actors i.e. a single internal locus. In the distributed view the locus of collective action is distributed between the individual and their social context, consequently collective action can emerge from diversity and as well as homogeneity in cognitions. In short, the distributed thesis is much more sophisticated view of thinking and acting in social groups than either the homogeneity based or overlapping theses previously discussed.

In fact this distributed view of collective cognition has gathered the greatest support of all the arguments presented so far. That support has come from several directions; cognitive science, socio cognitive theories, MOC and human factors (ergonomics). Representative arguments from each of these will be briefly discussed in turn.

Cognitive Science. - Perhaps the closest cognitive science comes to considering the concept of the *group mind*, is the artificial intelligence research based on the computational metaphor that became so popular in the 80's (Johnson-Laird, 1983). The basic concept within this form of *connectionist* modelling is that knowledge at the group level resides in patterns of connections between individual units. In this view any one person (unit) can have a role in generating the group reality, but the entire group reality can never reside in any one person. The connectionist approach recognises that any single (person) unit may be

more or less important than any other depending on the local activity around it. For example, an individual's knowledge becomes key to the group level product when that knowledge is sought by other members as in the case of an expert or an influential member of a team.

As with any form of computational modelling, there are difficulties with the application of the connectionist approach to organisation studies whose context is made up of real, thinking and feeling individuals. However, a number of individual pieces of cognition based research that concur with a distributed argument were found and are reviewed below.

Wegner's Theory of Transactive Memory. In this model, members of a closely associating group or team remember different pieces of a whole chunk of information, but have an awareness of the actual location or likely location of the rest. This memory process depends on knowing *locations* but not the *information* itself. So for Wegner (1987), collective mental life is not reliant on inter individual homogeneity but on the communication and interaction processes within a group. The major contribution of Wegner's work was to demonstrate how a mental function (assumed to be intra individual) can in fact be external to an individual and part of an inter individual process.

Hutchins' Computational Model of Distributed Cognition

In his model of collective cognition within groups of individuals, Hutchins (1993) uses computer simulation to explore the social organisation of distributed cognition. In his simulation work he discovered that the two key variables that significantly influenced the development of a group level (shared) cognitive phenomenon were the *hierarchical structure* within the group and the *communication* patterns that ensued from the exercise of hierarchical influence. The collective product that emerged could not be found in the individual representations of any one member, but was a distributed product based on social influence. So for Hutchins, collectivity can emerge from the diverse and distributed views of individuals, but is collectivity is heavily mediated by both hierarchy and communication within the group.

Larson & Christensen's Social Cognition.

Larson & Christensen (1993) consider group level problem solving via *intra* group information processing. They discuss several phases of problem solving; problem identification, problem conceptualisation, information acquisition, information storage, information retrieval, information manipulation and use, and demonstrate how they can be accounted for by a social theory of cognition. They achieve this by extrapolating individual cognitive functions such as memory recall to the group level and demonstrate how key aspects of group interaction can facilitate the generation of the collective cognitive product that they call social cognition. They are consequently following a line of explanation that can be slotted within the distributed approach even though they don't explicitly state this themselves.

Their view of collective cognition is essentially based on the notion of a distributed network of diverse knowledge from which consensual interaction and behaviour can emerge. As with the Hutchins' simulations and the work of the connectionists, they see individual knowledge as part of distributed network of knowledge arguing that collective cognition is something that happens *outside* of the individuals involved. The key to the generation of a collective intellectual product is a series of social variables. By offering this set of variables, and by generating them through a consideration of *social* (as opposed to computational) reality they move beyond the contributions of the connectionists and of Hutchins.

The first of Larson & Christensen's contributions is to consider the possibility that different group situations will lead to different forms of socio cognitive activity or *social decision schemes*. For example in a situation where all group members have all information, the socio cognitive activity of the group would revolve around the manipulation of that information. In a situation where some members have some information, the socio cognitive activity would revolve around uncovering of information. Situationally dependent social decision schemes have been uncovered in other research, e.g. Hastie & Pennington's (1993) research in jury decision making.

Second, they proposed that one of the key mechanisms to facilitate the development of distributed collective cognition and promote convergent behaviour, is the development of *meta cognition* within the group: an awareness of who within the group or team knows and believes what. This meta cognitive capacity is only fully realised when group members are aware of its presence within the group: i.e. I know, that you know, what I know ! This is similar to Wegner's idea that collective cognition is *knowing the location of information* within the group but not knowing the information itself. Larson & Christensen suggest that meta cognitive ability is likely to be realised in long associating as opposed to newly developed groups. They also propose that it is this meta cognitive phenomenon that can cause groups to discuss their commonly shared information at the expense of information that is only partially shared. An extreme consequence of this trend being the kind of group level confirmatory bias identified in Janis' work on *group think* (1982).

In summary then, the view of this sample of cognitive scientists who adopt a distributed stance, suggests that collective cognition is non existent *within* the individual. Instead they argue that in various ways it resides *outside* of them and comes alive when diverse pieces of information (held individually) are combined during group interaction. In addition, there appears to be agreement that collective cognition is about *meta cognition*: knowing the location of information not knowing the information itself. The factor that seems to affect the development of this *meta cognitive* ability between individuals is effective communication which in turn is facilitated by group development.

Socio Cognitive Theories. Social Cognition grew from a general dissatisfaction with Social Psychology. This became known as the *crisis* in social psychology (Tajfel, 1982; Taylor & Brown, 1979). At the heart of the discontent was a concern with the artificiality of the experimental techniques used. It was famously suggested by Neisser (1967) that this artificiality resulted from efforts to keep *contaminating variables from the real world out of analysis*. In addition the *individualisation* of social psychology was criticised (Sampson, 1988) for creating a tradition in which collective phenomena had become increasingly ignored. Contemporary social cognition is still seen as predominantly individualistic in its approach to the study of human behaviour as it:

"searches for the person in the causes of behaviour"

Augoustinos & Walker, (1995 p.1)

However, interest in societal, collective and symbolic features of human thinking has increased rapidly in an effort to explain the totality of the socio cognitive experience. Resnick (1993) puts forward a strong argument for the realisation that cognition and the social world are not independent phenomena, that in fact cognition is "socially situated" and that:

"every cognitive act must be viewed as a specific response to a specific set of circumstances"

Resnick (1993 p.4)

Although extensive research in the field of social cognition has emerged from North America (see Taylor & Fiske's text 1991), the momentum to move away from the individual as the unit of analysis and towards the collective has been more enthusiastically pursued in Europe. The American tradition has remained predominantly concerned with how people categorise the social world rather than a concern with the skills individuals use to interact within that world. This approach has been described as *cognitivism* (Edwards & Potter p.13 1992) as opposed to social cognition.

European psychologists appear to have moved away from cognitivism and generated a trend that prioritises the social in social cognition. Examples of influential work in European social cognition are the *social representations* of Moscovici & Zavalloni (1969) & Moscovici (1984) and the *discursive psychology* of Edwards & Potter (1992), Harré & Stearns (1995). A brief description of each of their position's on collective cognition and or collective action is given below.

Moscovici's Social Representations. In his *Social Representation Theory*, Moscovici (1984) views an individual's psychological experience as being mediated and determined by their belongingness to a collectivity of others. He sees the individual and the collective engaged in a dialectical relationship. That is, the individual is both a

product of the conventions, norms and values of the collective and is an active participant in the construction and maintenance of that collective.

Again, as with the cognitive theories, for Moscovici collective cognition is dependent on inter individual processes and it is communication that allows representations and behaviour to converge. Moscovici presents three possible means of such convergence. The first of these is *conformity*. Here individuals conform to the most dominant view (based on simple majority or on the view of the most powerful player) and behave in a collective fashion. The second means of achieving collective action is via the incremental process of *normalisation*. Here individuals' diverse representations become subsumed in the emerging culture of the group. The final means is a *polarisation* effect (exaggeration of differences that can occur in a group environment) which promotes conflict. This conflict then stimulates debate and discussion and it is from these discussions that collective behaviour emerges. A recent empirical study (Allard - Poesi, 1997) found evidence of all three of these mechanisms to in the achievement of consensual action.

Discursive Psychology. The most contemporary work in the European tradition of social psychology is discursive psychology, which is a school of thought that is centrally concerned with discourse as the characteristic feature of human life. Claimed as the *new cognitivist approach* (Harré & Stearns, p.95 1995), discursive psychology explores the nature of individual skills required to exist in the social world.

Edwards & Potter's (1993) *discursive action model* emphasises social action as the unit of analysis, seeing all cognition as situated (in context). This implies that there is not a direct link between thought and action and that the social context is the mediator. For instance, memory is the situated re-production of past events, the situated element meaning that current influences make a *particular* version of a recollection available.

Discursive psychology is not designed to reveal the linguistic structure of text and talk, or to establish what talk tells us of an individual's underlying logic. Its aim is to focus on natural discourse as part of social practice. Consequently, for discursive psychology, situated discourse is the mediator between the sensemaking of an individual and behaviour they ultimately exhibit in a group context. Therefore as with the other approaches just described, it legitimises a position in which both the individual views of an individual, and the rules and norms of the group combine to create the useful and interesting unit of analysis; group discourse. It is via the examination of each of these elements that patterns of decision making behaviour can be understood.

In summary, the social or *new cognitivists* (Harré & Stearns, p.95 1995) suggest that it is collective behaviour that is really of interest. They argue that collective behaviour is the product of distributed individual cognition that is brought together in a particular way according to the dynamics of the group's way of interacting. Context is key in the

production of collective behaviour and to understand this relationship, there should be a focus on the discourse within the group and an awareness of Moscovici's three mechanisms that groups use to create collective behaviour: conformity, normalisation and polarisation.

The position of the social cognitivists is different from the cognitive scientists in that they predictably focus less on cognition and more on collective behaviour. Whereas the cognitive scientists start with meta cognition and move into considering effective communication in the production of collective behaviour, the social cognitivists start with effective communication and move forward to explore mechanisms evoked to produce collective behaviour. Combining the two fields begins to build up a picture of collective cognition linked to collective behaviour.

Managerial Cognition. Strangely enough, although MOC as a field frequently refers to, and appears to be captivated by the notion of collective cognition and its relationship to convergent behaviour, there is little research published in this field that specifically addresses this issue. Consequently, the term is used loosely and in some cases in error. A few pieces of MOC research that have tackled the exploration of collective cognition from a distributed point of view are reviewed here. Although not all of them specifically evoke a *distributed model* of cognition, they do arrive at conclusions that are more reminiscent of the distributed proposition than any other proposition discussed so far.

Weick & Roberts' Heedful Interaction. Perhaps one of the most influential and widely referenced pieces of MOC work to consider collective cognition is nature and its relationship to convergent behaviour, is Weick & Roberts (1993) well argued paper describing heedful interaction on a US aircraft carrier. They attempt to unpick two puzzles; what is the nature of collective cognition, and what is its relationship to convergent or collective action. They adopt a position within cognitive theory that draws on Wegner's transactive memory, the connectionist school (Hutchins, 1993) and early work in social psychology (Asch, 1952). By mixing these positions, they arrive at an account of collective cognition as "*heedful interaction*" in which actions of social actors in a group are connected by the processes of interaction as opposed to totally shared knowledge of the procedures or tasks they are all *enacting* (Weick, 1979) as a group.

They propose that fully developed mental processes within social groups, produce the group mind phenomenon (collective cognition). They account for group mind in terms of the mindful attention of social actors within the group and the controlled information processing that results. In their terms mindful attention or "*predisposition to act with heed*" (Weick & Roberts, 1993 p.361) is careful, critical, consistent, purposeful, attentive, vigilant behaviour. The trail of logic they follow to move from collective thinking to collective behaving is as follows: heedful interacting produces collective mind, collective mind in turn produces collective behaviour, collective behaviour reduces error and increases performance.

What emerges from the Weick & Roberts research is the extent to which they locate collective cognition (group mind) in action. However, they are also explicit about the distributed element in their theorising.

"The pattern of distributed representation explains the transindividual quality of collective mind. Portions of the envisaged system are known to all, but all of it is known to none."

Weick & Roberts (1993, p.365)

The heedful interaction that occurs within a group may be "*internalised and recapitulated*" (p. 367) by individuals more or less adequately as they move in and out of social systems and spheres of influence. In short, the quality of group mind is highly dependent on the way in which a group socialises and interacts with newcomers. This point is particularly interesting if we look back to Langfield-Smith's (1992) work. In that work, the collective cognition that emerged was a transitory phenomenon. The transitory nature of the group mind that developed could be attributed to inadequately developed group processes and a lack of sustained *heed* in their interaction. Equally, the dominance of heedful interacting would be expected in the military, highly routinised, environment of an air craft carrier. It would have been interesting to gain more insight into this particular research site but neither the 1993 paper nor the 1994 paper (Roberts, Stout & Halpern, 1994) gives sufficient methodological or empirical detail.

Weick & Roberts make a strong contribution to our understanding of the phenomenon of collective cognition, by placing such a firm emphasis on action and the situational dependency of individual cognition. They produce a piece of theorising that moves beyond a discussion of just the nature of collective cognition, but also expands to account for collective behaviour as well. However, there is a significant problem with the work that would lead to the need for additional replication - the research design.

First, it is very difficult to gather much information about the methodology they employed. The 1993 paper is vague and refers the reader to Roberts et al 1994 paper which is equally vague. Second, the highly routinised environment of the aircraft carrier may not be a context from which findings are easily transferable into other non military environments. The behaviours listed as indicative of *heed* are literally *drilled* into military personnel - careful, critical, consistent, purposeful, attentive, vigilant behaviour. How then are Weick and Roberts sure that they didn't find a unique form of behaviour and collective thinking that emerges only from a militarised environment, and that in general, the concept of heedful interaction does not account for collective cognition or collective behaviour? They provide a well crafted argument on a theoretical level, but even though couched as an empirical piece, they fall short of providing sufficient empirical evidence to resolve this issue. An useful research endeavour would be to replicate Weick and Roberts' work in a non militarised organisational environment.

Fiol's Consensus within Diversity. Fiol's (1995) contribution to the debate about the nature of collective contribution and its link to collective action, was her longitudinal empirical exploration undertaken in an actual management context. Fiol's work looked at consensus embedded within enduring diversity. She illustrated how, though a program of organisational change, key personnel were able to arrive at and implement a consensual view in spite of enduring inter-individual diversity. The key factor that Fiol prioritises in her analysis, is the *framing* of issues to be agreed and acted upon. Specifically, she argues that whilst individuals can disagree on the content of an issue, they can agree on the framing. Consequently, even though group members don't agree with the *what*, as long as they agree with *how*, collective action can be achieved. In a sense this is reminiscent of the Larson & Christensen's view that not every one needs to own all of an issue to be able to act, but they must share the key interactive elements of the manner in which they expect the group to behave.

Although Fiol's work is in a management context (and for this reason alone it makes a significant contribution to the collective cognition literature), it is conducted retrospectively generating a version of the change program from archival data (a log of the communications between the eleven managers involved). There are significant methodological difficulties associated with the retrospective attribution of beliefs (Golden, 1992; 1997). Furthermore, arguments made by Eden (1992) would clearly question the validity of the approach taken by Fiol in terms of the *adequacy related to purpose* ratio of her design.

"Using documentary evidence as a surrogate for cognition is clearly an interesting activity but it does not produce maps that can claim to be representations of thinking. At best they are useful surrogates as long as they utilise a theory of cognition as seen through the process of writing documents. Such a theory has not yet been developed for the very good reason that what is written in documents is mediated by considerations of formality, archive and record keeping."

Eden, Ackerman & Tait, 1993 (p.32)

As with so many of the works reviewed here, although Fiol's work makes a contribution there is still a great deal to be said about collective cognition and collective action within the organisation from a real time perspective.

In summary, the view in the MOC literature seems to build on the view that collective cognition is not about sharing all the information, but sharing a view of how the group should operate which presumably includes who stores what information (meta cognition) and to act in a manner that demonstrates an awareness of other groups members, their knowledge and their tasks.

Human Factors / Cockpit Ergonomics. An interesting area that has been consistently producing empirical, real time fieldwork exploring collective cognition and collective

action in decision making processes is the ergonomic discipline of "Human Factors". In particular the work of Judith Orasanu and her colleagues. Their work is carried out in real time observing flight crew in the cockpit to explore the development and use of collectively held cognition or in their terms, *team mental models*. Orasanu & Salas (1993) provide a summary of their views on the nature of collective cognition and its contribution to cockpit decision making.

They begin by making the observation that our theories of group decision making in general are fundamentally flawed as they are not carried out in real environments but in experimental contexts. They argue that recent group decision making research that has been longitudinal and undertaken in real contexts, is emerging (Gersick, 1988; Levine & Moreland 1990) and within this work, the theory of shared mental models has become a central concept (Cannon-Bowers, Salas & Converse, 1990). In the view of Orasanu & Salas, collective cognition is the shared knowledge that facilitates communication; it is knowing the rules of behaviour. In this way, their ideas are similar to Weick & Roberts' heedful interaction and Fiol's issue framing. For Orasanu & Salas, individual memory becomes expanded across a group when they share this form of interdependence. Importantly, they stress that in their view collective cognition is not about sharing the same knowledge, but sharing the same labels for concepts relevant to the group's task and that shared understanding seems in some way to depend on the specialisation of roles (Smith, Mc Coy, Orasanu, Denning, Billings & Van Horn, 1996).

Orasanu & Salas (1993) explain that one means of observing the development of collective cognition within social groups is the *shortening of utterances* as explanations between group members become taken for granted. This was empirically demonstrated by Orasanu in 1990 when she found clear, brief, purposeful communication amongst flight crew. In addition, this form of efficient communication (based around collective procedural knowledge) was found to be closely allied to performance. The more frequent this form of brief and explicit communication, the higher the performance of the crew.

This would again concur with the arguments of Weick & Roberts, who argue that well developed groups have the propensity to achieve a well developed group mind and this in turn produces heedful, error-avoiding behaviour. For Orasanu & Salas, the same effect emerged: those crews who developed well as a group, developed a sufficient team mental model to produce brief efficient communication and improve group performance. So for both sets of authors, a key element of effective group performance is the presence of collective cognition; a key element of collective cognition is group development and that is strongly linked to effective communication.

Finally Orasanu & Salas discuss a concept that is reminiscent of Larson and Christensen's meta cognition (knowing what other members of the group know). However, they discuss this idea as part of their consideration of the negative pressures of collective cognition on groups. They point to the *Abilene Paradox*; when group members think they know others

views and are in fact mistaken, and how this can lull a group into a false consensus and a false security that they will all behave in an appropriate (co-ordinated) fashion. In the cockpit, as with any other high velocity environment, the implications of this false meta cognition can be disastrous. For example in the Tenerife air crash at Pago Pago, the inexperienced co-pilot assumed that the senior flight training pilot was aware that there was another aircraft taxiing across the runway potentially crossing their own take off path. When the pilot indicated to the air traffic control (ATC) he was about to take off (using the wrong language), both ATC and the co pilot believed he was recognising the presence of the other aircraft and his intention to wait. He was not, he was unaware of the other aircraft and the KLM 747 collided at high velocity on the runway with the taxiing aircraft causing significant loss of life.⁵ Weir (1993) discusses several other incidences of communication breakdowns in the cockpit that lead to subsequent system failures. In each of the cases he describes, Weir argues that the loss of the ability of flight crew to know the mind of their colleagues contributed to the accident.

In Orasanu et al's work, the groups studied seem in many ways to represent an elite; a kind of super group. That is, they were highly trained individuals who had a great deal of time and energy invested in their ability to work well in groups. In addition, the way in which flight crew and operational personnel on an aircraft carrier work together is extremely task orientated with clear lines of command and communication. So although an ideal environment to *begin* to study the possibility of the connection between collective cognition and collective action, there is clearly a need for further work to be conducted in an environment where groups have a lot less time invested in their group work training, are a lot less task orientated and where there is no clear action plan or road map and where command and control are fuzzy areas, e.g. top management teams.

What Does the Distributed View Contribute ?

It would seem that the distributed view of collective cognition and its relationship to collective behaviour has achieved the greatest amount of convergent validity than any of the other arguments considered so far, i.e. it has emerged in several fields of research that deal with group decision making. It also offers an extremely compelling account of collective cognition linked to collective behaviour as several of the pieces of work cited pay detailed attention to behaviour as well as changes in individual and collective cognition. In addition, the most sophisticated of these offer empirical evidence collected in real time employing ethnographic research designs, e.g. Weick & Roberts (1993), Orasanu & Salas (1993). However, regarding these two particular pieces of work there is a serious problem with the contexts in which they were undertaken, i.e. highly routinised, military type environments where a collectively understood way of behaving has been institutionalised around almost every task, highly stylised language is used to communicate and deviation is

⁵ Grateful acknowledgement for information concerning this incident is given to Dr Don Harris of the Human Factors Unit, College of Aeronautics at Cranfield University.

punished harshly in terms of reprimand or life threatening errors. In other less formally routinised environments, a very different set of results may be found.

In fact, it can be argued that the gap left open by these two pieces of research offers the opportunity for a genuine contribution to knowledge to be made. That is to:

- Explore the nature of collective cognition and its relationship to collective / co-ordinated behaviour.
- To do so in an *real* environment that is *not* highly routinised.
- To conduct the work in *real time*
- To focus on behaviour as well as cognition

In summary then, the distributed view can contribute important advances in our understanding of collective cognition and its relationship to convergent or collective behaviour. First, it has been established that cognitive processes can be external to an individual (Wegner, 1987) and that cognition is in fact situated, or context dependent (Resnick, 1993). Second, it can be argued that decision making groups need not have a single focus (Salomon, 1993); that is, they need not have a core element of homogeneity in order to collaborate, co-ordinate and act collectively. Consequently, within the distributed view, decision making groups can (theoretically) tolerate differences amongst group members and still achieve genuine agreement. Third, the way in which a group interacts plays a significant role in the generation of an effective distributed network of thinking. It is the interaction of the group, that makes distributed knowledge come alive as information is shared and used by the group as a whole. Fourth, an important point to emerge from this review is the set of contingent variables that facilitate an effective relationship between collective (distributed) thinking and collective (co-ordinated) acting. These would appear to be a function of the stage of the group's development. The concept of group development leads on to a consideration of variables such as trust, familiarity and meta cognitive awareness.

However, there are several areas that the distributed view overlooks or simply hasn't extended to consider. The most obvious of these is a full exploration of a broader range of contingent variables that may facilitate or block the emergence of collective thinking and behaving. In essence, the majority of the work reviewed is still strongly psychological and limited in the social areas it explores. For example what of the role of emotion, what of the role of political behaviour, what of social loafing. These and other issues are picked up in the section that follows.

Base Proposition IV

The final proposition considered in this review is concerned with a range of more 'social' concepts than have been considered so far. In this brief section, the possibility that collective cognition is not the most useful concept to explain behaviour (convergent or

other wise) associated with strategy development in the top team, is considered. This proposition is shown in the box below.

Base Proposition IV

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other more social variables that are motivating team members behaviour and contributions to discussions in team meetings; e.g. political motivation.

In many ways this is something of a 'catch all' proposition. That is, it is concerned with an overall thesis, as opposed to presenting a definitive argument for what those other 'more social variables' may be. As each of the case studies were analysed, this proposition was developed and the 'social' variables specific to the contexts studied were identified. However, the exploration of this proposition was not a purely 'grounded' endeavour (i.e. without a priori assumptions and expectations as first argued by Glaser & Strauss, 1968). There was a general set of factors that were expected to have some influence that could potentially override issue based cognition. These were political motivations to behave in a certain way and the influence of the dynamics within the group. Each of these is briefly discussed below, but before this, an argument is presented for an approach to strategy development that is not based on facts and opinions but rather a series of less rational and deliberate actions.

Brunsson (1989) argues that as much of the basis of social order is run off without deliberation, the sense of deliberateness that cognitive interpretations of it can infer needs to be counter balanced by the notion of *irrationality* in behaviour in organisations. He discusses the basic hypocrisy of organisational action as the propensity to:

"talk in a way that satisfies one demand, to decide (act) in a way that satisfies another and to supply products in a way that satisfies a third."

Brunsson (1989 p.27)

More and more, theories of decision making and traditional decision theory in general, have moved away from the rationality of choosing and acting to account for the way in which individuals and groups within organisations make decisions. The garbage can model of decision making (Cohen, March and Olsen 1972), offered a view of the strategic decision making process that entirely rejected the idea of rationality (either adaptive or omniscient) and the predictability of choice at any level. It promoted the notion of decision making as a process in which conscious premeditated choice played a very small part in the final problem solving activity. In effect, it decoupled the concept of choice and the resolution of a problem, thereby questioning the nature of decision as a discrete concrete phenomenon. Cohen, March & Olsen claimed that their model could be "*characteristic in part of any organisation part of the time*" (1972 p. 1).

A characteristic common to both Brunsson's notions of 'hypocrisy' and 'irrationality', the garbage can model, and several other more contemporary theories of strategy development (i.e. strategy as a product of culture; Pettigrew, 1985; Johnson, 1987), is that they do not assume a simple and direct link between thinking and acting. In doing so, they prioritise the context dependency of organisational action. In their discussion of the political feasibility of a particular strategy, Eden & Ackerman (1998) isolated co-operation, co-ordination and a sense of procedural justice (collapsed under the general title group dynamics from this point on) within the TMT as important factors. However, based on a brief review of the 'groups' literature, the mediating effects of power and political influence can have on behaviour can be added. Each is now discussed to demonstrate how it has the potential to mediate the relationship between cognition and behaviour in periods of strategy development in the TMT.

Group Dynamics - There is a whole range of literature on behaviour in groups that is not accounted for by the MOC perspective that would support this final proposition. Simply being part of a group can significantly change an individual's normal pattern of behaviour; consider your behaviour in a crowd. In crowd situations, a person's sense of individuality and control of a situation can rapidly deteriorate, they *go with the flow* and can be quite literally dragged along finding it almost impossible to move in a different direction from the movement or opinion of the crowd. In our complex society, we are members of several different groups and teams. Psychologists have been able to demonstrate for some time that much of our social identity (who we feel we are) is derived from our membership of a group or team (Tajfel, 1982). The struggle to hold onto some form of equilibrium in our social identities, despite our membership of so many groups, was described by Tajfel & Turner (1986) in their social identity theory. They show that if an individual feels that their social identity is under threat they will either exit the group or try to change the status of the group to regain their own sense of security. For example, if a group member who had a previous high regard for the judgement of fellow group members is reprimanded for poor performance, that group member may then *alter* the status of the group members in their own mind so they see them as individual's with poor judgement who pick on other team members. Thus, the poor performing individual has maintained self esteem by *projecting* their own failure onto others in the group. Alternatively, if the group as a whole is failing, members instead of looking to their own performance frequently find a *scapegoat* to abuse and so maintain their own self esteem. Again this is an example of projection (Hirschhorn, 1988) and has been found to be a frequently occurring phenomenon in top teams in particular (Kets de Vries, 1996).

Irrespective of the status of the group, there are affective implications that arise from group membership in general. For example, group membership serves an important affective function in that it fulfils one of our basic desires and needs; to be included and feel affection (Mc Clure, 1990). Individuals may act in ways that, in terms of their issue based cognition, is counter intuitive in order to satisfy these basic desires. Burton & Dimdelby, (1988) discuss how individuals can often choose to project an image of themselves that will

satisfy their need to feel included even if it is contradictory in terms of their real views. Goffman (1959) discussed in some detail the way in which individuals can be extremely adept at portraying all manner of desired presentations of *self* to satisfy affective, not cognitive demands.

Nevertheless, researchers who have looked exclusively at top teams and / or boards of directors, have found behaviour that seems to show that as a result of their position at the apex of the organisation, senior managers directors seem especially prone to act in a fashion that this not reflective of their own views. Garratt's (1996) recent work explored the reasons why directors seem to be reticent to question and raise contentious issues that may disturb the equilibrium in their top team. These include the (1) the intense pressure to get things right that promotes a powerful fear of failure and a determination not to ask for help, (2) the personal perks (Lexus, share options, salary and first class travel), that all combine to make their loss far too risky, (3) new directors are often told that they will pick things up as they go along and to accept the status quo; even boards in crisis would appear to demand such compliance. These pressures can result on a level of under performance that is greater in top teams compared to groups lower down the organisation (Kakabadse, 1991; Katzenbach, 1997).

A further example of individuals in groups acting outside of the bounds of the explanations of the cognitive perspective alone is the phenomenon of *social loafing* (Williams, Harkins & Latane, 1979). Social loafing is concerned with the idea that away from the gaze of responsibility, individuals will loaf (not contribute their maximum effort). In her empirical study of the emergence of collective cognition in small work groups in a French factory, Allard - Poesi (1997) found that social loafing was a factor that interfered with the link between collective believing and collective behaving (some group members didn't believe in the consensus but couldn't be bothered to contribute to change it). Mulvey, Veiga & Elsass, (1996) discuss several instances where "*team mates raise the white flag*" and withdraw their effort and attention from the group. Importantly, Williams et al (1979) stressed that social loafing is not the same concept as learned helplessness in the face of a dominant coalition, it is a distinct form of avoidance of behaving and contributing at all.

Other relational issues in groups can dominate behaviour (as opposed to issue based sensemaking) as part of the *group development process*. For example Gersick (1988) showed how groups' behaviour can be distracted from the task at hand by their long term ongoing development towards becoming a cohesive work unit. Instead of going through Tuckman's (1965) routine of norming, forming, storming, performing just once, Gersick demonstrated how groups go through a continual process of development with frequent periods of rebellion and revolution. So, distraction from task focused issues would seem to be a permanent feature of group work as issues such as trust (Mc Allister, 1995), affective self evaluation (Prussia & Kinicki, 1996), politics and self interest are worked out.

Power & Political Influence - Bertrand Russell argued that power would become the most important concept in the social sciences.

'the fundamental concept in social science is power in the same sense energy is the fundamental concept in physics'

(Russell, 1938 p.12).

Power has been interpreted in several ways, e.g. as an individual characteristic, as an interpersonal construct, as a commodity and as a philosophical construct (Cavanaugh, 1984). In terms of this research, it is the second interpretation that is important; power as an interpersonal construct. French and Raven (1959) produced a classification of six types of interpersonal power. These were: reward power, coercive power, legitimate power, referent power, expert power and information power (added by Raven 1965). But perhaps the most important contribution that French and Raven made was to stress that influence is only exerted when A recognises that they are influenced by B. Emerson (1962) extended this by pointing out that B too has to recognise that A is allowing them self to be influenced and consequently act to ensure they maintain their ability to influence A. Emerson described this reciprocity a 'tie of mutual dependence' (p.32). These ties of mutual dependence, could be expected to affect the relationship between individual and collective cognition and behaviour in the TMT. In fact, it has already been argued (Walsh, Henderson & Deighton, 1988) that power can effect the actual consensus achieved by a group, and in so doing repress the views of the least powerful group members..

Other authors interested in power have not sought to describe its characteristics but instead have focused on the *skills* of those employing it (e.g. Mangham, 1986). An appreciation of the *use* of power leads to political behaviour; i.e. the mechanisms that individuals use to employ their influence. In their discussion of political behaviour in organisations, Kakabadse & Parker (1984) pointed out that there a significant definitional problems associated with the concept of political behaviour and that it is frequently perceived of extremely negatively instead of as a normal activity in organisational life. They argue that if political behaviour is seen as the application of tactics and strategies of gamesmanship, then all behaviour in organisations has the potential to be political.

Addressing the environment of the TMT in particular, Pettigrew & Mc Nulty, (1995) noted how non executive directors had to pull on both *will* and political *skill* to bring their formal influence to bear. Similarly, Brass & Burkhardt (1993) found that use of power in TMTs was dependent not only on position power but the skilled application of it. Consequently, it may follow that just as power can mediate the relationship between cognition and behaviour, so too can the mechanisms that are employed exert influence i.e. political skill.

In addition to the interpretation of political behaviour as a mechanism to exert influence, political behaviour can be interpreted in a more Machiavellian sense. That is, in terms of

self advancement and or protection. Machiavelli commended three principles of political astuteness; (1) establish if you are in a vulnerable position or need the support of others before you act; (2) esteem those above you but also seek the popular support of those below you; (3) and continually contrive actions that keep peoples' minds uncertain, astonished and occupied watching for the result (summarised by Lazenby in Johnson & Scholes, 1997 p.478). Some authors view senior managers as altruistic *stewards* of their organisation's resources; (Donaldson 1990a & 1990b; Kay & Silberston, 1995) operating without the motive of self interest. Others maintain that once at the top of an organisation, it is a natural (and not necessarily negative) instinct to wish to seek to maintain that position (Garratt, 1996). Whatever the view of the characteristics of those who achieve success, it is reasonable to assume that political behaviour (interpreted as the advancement of one's own agenda) will have an impact on the relationship between cognition and behaviour in the TMT. For example, if in order to reflect true views and opinions during TMT interaction an individual would have to disagree with a powerful team member who has the ability to reward and punish, and it may not be politically astute to do so, they may choose to keep quiet instead: keeping their powder dry in a Machiavellian sense.

Summary - This final base proposition was concerned with a central argument, namely the possibility that collective or individual cognition may not be the most useful concepts to explain behaviour (convergent or other wise) associated with strategy development in the top team. Instead, a range of other variables may intervene and override issue based cognitive influence. This is a 'catch all' proposition in that it is largely anticipated that such factors will be context specific and emerge from the data. However, it is not claimed that the exploration of this proposition was theory free in the way Glaser and Strauss (1968) suggest. Two factors that were anticipated to have an effect were group dynamics and power and political behaviour. These have been briefly discussed to demonstrate how they may intervene in the relationship between cognition and behaviour.

2.4 A Set of Research Questions

It is the task of this section to summarise, clarify and combine the arguments presented in the discussion of collective cognition and convergent behaviour that appeared in the previous section. Four propositions were put forward. The first of these was concerned with the idea that convergent, or consensual behaviour can indeed be accounted for cognitively and that this cognitive explanation is based around homogeneity of beliefs i.e. members of a group are able to act in the same way and achieve consensus around a decision because they share the same view of the decision to be made. This view, although implicitly present in many theories of organisational behaviour as well as those that specifically address MOC, has been effectively discounted. However, as discussed earlier it is included in the thesis to contribute a voice to the argument against the naïve acceptance of this captivatingly simple view in the broader management literature.

An alternative, more considered view was then discussed as Walsh et al (1988) and Langfield-Smith (1992) both argued for the conceptualisation of collective cognition as an overlapping phenomenon that could be used to account for consensus in decision making groups. Again, significant problems with this view allowed for a strong argument to be made against the overlapping view of collective cognition as an effective account of convergent behaviour. Not least of these were the methodological difficulties and the issue of what overlaps and how do individuals fall in and out of agreement.

The strongest arguments made in this section were made in support of the latter two scenarios, namely that collective cognition operationalised as a distributed phenomenon is able to account for convergent behaviour and the final view that collective cognition could in fact be a *red herring* and convergent or collective behaviour better explained by a series of more social constructs.

The distributed view received support from a variety of sources (cognitive, socio cognitive, MOC, and human factors research streams) and had empirical evidence to support the arguments put forward. Specifically the work of Weick & Roberts (1993) and Orasanu et al (1993) provide contextually rich accounts of collective cognition producing collective behaviour in high risk situations. However, as discussed earlier, there are problems associated with automatically transferring the results from these highly formalised, routinised contexts into the organisational environment. The critique offered of this work concluded that new research with the following characteristics would fill a genuine gap in the extant literature: (1) explore the nature of collective cognition and its relationship to consensuality or convergent behaviour; (2) to do so in an environment that is not highly routinised; (3) and to conduct the work in real time and to focus on behaviour as well as cognition. In order to fulfil these demands the following research questions emerged that were able to address all four propositions.

- What is the nature of collective cognition ?
- What is its relationship to convergent behaviour ?

Extending beyond a repetition of the research agenda of others where the contribution to knowledge is derived from the uniqueness of the context exploration, the discussion of the fourth proposition offers a unique contribution in its own right. That is, in paying attention to the possibility of a whole range of social as well as cognitive phenomena in a real time TMT context, offers a new and potentially significant contribution to knowledge. From this position an addition to the final research question emerges.

- What is its relationship to convergent behaviour, and what context dependent factors mediate this relationship in TMT's engaged in the process of strategy development ?

These questions are explored in the case studies that follow in chapters four, five, six & Seven and are operationalised in the research design described in chapter three.

2.5 Summary.

This chapter presented an argument for the consideration of three research questions. The exploration of these questions was justified by identifying a gap in current knowledge of strategy development processes. This gap was concerned with the usefulness of the MOC perspective and in particular the concept of collective cognition and its relationship to convergent behaviour. The extant literature was reviewed, four explanations were found and operationalised in the form of four basic propositions. The next section of the thesis goes on to discuss the specifics of the research design employed to respond to the research questions shown above.

CHAPTER THREE

Research Design Methods & Analysis.

3.1 Overview of the Chapter.

This chapter has three further sections. The first of these (3.2) deals with the issue of research design. The research questions from chapter two are carried forward and used to create an appropriate research design to operationalise them. Once the overall strategy of the research is established, section 3.3 discusses the specific research methods used as part of the research design. The final section of this chapter (3.4) explains the analysis used to interpret the data.

Although the first chapter of this thesis described the overall research design, this is reiterated here to in order to make the arguments presented throughout this chapter clearer. In this research, three case studies were carried out, the first was a pilot case; University Business School, the second was a more detailed case; Colour Scheme and the final case was a longitudinal study; Construct Chemicals. These cases became progressively more sophisticated in terms of: the propositions being tested, the research methods employed and the context itself i.e. moving from a team of middle managers, to two boards of directors. In each case, the teams were engaged in the process of developing and or refining strategy for an important aspect of their business. Team members were asked to share their ideas and views about their strategic issue in one to one interviews and then observed interacting in their team environment. After team meetings, all the team members were re-interviewed. In the first two cases only one meeting was observed. In the last case four meetings were observed. In each case, all four propositions were explored and developed, going through three iterations in total.

As pointed out in Chapter One, getting this type of intimate access to TMTs proved to be extremely difficult, taking over a year to gain access to the last two organisations. To find a TMT willing to allow open access to their meetings for four months was especially difficult. The success of this work in finally achieving access into the TMT environment can be viewed as one of its major assets.

3.2 Research Design

The review of the literature that appeared in chapter two addressed the concepts of *collective thinking* and *convergent behaviour*, the relationship between the two and arrived at four explanatory propositions. It was concluded that there were still important questions to answer about the phenomenon of collective cognition. These questions were broadly encapsulated in the research questions of the thesis.

- What is the nature of collective cognition ?
- What is its relationship to convergent behaviour, and what context dependent factors mediate this relationship in TMT's engaged in the process of strategy development ?

As well as these research questions, the review of the literature produced a set of design requirements for the research. The first of these was for there to be a central concern with cognition. Second, as the research was focused on the strategy development process, the most useful population to be studied were TMTs actually engaged in the process of developing and implementing strategy. Third, the arguments made in the previous chapter supported the possibility that collective cognition may be an active, situated and social process. Consequently a requirement of the research design was that cognition should be studied at the group or collective level. This meant drawing data from entire groups, in this case complete TMTs as opposed to a representative sample of a few individual group members or directors. Fourth, as there was a concern with the explanation of convergent behaviour, in all four of the propositions presented in the previous chapter the research design was required to have a clear focus on behaviour in addition to its cognitive element. Fifth, the critique of propositions one to four found the empirical work cited to be commonly flawed in terms of research site chosen (all surrogate environments, either experimental or non management) and research strategy employed (retrospection instead of real time). Of the research discussed, all fell into one or other of the above traps. Therefore, an important part of the design of this research was that it was conducted in real time and in a real TMT context. Finally, as argued in chapter two, there is a genuine paucity of research that explores the nature of collective cognition and its relationship to collective action in the real time context of TMT decision making. The lack of established research findings in this area meant that an *a priori* research design would be inappropriate in what was, and is, a highly exploratory field.

In summary the six requirements outlined above present a set of key characteristics to be carried forward into the design of the research that can be described as exploratory research, conducted in real time and concerned with TMT cognition and behaviour during strategy development activity. Each of these key characteristics is discussed in the subsections that follow.

1) An Exploratory Design

In light of the key characteristics described above, research designs usually associated with a quantitative approach were discounted. This was the case because the exploratory nature of the research could not support an *a priori* approach in which a set of tightly defined and well understood constructs could be isolated and measured in terms of their relationship to one another. Although there are clues within the MOC field that indicate constructs that may be significant in the exploration of the research questions, these are not defined tightly enough and have not been subjected to sufficient prior investigation to be isolated in terms of predicted and proposed relationships.

Another major reason for employing an exploratory design was the subject matter itself. That is, in order to make a response to research questions above, the links between cognition and behaviour have to be *observed*. Consequently, it would be inappropriate to ask respondents to measure this and especially retrospectively (Golden, 1992;1997).

If an *a priori* approach is rejected and an exploratory approach accepted, the demand for generalisable research findings is removed, as is the necessity to offer a research design in which multiple response is a central design criteria. The acceptance of an exploratory approach also leads to the rejection of structured forms of data collection, e.g. survey, questionnaire based methods and standardised instrumentation. In short large scale research and the techniques usually associated with it were inappropriate for this work.

It followed that if large scale research designs were inappropriate, then in depth designs were appropriate for the investigation of the research questions presented in Chapter Two. For example, as the research was highly exploratory the research design should aim to capture as much detailed information as possible. Premature bounding of the data collection possibilities in terms of pre-defined constructs could have significantly limited the study's contribution to knowledge.

Exploratory, in depth research usually contains some or all of the criteria listed below (Miles & Huberman, 1994). This research in fact fulfilled all.

- Intense and prolonged contact in the field.
- Designed to achieved a holistic or systemic picture.
- Perception is gained from the inside based on actors' understanding.
- Little standardised instrumentation is used
- Most analysis is done with words
- There are multiple interpretations available in the data
- The challenge is to find the most *compelling* interpretation based on theory or internal consistency.

In fact, these criteria are generally satisfied by limited response case based designs where detailed information can be gathered in situ prioritising the experience of the actors. Several examples of case study research concerned with group behaviour and strategy development processes can be found in the literature (Mintzberg, 1973; Wilson, 1982; Pondy & Huff, 1983; Pettigrew, 1985; Johnson, 1988; Gersick, 1988; Dutton, 1989; Gioia & Thomas, 1996). The fundamental aim of case study research is to add definition to a subject matter by providing a *detailed explanation* of the chosen problem. Frost and Stablein (1992) refer to the task of the case study researcher who is looking for new insights in this way as:

"fishing in the murky waters of real phenomena without the security of a set of clear empirical findings"

Frost & Stablein (1992 p.51)

Once a case based design was adopted, several further important decisions and issues emerged. These are listed below and were adapted from a series of texts on case study and ethnographic methods (Hammersley & Atkinson, 1983; Schwartzman, 1993; Yin, 1994; Wolcott, 1995; Bowers 1996). Each of these issues is discussed terms of the research design of the thesis in the sections that follow.

- How many sites should be accessed
- How should sites be chosen
- How long should the fieldwork last

How many sites should be accessed - The issue of how many cases should be accessed can be problematic in any research and can be largely dependent on other variables not least of which are time, financial and human resources as well as the limitations surrounding particular research sites. But more important than these, is the *type* of contribution to be made.

Yin (1994) covers the important issues involved in the selection of the number of cases to be conducted. He suggests that a *single highly detailed* case study is appropriate if, for example, it is a critical case in the testing of a particularly well developed theory. In this research this is plainly inappropriate as no clear cut theory exists, indeed the aim of the research is to act in a theory generative mode. The second rationale for examining a single case is if that case is in itself unique. One example could be an extremely successful top management team. Again this was an inappropriate option for this research that was seeking to make a more generalist statement. The third argument for the single case study approach is if the case is revelatory and opens the door to a phenomenon not previously observed. This final argument fitted the subject matter of this work in that, although the relationship between collective cognition and convergent behaviour had been studied before (e.g. Weick & Roberts, 1993), it had not been studied in a non-routine, low velocity environment.

However, according to Yin (1994) there are potential vulnerabilities associated with a single case design. Practically, these include problems encountered once in the field; e.g. the sponsors of the research may become less supportive or indeed leave the organisation. In addition the fieldwork may prove unsuccessful for a variety of reasons not least of which is an unwillingness of key informants to co-operate. The single case may also create vulnerabilities in terms of the conceptual and theoretical boundaries it places around the research. In effect, it could limit the theorising that can be done in already an impoverished field, i.e. claims could only be linked to a single context and not explored more deeply in multiple contexts.

A practical solution is to create a multiple progressive case design that weaves in the possibility of a greater degree of theorising around a greater number of encounters to create what Yin calls a more *compelling* account (1994 p.45). One of the greatest strengths of following a multiple progressive case design is that it follows the fundamental principles of scientific method. That is, a finding discovered in one case can be tested in another to confirm, deny or refine the parameters of its existence and then tested in further case. Hammersley and Atkinson (1983 p.37) suggest that a progressive process is continually taking place during the course of any fieldwork, as issues become identified with more precision and new categories are developed. A progressive case study design simply applies this principle across several sites.

In addition to Yin's arguments, from the outset of the design of this work, it became clear that the richness of detail, the depth of access, the possible multiple methods to be

employed as well as the highly pressured context of top management team environment life would place significant demands on the skill of the researcher. Using the example of cognitive mapping protocol, Eden (1992) comments on the way in which the skill of an interviewer can significantly affect the end product of qualitative research. To gain access to a top management team without practising, developing and refining research skills such as interviewing and observational techniques would have been an ill advised strategy and potentially a waste of valuable access. Therefore the choice of a multiple case design was appropriate not only in terms of the criteria outlined by Yin, but also in terms of a learning curve of methodological expertise which could be followed by starting the research with a small simple case building towards the end product of a longitudinal complex case.

Closely linked to the concept of a methodological learning curve achieved via the execution of multiple cases, was the possibility of theoretical development throughout the whole research period. The opportunity to do this was especially important as this research was highly exploratory and the base propositions made at the outset of the research were limited and in places somewhat naïve. As already described in the previous chapter, these propositions were developed during the course of the research, not just through the early stages of literature reviewing and research design but also through the latter periods of fieldwork and analysis when in other more structured designs, basic ideas and assumptions can be expected to be fixed. Consequently, theoretical development was achieved using the multiple case design by considering theory throughout the entire research period not just at the intense periods of learning that are usual at the beginning and the end of a project.

In light of these arguments: practical, theoretical and methodological, a multiple case design was adopted. Due to time and resource restraints, the number of cases conducted was limited to three. The justification for the selection of these three cases is discussed in the section that follows where the choice of sites is explained.

How should sites be selected - As already explained at the beginning of this chapter, three sites were selected. The first and most basic case (University Business School) used a surrogate context, (middle management team and not a top management team) offered a brief snap shot of cognition and behaviour in action and was initially designed to test proposition I alone. However, the data collection protocol was flexible enough to pick up sufficient data to generate other alternative explanations should proposition I fail to account for the events in University Business School. Propositions II, III & IV were introduced at the end of this case and carried forward to the next; Colour Scheme. This second case did not use a surrogate context, the team accessed were the executive board of this family business. Proposition II, III & IV were developed during this case that observed just one board meeting. The revised propositions were then tested with the top management team of Construct Chemicals, a UK subsidiary of a major FTSE 100, multinational organisation. In this final case, four meetings were observed and four sets of interviews carried out.

The issue in this section is the explanation of *how* these particular sites and not others were selected. As a pilot study, the selection of the first case was not *as* important as those that followed. The most important concern at this stage was the speed of access, i.e. to move the research into the field. Speedy access was gained to a middle management course development team based in a university business school. Although not a top team, this team were dealing with a budgetary issue with of major importance to their course that had long term implications. In addition one of my supervisors was a member of the team and therefore able to help perfect interview and observation techniques, as well as offering useful source of feedback during data analysis.

The cases that followed this pilot case proved to be more difficult to access. There were several pre-requisites for site selection. However, the most important point to be recognised during the negotiation of access to the final two cases (which took a year from the end of the pilot case), was the difficulties associated with gaining access to what has been described as the inner sanctum (Garratt, 1986) of organisational life. The problem of gaining access for qualitative research has been described as a thoroughly practical issue (Hammersley & Atkinson, 1983 p.45) and one in which the researcher often has limited control. A number of organisations were approached via Cranfield contacts and the project was discussed with them. Ultimately though, the first to agree were those that appear here: i.e. a self selecting sample. That is not to say that this selection was random. As just mentioned, there were certain pre-requisites that acted as a kind of 'sampling frame' (Mosser & Kalton, 1978). So, whilst acknowledging the inevitable degree of 'convenience sampling' used in this work, the argument here is that there was an attempt to apply a certain number of pre-requisite requirements to this process in order to try to get access to the type of sites that would be most useful to the development of the propositions. These are listed below.

- Access need to be gained to TOP management teams.
- These teams needed to be currently engaged in a process of strategy development.
- All team members had to be willing to participate.
- The teams should not see the research as a consultancy project i.e. feedback would be delayed.
- Considering the importance of *convergent* behaviour to the propositions developed at the end of the pilot case, access needed to be gained to teams who had certain characteristics that may indicate that they had the potential to converge.
- As the research could only access two further organisations, the *sample* either had to be matched or contrasting in order to appreciate the generalisability of the findings on some level.

The final two points listed above require a little more explanation. First the issue of potential convergence. As already mentioned, the notion of convergent behaviour, operationalised as agreement to a specific decision or general course of action, was central to the propositions developed from the literature and the pilot case. Consequently, it was important to try to select top teams that at least had some characteristics that might lead to the expectation that they were likely to be a convergent team. The second case; Colour Scheme, matched this requirement as they were a long standing team responsible for the management of a small family business. Construct

chemicals were a new team, part of a major multinational organisation and anticipated to be convergent for the following reasons: (1) they had a new MD who had been recruited as a high flyer with a past record of success; (2) they had a management consultant working with them as part of their TMT; (3) they had the benefit of the training, support and the professionalism required by their parent organisation; (4) they were as a TMT already engaged in a program of major change and were unlikely to be making further objections on political or personal grounds to the concept of strategic change *per se*.

It emerged that *neither* of these teams were convergent. However, this did not prevent the development of propositions II, III and IV and in many ways it assisted it. Nevertheless, it remains as a limitation of the research that is addressed in Chapter Eight.

The second issue listed above was concerned with the selection of a matched or contrasting sample. As the research was exploratory and designed to be *in-depth*, it was recognised that it would not be possible to make generalisable statements about collective cognition and convergent behaviour in top team interaction during periods of strategy development. However, careful sampling can usually allow for some tentative statements that extended beyond the specific research sites to be made. For instance, if a closely matched sample were chosen and different results found then factors such as industry, the structure of the TMT, and at a general level the nature of their business, could be discounted in favour of more micro issues i.e. team specific. The reverse was true of a contrasting sample (Nachmias & Nachmias, 1990). In terms of practicalities, there was more chance of finding two organisations who were in different industries and of different sizes etc. than finding two the same. Consequently, it was decided to try to find organisations that contrasted in terms of a few basic characteristics: industry, size, ownership. As already described above, Colour Scheme (a fine arts products manufacturer and family business) and Construct Chemicals (a manufacturer of chemicals for the construction industry and part of a major multi-national) were considered to be contrasts.

One further complication in the selection of cases was that access was gained to the last two sites at the same time; January 1996. At this time, initial negotiations with each team moved rapidly towards access. This meant that the *progressive* element of the design was under threat i.e. the period of reflection between the second and third cases was lost. This had several methodological implications that will be discussed later as well as practical difficulties associated with managing data collection in two sites some several hundred miles apart at the same time. However, on a theoretical note (i.e. the development of the propositions II, III and IV), this was not an issue as the third case was not analysed in any way until the analysis of the second had been completed and written up in draft form. In this way lessons from the second case could be employed in the third. Note that the decision to go into Construct Chemicals at the same time as Colour Scheme was a thoroughly practical one. Access for a piece of longitudinal work in particular had been extremely difficult to negotiate and it was considered foolish, even in light of the difficulties it created, to turn the opportunity down.

How Long Should the Fieldwork Last - Until all the questions are answered would seem the most obvious answer. However, a series of points made by Hammersley & Atkinson, (1983) shows that this is not a straight forward issue. First, the experience of the fieldwork often reveals that time spent in the field often *creates* more questions than it answers. Second, the real mental work involved in answering research questions has to be done in analysis away from the field to achieve some form of closure on an ethnographic research project. Third the researcher has to time their exit into analysis *early* enough to allocate enough time to it but *late* enough to have sufficient data to analyse (Hammersley & Atkinson, 1983). The decisions of how long to spend in the field were made in advance in the first two cases. It was decided that these cases would observe and collect data around just one decision making meeting / board meeting. The fieldwork was subsequently complete after follow up (post meeting) interviews had been conducted with each informant.

However in the third and final case the exit decision was more difficult. In this case time was the major constraint on both the parts of the senior managers involved and my own. Only a finite amount of time could be allocated for fieldwork, and the informants obviously wanted some feedback to improve the way they worked as a team. It was negotiated during initial access that four months of top management team meetings would be attended and supported by interviews with all directors. At the end of this period feedback would be delivered to the key informants individually and as a group. After this time it was agreed that I would continue to attend meetings and off site events as before but no individual interviews would be carried out. During the data collection phase no feedback was given and it is this period that is written up in the thesis. This continued contact with the top management team and in particular regular contact with their MD, helped maintain a full and rounded picture of the events facing this team over a whole year.

The final decision to exit and maintain less frequent contact with this team came with the realisation that things were becoming too familiar. I had begun to feel *at home* and was asking fewer and fewer questions as I thought I already had the answers. This feeling is flagged by Everhardt (1977 p.13) and Hammersley & Atkinson (1983 p.83) as time to get out.

"Saturation, fieldwork fatigue and just plain fitting in too well culminated toward the end of the second year in a diminishing of my critical perspective."

Everhardt (1977 p.13)

Contact with this organisational finally ended in January 1997, exactly a year since initial negotiations had begun.

In summary then, to fulfil the requirement for the research to be exploratory, a case based approach was selected as a general and overarching design. A progressive (and therefore multiple) case design was employed on three grounds; practical, theoretical and methodological. The data gathering design is summarised in table 3.1 below.

Table 3.1: A Summary of the Organisations Selected as Cases.

Case No	Site	No of Informants	Interviews Conducted	Decision Meetings Observed.
1	University Business School	6	12	1
2	Colour Scheme	6	12	1
3	Construct Chemicals	6	30	4
Total		18	54	6

Having dealt with the requirement for this work to be exploratory and consequently case based, the discussion can now return to the remaining requirements that emerged from the research questions of the thesis.

2) Real Time Design Conducted During Periods of Strategy Development.

The requirement to carry out real time research conducted during periods of strategy development decision making was satisfied during the sampling process. That is, only those organisations about to engage in (or already engaged in) a key period of strategy development were approached, or followed up after initially approaching Cranfield. In the first case, the middle management team of University Business School faced an issue based on a central part of the course they offered. This issue raised questions about the team's core aims and objectives in its course as well as the allocation of a considerable proportion of their budget. With case two, the TMT of Colour Scheme were attempting to resolve environmental pressures to change the way they did business in order to survive in an increasingly changed market for their products. With case three, there were again significant environmental changes that were forcing Construct Chemicals to reappraise the way in which they operated to achieve a critical mass of business and maintain their market share. Specifically, in order to become more competitive they had to institute a program of major change in their operations management.

All of the issues faced in cases one to three matched some or all of the characteristics commonly associated with strategic decisions. Namely that they are long term, designed to achieve competitive advantage, are concerned with the scope of the organisation's activities and are concerned with matching organisational characteristics to environmental demands (Johnson & Scholes, 1997 p. 4).

3) A Design Focused on Cognition and Behaviour Within TMT's

The research questions of the thesis were concerned with the exploration of the relationship between collective thinking and convergent or consensual behaviour in top management team engaged in strategy development (i.e. agreement to a specific decision or general course of action). To capture any existing or emerging collective cognition, the research first had to be structured specifically to elicit individual cognition and individual behaviour. Once individual cognition could be established and monitored any change towards a collective or teamwide view could be noted and its relationship to convergent behaviour established and understood.

Individual cognition can be approximated using a cognitive mapping technique. The specific choice of technique is discussed in the methodology section that follows. However, in terms of the structure and design of the research, one to one interview time was required to conduct a cognitive mapping exercise with each informant. In addition, as the research questions demanded an interest in cognitive change and the emergence of a possible teamwide product, a single mapping event was not sufficient. Each informant was required to be interviewed at least twice: before and after a team meeting. In cases one and two just two interviews were carried out with each informant whereas in case three, four interviews were carried out with each informant.

The final element to be included in the research design was the behavioural element. The challenge was to collect data that captured individual behaviour in the TMT environment that was part of the strategy development process. This data could then be used to explore the extent to which individual and or collective cognition appeared to account for individual and convergent behaviour in the team environment. This challenge was satisfied by observing TMT meetings in which the teams' key strategic issues were discussed.

In summary then, to capture both the cognitive and behavioural elements required to answer the research questions of the thesis, one to one interviews and non participant observation were the vehicles for data collection in each of the three in depth case studies. The complete design of the research is summarised in table 3.2 below.

Table 3.2: The Overall Design of the Research.

Date	Case One <i>University Business School</i>	Case Two <i>Colour Scheme</i>	Case Three <i>Construct Chemicals</i>
Sep. 1994	Negotiations		
Nov 1994	1 st round interviews		
Dec 1994	Team meeting		
Dec 1994	2 nd round interviews		
Feb 1995	1 to 1 feedback sessions		
Mar 1995	Group feedback session		
<i>Looking</i>	<i>For</i>	<i>Additional</i>	<i>Sites</i>
Jan 1996		Negotiations	Negotiations
Feb 1996			1 st team meeting
Feb 1996		1 st round interviews	1 st round interviews
Mar 1996		Team meeting	2 nd team meeting
Mar 1996		2 nd round interviews	2 nd round interviews
Apr 1996			3 rd team meeting
Apr 1996			3 rd round interviews
May 1996		1 to 1 feedback sessions	4 th team meeting
May 1996			4 th round interviews
Jul 1996		Group feedback session	
Aug 1996			1 to 1 feedback sessions
Sep 1996			Group feedback session

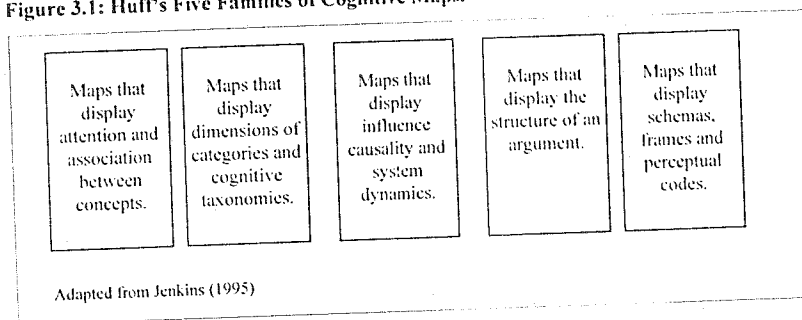
3.3 Specific Research Methods Used.

In this section, the specific methods used to collect the data are discussed. As the design of the research was progressive, the methodology employed was not the same in each case. In this section, the overall strategy adopted is discussed. In the write up of each individual case (chapters four, five and six) a more detailed discussion of variations from the strategy described here are given. This methodology section has three further subsections that discuss: cognitive mapping methods, in-depth interviewing, and observation of group interaction.

1) The Cognitive Mapping Method

The MOC field has made use of various tools and techniques to access the mental models of the management population in general. Mapping techniques are designed to approximate the contents and or structure of managers mental models in varying degrees of detail. Huff (1990) categorised the range of maps produced within MOC work into five families. These are shown in figure 3.1 below.

Figure 3.1: Huff's Five Families of Cognitive Maps.



No matter what the intended form of map a researcher may wish to produce, it is crucial to recognise that maps are not actual paper or electronic transformations of managers' thinking. In other words they are NOT models of cognition but approximated displays of elements of managers thoughts at a specific point in time, noted in a particular ways that determine their format and in many instances their content.

The key to the quality of the end product of cognitive mapping lies in the recognition of two important issues: (1) the quality of the theory of cognition the researcher employs to frame their predictions about what is occurring when an informant attends to and interprets a piece of information; (2) the elicitation technique the researcher uses to access an informant's interpretation of an initial stimulus and in effect retrieve information from long term memory. In short, the output of cognitive mapping depends on the quality of the cognitive theory used and the elicitation technique employed. These issues were both raised and discussed by Eden (1992).

"the only reasonable claim that can be made of cognitive maps as an artefact is that : (1) they may represent subjective data more meaningfully than other models and so have a utility for researchers interested in subjective knowledge, and (2) they may act as a tool to facilitate decision making, problem-solving, and negotiation within the context of organizational intervention."

Eden (1992 p.262)

Eden summarises this view by arguing that cognitive maps should be seen as *collections of thoughts* evoked and recorded at a point in time as opposed to a model of an individual or group's *thinking*. This statement has within it a strong message about the context dependency of cognition.

This view of context dependency implicit within Eden's arguments is supported by Lord and Maher's (1991) discussion of the state of the art in cognitive theory within Industrial and Organisational Psychology. In their review they highlight the potency of the connectionist school of cognitive theory. For connectionists such as Anderson (1983, 1985) knowledge is implicit in neural connections between constructs and working memory only exists in the presence of a stimulus that triggers a specific spread of activation amongst constructs. So in connectionist models of cognition what is important is not how constructs are stored but how they are activated. Therefore the context in which a memory is triggered is crucial.

Over and above these limitations, the cognitive mapping method can offer an opportunity to suggest in a visual form, what the reasoning behind behaviour might be (Fiol & Huff, 1992) by eliciting a collection of current thoughts in response to a provided stimulus or series of questions. The further benefit of cognitive mapping is its ability to tap into and encourage the verbalisation of a holistic synthesis of an individual's subjective view of the world at a particular point in time (Huff & Fletcher, 1990). However, in choosing a cognitive mapping technique to use two further issues need to be considered: common pitfalls in the use of the method and how a technique can be chosen from the many available in terms of these pitfalls. Each of these issues is now discussed.

The Pitfalls of the Cognitive Mapping Method - Returning to the points made by Eden (1992), the end product of cognitive mapping depends on the theory of cognition that is either implicitly or explicitly evoked and on the means of elicitation employed. The state of the art in theories of cognition would suggest that human thinking is a highly context dependent and situated phenomenon (Lord & Maher 1991; Edwards & Potter, 1992; Orasanu & Salas, 1993; Resnick, 1993). Consequently, two issues that illustrate the pitfalls of cognitive mapping particularly well are; the extent to which the technique used is context dependent or independent (a theoretical point); and the type of data used i.e. gathered directly from an informant or indirectly from written documents (an elicitation point).

Context dependent methods (Eden, 1992, Daniels, De Chernatony & Johnson, 1995; Allard-Poesi, 1997; Johnson, Daniels & Asch 1998) are those in which the researcher does little to pre-define the contents of the map; in effect offering the informant a metaphorical blank sheet to work with. By allowing the informant to define their own constructs and therefore the context in which they verbalise their current thoughts and to do so in an unstructured format (i.e. imposing no pre-defined hierarchy on the constructs elicited), these methods take account of the context dependency of cognition. Other methods that are context independent, (i.e. the researcher provides their informant with a pre ordained list of constructs from which the informant is asked in various ways to create a map), fall short of the standard of theoretical adequacy adopted in this research. Examples of this form of mapping are Bougon (1983); Porac, Thomas & Baden Fuller, (1989); Reger, (1988), Markoczy, (1995). This form of mapping would be appropriate if cognition was being studied in isolation of behavioural comment i.e. the cognitive science argument that cognition can be studied in its own right. However, these authors to extrapolate their findings to discuss organisational behaviour on some level. Consequently they fall victim of one pitfall of cognitive mapping.

In terms of the second criteria upon which mapping efforts can be judged (the source of data) there is also a range of work that demonstrates good and bad practice. From what we know of cognition (i.e. context dependent) it would be difficult to award much credence to maps that have been crafted from documented archival data such as memos, company reports, minutes of meetings. Such maps (e.g. in the case of those crafted from company reports) may tell us a lot about what a company wants the outside world to think it is thinking, but little about what individual managers are actually thinking and the issues that in reality, may predict any future actions of the company and the individuals within it. Examples of this form of archival mapping are Fahey & Narayanan (1989); Fiol, (1989); Barr, Stimpert & Huff, (1992).

It is argued here, that good 'mapping' practice (in terms of the source of data used to elicit maps) recognises the transient nature of cognition by accessing thoughts directly from informants. Following this basic principle produces maps that can lay claim to a better approximation of thinking, than those extrapolated from documentation of various forms. Examples of techniques that gather data directly from informants are (Bougon, 1983; Walsh et al 1988; Eden, 1992; Daniels, De Chernatony & Johnson, 1995; Jenkins, 1995; Allard-Poesi, 1997; Johnson Daniels & Asch, 1998). It is important to note that just as maps crafted from archival data can be effected by the issue of audience (who were the documents written for effecting their representativeness), direct elicitation methods may also suffer from an informant's desire to either project a particular image of themselves and their organisation or to give the answers that they think the interviewer wishes to hear (social desirability effect). Golden (1992, 1997) has extensively criticised the use of retrospection in strategy based research, whilst others recognise that the issue of audience and social desirability although endemic in much social science research, can to some extent be managed (Huber, & Power, 1985). In truth, it is likely that their possible effects can never be fully and with all certainty removed. However, if safe guards such as assurances of anonymity, confidentiality, and

non judgmental empathy projected during interview are in place, then their effects can at least be minimised.

In addition to the criteria discussed above, Stubbart & Ramaprasad (1990) discuss another relevant issue. The argue that any elicitation technique employed should demonstrate expressive adequacy. That is, be intuitively appealing to the informant and easy for them to understand. This point links ups to the previous two in that if a map is context dependent (working with the informant's own constructs), then it will be easier for them to understand than a task which involves ordering a series of cards that display someone else's thoughts and ideas. In addition, choosing to use documentation as a surrogate for thinking does not allow an informant any expressive opportunity at all. For example a set of minutes may be used to assess group thinking without taking account of the possibility that not all the individuals in the group agree with those minutes or were even consulted about their contents.

In summary, the three common pitfalls in cognitive mapping are to employ a method that is context independent, uses secondary data and allows the informant little or no expressive adequacy. It is in terms of avoiding these pitfalls that the choice of mapping method in this research was made.

Choosing A Method - According to Huff & Fletcher (1990) choosing a mapping method is dependent on three criteria: the *purpose* of the map, the *territory* of the map (i.e. whose cognition an individual or a group) and the *source* of data (direct or indirect). The purpose of the map in this work was to elicit the constructs that managers are paying attention to (in terms of their strategic issue) at the time of their interviews and record the associations between them. In terms of Huff's (1990) families of maps, this lead to a map that *displayed attention and association between concepts*. In other words, the structure and hierarchical taxonomies present within and individual's thought were less important. The territory of the map was to tap into individual managers' cognition and to do so by gaining data directly from source i.e. from the managers themselves.

Combining Huff & Fletcher's (1990) criteria with the critique of mapping methods in the previous section (i.e. that a mapping method should be context dependent, use primary data and allow the informant expressive adequacy), led to the choice of a *visual card sorting technique* (VCST) designed by Daniels De Chernatony & Johnson (1995). This technique, described below, was employed as it achieves a satisfactory measure of attention and association between concepts as well as being simple and quick to use.

The VCST requires an informant to think about a stimulus; in this case the strategic issue currently being managed within the TMTs, and verbalise their current thoughts about that stimulus in terms of major issues and their constituent parts (constructs) and the relationships between them. These constructs are noted on 'post its' or cards that are then arranged by the informant on a large sheet of paper. A transparency is overlaid and the individual is able to use coloured pens to add first order of coding to the map (pulling out critical concepts and relationships). This technique was used twice during each meeting cycle. It was used before a meeting to approximate each individual

manager's perception of their strategic issue before a management team meeting. It was also used after a management team meeting to re-assess each individual's perception after a formal interaction with other colleagues.

This application of the VCST was a considerable modification from the original technique as employed by Daniels et al (1994). The modifications occurred in response to practice in the field using the original version (Johnson et al, 1998). In the original version informants' constructs were noted on cards that were arranged on the table in front of the informant and then photographed. This version often gave the informants the impression that the mapping itself was a one shot event with no chance to move the constructs around once photographed. In addition, once cleared away, the map was no longer available for the participant to refer back to in later stages of the interview. The *post its* stuck onto the paper kept a permanent record of the arrangement. The transparency overlay was added to allow the participants to draw on their map and illustrate as many links and relationships as they wished. The revised format was therefore a much more *expressive* medium for the informants to use and one in which (in my experience of conducting over one hundred VCST interviews¹), the informants were able to become thoroughly engaged.

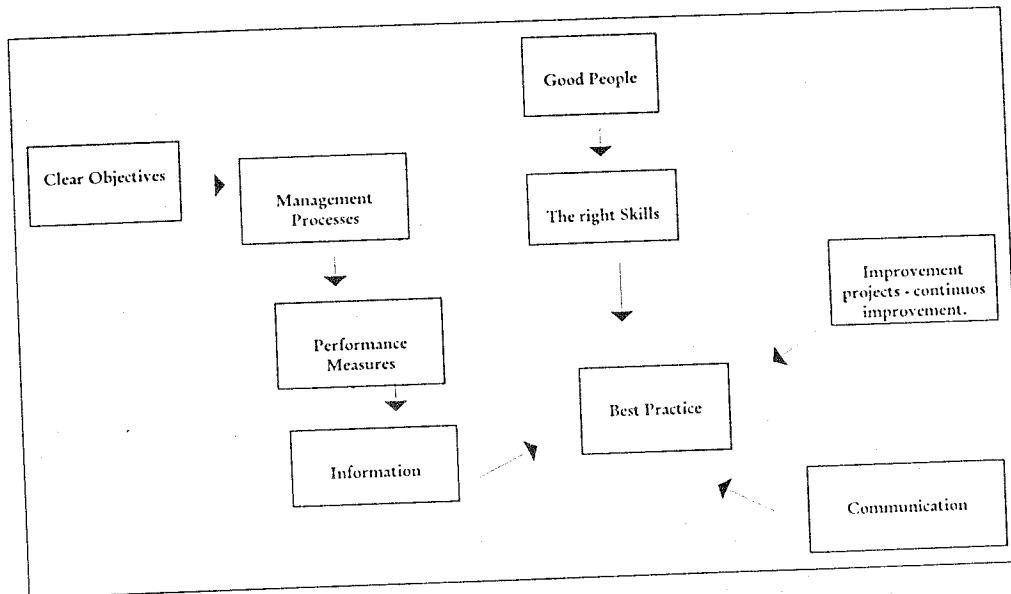
The VCST employed in all three case studies, produced a total of forty six maps. Although this technique was used in all of the cases, it became apparent during the analysis of case two, which began at the end of data collection in case three (see table 3.3), that the data the VCST was delivering was a little too simplistic. That is, the maps (see figure 3.2 below for an example from case three) in their basic form were not offering a true *enough* representation of the richness of linked ideas and themes that were evident when listening to the taped interviews. Consequently potentially important chunks of information were missing on the VCST maps that were present in the transcripts.²

Unfortunately, at this late stage of data collection in case three, it was too late to change the research design by replacing VCST with another context independent mapping technique.

¹ VCST interviews were conducted as part of MSc project, as a research assistant for Daniels et al (1995) and finally as part of this thesis.

² Subsequent experience mapping at group level has compounded this belief, a discussion of this and other methodological points will appear in later chapters..

Figure 3.2: Malcolm Stanton's 4th round interview in May 1996 where he was discussing the problem of overhauling the operations function in Construct Chemicals.



The problem of lack of representativeness that the VCST introduced was tackled at a later stage of case three by choosing to approach the analysis of this case in a different way from cases one and two. This was done in an attempt to capture more of the richness and the detail of the informant's verbalisations. These varying analytical protocols are discussed in each of the case study chapters. It is important to note that the problems with the VCST did not invalidate the research methods used, it simply presented a particular issue in the last case where more complex relationships were being uncovered. As the interviews had been taped, the data was still available to be worked on and so in a sense it was the means of managing that data as opposed to the data itself that was problematic.

2) In Depth Interviewing

In addition to using one to one interview sessions with each informant to produce a series of cognitive maps, these sessions were also used to gather a range of data to help construct explanations of the relationship between collective thinking and behaving in TMT's. This additional data gathering fell into three themes taken from the extant TMT literature: career background, personality type and position of power and influence within the group.

The collection of career / background data (which was used to open every first interview) effectively warmed up the informant by asking them to talk about what people frequently find easy to discuss, stories of their past. It also allowed tangents to be followed that gave a full picture of the *person* being interviewed. These data were not

collected in any structured way. The discussion started at University or equivalent and moved to the present day ending with future hopes and plans.

The collection of this type of data is supported by the demographic school of TMT research beginning with Hambrick & Mason (1984) who made the suggestion that individual career histories can have an impact on the process of strategy generation. This idea has been developed and extended by several researchers working within a demographic approach to understanding top management team behaviour.

Moving on, recent consensus research in particular has pointed to personality as a key variable in the explanation of agreement generation and the subsequent compliant or non compliant behaviour it promotes in top management teams (Dess & Priem, 1995; Woolridge and Floyd; 1989). There has as yet, been no empirical work published that clarifies the role of personality in this sphere. However the inclusion of the personality sphere as baseline data was speculatively included as its measurement allowed for informed comment rather than supposition. The specific personality test used was changed after the pilot period of the research from the Myers Briggs Type Indicator (MBTI) to Eysenck's Personality Questionnaire (EPQ). Kline (1993) points to the strong factorial foundation of the EPQ that along with its consistently high factor loadings, makes it a superior test of the personality sphere than the MBTI. In addition the publication of the EPQ - R (a revised version that tightens up some areas of factorial weakness) offers an even more robust test.

Finally, the issue of each individual's position of influence within their group was seen as important to the explanation of the relationship between collective thinking and collective behaving. Collection of this data was highlighted as important by Walsh & Fahey (1986) and Walsh, Henderson & Deighton (1988) in their studies of negotiated belief structures and well as in base proposition four. The concern here was with a general understanding of influence from the multiple perspectives, of the rules, routines, pecking orders, common ways of behaving and common preoccupation's within the group. This data was accessed in an unstructured way simply opening discussions about the issues with each informant.

3) Gathering Observational Data During Group Meetings.

Access was negotiated in each of the three case studies to be present at either one or a series of groups meetings. Each of the meetings attended was audio taped from start to finish. The sections of the taped meeting when the issues selected for study were discussed were transcribed. The meetings varied in length from three to eight hours. Notes were taken in each meeting noticing details that the tape could not pick up, in particular non-verbal behaviour. These notes were later used to annotate the meeting transcripts. The formal minutes taken by one of the team members in each site were also gathered to offer an interesting comparison of different views of the same event. A fieldwork journal was kept for the full period of data collection in case studies two and three. It recorded behaviour observed in the field that occurred outside of formal meetings and interview sessions, i.e. conversations over lunch, in the corridor, on the

phone, as well conversations and behaviour observed while waiting for appointments or meetings to begin etc. It also recorded my own impressions and feelings at the end of each interview which were extremely useful in their subsequent interpretation.

In summary, data were gathered in each of the case studies using three basic approaches: cognitive mapping, in depth interviewing and observation of group meetings. The VCST was used to produce context dependent maps gathered directly from the informant that display attention and the association between concepts. Interview sessions were also used to gather additional data about career history, personality and positions of influence with the groups. Finally, group meetings were observed and tape recorded with transcripts later annotated using notes made in the meeting and in cases two and three, a fieldwork journal. This methodology delivered a huge amount of data with the forty six interviews and six meetings combining to produce over eight hundred pages of transcribed data.

3.4 Data Analysis

As a reminder, the data from each case broke down as shown below. In each case, all interviews were transcribed in full³. The tapes made during each meeting observed were also transcribed. These transcriptions were annotated with the fieldnotes that had been made during the meetings.

• Case One	5 informants	10 cognitive maps	10 interviews	1 meeting transcript.
• Case Two	6 informants	12 cognitive maps	12 interviews	1 meeting transcript.
• Case Three	6 informants	24 cognitive maps	24 interviews	4 meeting transcripts

The task of analysis, whether qualitative or quantitative, is to produce the most convincing interpretation of the data collected in response to a predefined research question. However, the process of analysing qualitative data is difficult to navigate as there is no orthodox approach as in quantitative analysis. In addition, as qualitative data is usually part of an exploratory research design, there can be many captivating and varied interpretations to be found in this undoubtedly rich form of data (Miles & Huberman, 1994). The process of analysing qualitative data has been described as an art form by Wolcott (1995). He stresses that the interpretive insight of the researcher is one which is difficult to commit to paper (i.e. how a crucial connection between category A and category B dawns on an individual may in some instances, be almost impossible to account for). But no matter how difficult to order, qualitative research still demands that rigorous processes and practices are followed and these in turn demand the adoption of an overall analytic strategy as an explicit means of approaching data interpretation.

Yin (1994) outlines two basic options. The first of these is to rely on propositions as a means of interpreting the data. That is exploring the data only in terms of proposed relationships (however loosely defined) between concepts and constructs. The second of Yin's options is to develop a description of the case in an emergent 'grounded' fashion.

³ The interviews were transcribed by a third party and then checked by me whereas I transcribed all the meetings.

In this research, a combination of both approaches was adopted, that is the propositions in their basic form were applied to the data collected in each case⁴, but data that did not fit within the explanation offered by each proposition was then interpreted in a grounded fashion and a new or amended proposition developed. Combining these approaches is especially beneficial as arguably, it reduces, but does not do away with, interpretive bias.

Two methods could be employed when using propositions one to four to make sense of the data collected. Again according to Yin (1994 p.108), these are pattern matching and explanation building. Pattern matching involves predefining an expected pattern of connections between concepts and matching them to those found in the case or cases. This method could only be followed loosely as the patterns defined in propositions one to four were very general. Instead the more useful method of interpreting the data in terms of propositions one to four was to 'explanation build'. In this methodology, an initial proposition about human behaviour is made, this is then compared to the data found in a case. The proposition is then revised and compared to other details from the case, the proposition is then further refined and so on until the majority of the data can be accounted for by the final proposition or set of propositions. This iterative process is extremely reminiscent of reaching the point of saturation as described by Glaser & Strauss (1968). Using this method and combining it with pattern matching, allows propositions one to four to be applied to the data from cases one to three to identify *which* pattern or proposition, matches.

In order to address the research questions outlined in chapter two by following the overall analytic strategy described above, the *activity* of analysis broke down as follows: (1) to establish the extent of collectivity in the current thoughts espoused by informants both before during and after group meetings; (2) to establish if any emergent collectivity does account for individual's behaviour in the team environment; (3) if collectivity does not either emerge or account for individual's behaviour in the team environment, to establish what does.

Systematically considering propositions I to IV gave structure to this process and moved towards satisfactory explanations of each case. The way in which the analyses were carried out, differed in each case. To avoid repetition in the thesis, detailed descriptions of how the data in case were interpreted appear in the chapters that present the findings of those cases; i.e. Four, Five and Six.

However, just as an overall approach to qualitative analysis has just been presented, it is equally appropriate to offer a general discussion of the analysis of cognitive maps here which all the case study chapters that follow will refer back to.

In order to explore the proposition that gradually developed through this research and respond to the research questions argued in Chapter Two, the cognitive maps gathered during interview with each informant were analysed to establish the extent of

⁴ Of course in the first case only proposition I was employed in this way as propositions II, III and IV emerged from this case.

collectivity in the thoughts espoused by informants both before during and after group meetings. Specifically, this meant looking for similarity and change both within and between individuals in each of the groups. Consequently the analysis of the maps was in effect a series of comparisons of each map.

To understand what is being expressed in a cognitive map and so be able to compare maps, Eden, Ackerman & Tait (1993) identify three sources of *meaning*. The first of these resides in the words that are used by an informant to express their thoughts i.e. the constructs that emerge. The second is in the contrasting pole, e.g. happy *as opposed to* sad. This is an issue that is specifically derived from the application of Kelly's (1955) personal construct theory of human thinking. Since this thesis has not adopted a personal construct theory of cognition, this form of meaning was not immediately relevant. The third source of meaning discussed by Eden et al (1993) is drawn from the context of a construct within a map i.e. what other constructs is it linked to and associated with. This is reminiscent of Anderson's (1980; 1983) notion of spreading activation i.e. if a construct located in long term memory is triggered by a stimulus, to which other constructs does the activation then spread? The answer to this question tells us that in response to that particular stimulus, which thoughts combine to produce a response. Consequently, the greater the centrality of a particular construct in a map, the more constructs it has triggered or is triggered by and the more indicative it is likely to be of the way a person thinks about a particular stimulus. Eden et al state that this last source of meaning (the context of a construct) is the most important in the analysis of what has been expressed in an individual's cognitive map.

In the analysis of the maps collected in each case, the primary objective was to assess the similarity and change in the cognitive maps of each team over the period of the fieldwork. Comparisons of similarity can be made in one of three ways. First the informants themselves could have carried out the comparisons as suggested by Daniels et al (1995). However this process would have clearly breached the confidentiality agreed with each informant. Alternatively, independent raters could have been used instead of the actual informants, for example MBA students. This strategy was employed by Hughes (1993) and was found (using Kendal's coefficient of concordance) to produce extremely low levels of inter rater reliability ($W=0.26$, $p > 0.05$). Consequently, it was not acceptable as a comparison strategy. The only other option available was for the interviewer to make the comparisons alone as was in fact recommended by Eden et al (1993). This approach was eventually adopted in all three cases.

In summary then, the cognitive maps were analysed by searching for the meaning of the map, i.e. most important themes, most linked constructs and then the distilled maps were compared looking for similarity and change. The findings of these analyses were interpreted in terms of the four propositions presented in Chapter Two and developed throughout the research. As has been stated above, the way the maps were treated differed in each case. As already explained in this chapter, during the analysis of the first two cases, it became increasingly obvious that the VCST had produced maps that were not as rich in detail as interview transcripts. After analysing the first two cases, the

approach adopted in the third case was changed. This is fully written up in Chapter Six where the findings of the Construct Chemicals case are discussed.

In many ways, it may seem logically inconsistent to argue (as has been the case in this chapter), that some cognitive mapping methods and ways of representing thinking can be too abstracted and too distant from the subjects of enquiry to deliver meaningful results, and then still arrive at a position where a partial view of informants thinking is used to make sense of collective thinking and behaving in each case study. For instance, the means of analysis used here *simplifies* cognition by distilling meaning from dominant themes and constructs verbalised and uses only the changes in *these themes* over time to compare individuals and track their thoughts. In many ways, this approach appears to over simplify cognition to mean just language and moreover only the dominant aspects of language taped during interviews at particular points in time.

It is a fact, that this analysis did lose information in the way that all analyses do. The slice of informants' thoughts that finally contributed to answering the three research questions was *a* way of interpreting a much more complex and rich picture. However, a point that ought to be forcefully made is that the judgements I made all the way through the analyses that finally produced the chapters that follow, fitted with my complex understanding of each research sites. This was especially true in the final case where my knowledge as a researcher embedded in the real time context in which the data were generated, allowed me to be confident that the patterns I found were powerful representations collective thinking and behaving in this TMT over a four month period.

So, even though the cognitive lives of these TMT's existed in all their natural richness, to make sense of the research questions, one view of them had to be taken. The interview method chosen, the analysis conducted and the interpretation based on intimate knowledge of the contexts, all contributed to the belief that the accounts that follow are the best of the many that could have been written. Nevertheless, detailed examples and quotes are used to give the readers of this thesis enough information to arrive at their own decision.

3.5 Summary

This chapter was designed to demonstrate how the research questions introduced in Chapter Two were operationalised. An initial set of design requirements were presented and discussed. These included the need for the research to be: be based in the top team environment, in real time, exploratory, use multiple cases and focus on both cognition and behaviour as part of the strategy development process. The choice of research sites was explained in terms of these requirements. The next section of the chapter then moved on to explain the selection of particular research methods used. These included: cognitive mapping, in-depth interviewing and observation. Finally the last chapter discussed the overall issues concerned with data analysis. Only overall issues were discussed at this stage as the actual analytic process employed in each case varied. Consequently, to avoid repetition, a detailed description of these processes appears in the chapters that present the findings of each case.

CHAPTER FOUR

Case Study One: University Business School

4.1 Introduction

This chapter presents the pilot case study of the research, University Business School. The findings of the analysis conducted on the data collected are discussed here. There are several sections in this chapter that gradually build a cognitive explanation of a decision making meeting that took place in University Business School in December 1994.

The overall structure of the chapter shows the progressive development of the four propositions reviewed in Chapter Two. Proposition I, drawn from the literature, is *tested* here. Propositions IIa and IIb are *developed* to account for the data that proposition I could not. Finally, propositions III and IV are *introduced* because, even though the data fitted IIb, emergent patterns fell outside of the explanation it was able to offer.

This introductory section re-states and clearly operationalises proposition I. Section 4.2 gives background information on University Business School, the decision making team used in the research and the 'issue' they had discuss and decide upon during their December 1994 meeting. Section 4.3 recapitulates proposition one and the protocol that was used to test it. The findings of this analysis are then described in section 4.4, clearly showing how proposition one did not fit the data collected. Sections 4.5 to 4.8 then show the progressive development of propositions IIa, IIb, III and IV respectively. The final section 4.9, summarises the findings of this case, discusses the need to explore these propositions in another context and describes the selection criteria for a second case study: Colour Scheme (see Chapter Five).

Restatement and Operationalisation of Proposition One - It is important to recall that this, the pilot case of the research, was designed to test only the first proposition. Further propositions became apparent as the exploration of the case progressed, but it began with proposition I alone. This proposition was drawn from an initial review of the MOC and TMT consensus literatures where it appeared consistently as an implicit assumption. It stated that a group of individuals who may have initially held different views, but then arrived at agreement during a decision making meeting, may be expected to hold the same views of that decision when interviewed after the meeting: consensus leads to cognitive homogeneity. This proposition is shown in the box below.

Proposition I

Individuals in a team may hold different views about an important strategic issue before a team meeting. However, once agreement is reached in that meeting, team members can be expected to hold the same view of that agreement when interviewed after the meeting.

Although described in Chapter Two as a naïve assumption, this view was supported from other sources, e.g. the work of 'Discursive Psychology' theorists (Edwards & Middleton, 1986). Their empirical work suggested that when individuals with some different and some identical pieces of information engage in group discussion, they focus on the information they share and it is from this shared information that they construct a group view: consensus.

The operationalisation of proposition one leads to the expectation that the team selected from University Business School may have begun with heterogeneous views of the decision they had to make. However, if they came to consensual agreement in their meeting, they may then be expected to share a homogenous view of that decision when interviewed after their meeting. To be explicit, the pattern expected in the data would be: heterogeneity before the meeting, agreement during the meeting and homogeneity after the meeting.

Note that this proposition relied on the potential of the team to converge. If the team did not converge; i.e. not arriving at genuine agreement or consensus, not reach any sort of decision at all and possibly have a decision enforced on them from outside of the team, the expectation would have been that the team would retain heterogeneous views after their meeting.

This chapter now moves on to section 4.2 that describes the research site, the team used in the research and the issue they had to discuss and decide upon in their December 1994 meeting.

4.2 Background Information on University Business School.

The Research Site.

University Business School offers a range of both undergraduate and postgraduate degree courses. The distinctive element of these courses is their distance learning format. All courses are run from an administrative centre where teaching and research faculty are based. University Business School is centrally managed by a Dean of Faculty but many decisions are made by a series of committees representing each academic area.

The Informants.

The decision making team used in this case study were responsible for the design and delivery of the strategic management component of University Business School's part time MBA. The team were selected for three reasons. First, the site was selected for ease and immediacy of access. A middle management decision making team at the Business School provided immediate and open access to one of their forthcoming meetings as opposed to waiting for more senior access. Second, a member of the decision making team was also a supervisor of the thesis and was able to act as a participant observer. In a participant observer role this person was able to comment on the intrusiveness of data collection as well as offering insights into the explanations that emerged from the key findings of the analysis. Third and finally, based on the participant observer's view, the

team were believed to be a functional team who worked well together. Consequently they were expected to arrive at a consensual decision.

The team comprised of a academics responsible for the design and delivery of a core component of University Business School's part time MBA degree course and one administrative manager. They team were all effectively middle managers and were predominantly concerned with the operational issues in their area of the University.

There were five individuals who took an active part in the research. My supervisor, the sixth team member and participant observer was excluded from the analysis as it was felt he was primed in terms of the research question of the thesis, the specific predictions made in proposition one and consequently would not offer an bias free set of data. Instead, he was used to test the interview protocol before beginning data collection proper, to comment on the intrusiveness of the data collection protocol, the accuracy of the data analysis and the conclusions drawn. The profiles of each individual are shown in table 4.1 below.

Table 4.1: University Business School's Management Team: Positions, Lengths of Tenure.

Team Member	Position	Tenure in University Business School	Tenure in the Team
Malcolm Shorthouse	Course Team Chair	4 years	4 years
Sara Cullis	Course Team Mgr	2 years	2 years
Bill Slater	Senior Lecturer	4 years	4 years
Lesley Hancocks	Senior Lecturer	1 month	1 month
Peter Broadbent	Regional Director	10 years	10 years

The team met on a bi-monthly basis to work through an agenda of issues concerned with the design and delivery of their course. These issues tended to be cyclical as they kept up with the calendar of the course; pre-course preparation, exam preparation, exam marking, residential programme preparation, residential programme evaluation. Malcolm, the team chair talking at his first interview reflects this.

Malcolm "Its a familiar matter in that every year we have a meeting like this where we talk about our Summer School"

The team had a chairperson whose formal role was to sit as Course Team Chair. Outside of formal meetings there was little contact between team members. Many worked from home and, as academics, they were self managed and self sufficient. The only member of the team to communicate regularly with all other members was the Course Manager, Sara Cullis. Agendas for team meetings were usually produced by Malcolm and Sara with little formal consultation with other team members.

The personality profile of each team member was assessed using the Myers Briggs Type indicator. Of the team members, only three agreed to fill in the MBTI. Both Peter and Lesley said they had filled so many personality tests in they had no wish to do another. They suggested that length of the MBTI was a factor in their decision. The test used in

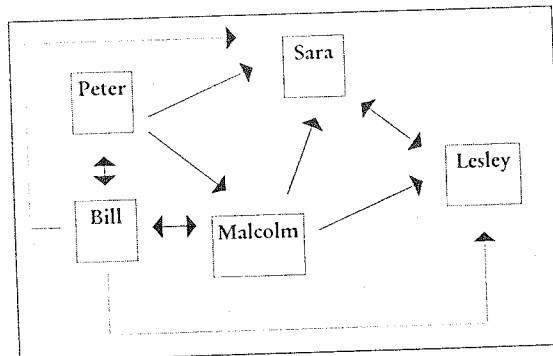
future cases was shorter (EPQ-R). The results of the completed MBTI tests are shown in table 4.2 below.

Table 4.2: Personality Profiles of University Business School

Team Member	MBTI Type	Brief Description
Malcolm	INFP	There is a strong preference for Malcolm to use feelings and not thinking when making decisions. As an introvert this will be saved for his inner world while he displays intuition and thinking to the outside world.
Sara	ESTJ	Preference for an organised, planned approach to the outside world. Sensing is used in Sara's inner world but her dominant external function is judgement using thought not emotion.
Bill	INTJ	The preference here to be judgmental when taking decisions. But as an introvert, Bill will tend to reserve this mode of thinking for his internal world. The external world will see him as intuitive and thoughtful.

In addition to the career information and personality tests gathered, the influence relationships within the team were also mapped by each team member. As described in Chapter Three, unstructured questions were directed to each informant about both informal and formal influence in their team. A network was constructed by combining each individuals' responses. This network is shown in figure 4.1 below. An arrow indicates influence with the direction of the arrow showing who influences who. An arrow was only put into the network if an individual recognised they were influenced by someone. A double headed arrow represents a mutually influential relationship.

Figure 4.1: The Team's Network of Influence.



A clear pattern emerged in response to questioning the informants about influence within their team. That is, although Malcolm had position power as course team chair, he did not hold the central position of influence. This was reserved for Peter and Bill, the longest serving team members. In fact, this pattern reflected the deeply embedded political pecking order that was a significant part of the culture in University Business School. As confirmed by several team members as well as my supervisor acting as participant observer, power in this organisation came hand in hand with length of

tenure: once you were part of the woodwork you were part of the power base. Lesley explains why Peter always seems to get his own way in team debates.

Lesley "he's been here since the year dot, he knows everybody so he can always quote chapter and verse on everything, so he wins"

Peter had been at the business school a lot longer than any of the other team members and as Lesley described above was able to exert influence over all the team members. When asked, Peter responded that the most dominant person in the group was him. He believed that he could be influenced by Bill but no one else. As the "new girl" (Lesley's own description) Lesley felt that Peter did not influence her in the same way as he did the other team members. Indeed in her first interview she said she wanted to fight against his influence.

Bill was also highly influential in the group but in a much more subtle way. He was respected by team members for generally offering valuable contributions to the group but in a quiet unassuming way. Malcolm and Lesley describe this:

Lesley "Bill sees himself as sitting back watching everything, he kind of draws in energy"

Malcolm "Bill has a knack of sitting quietly in the corner and coming up with something that people haven't thought of, shedding light on things"

Although in a position of hierarchical influence, the team members did not perceive Malcolm as a particularly influential or persuasive individual. Most chose Peter or Bill. However Malcolm did have a certain amount of power as course team chair that most team members (the exception being Peter) recognised.

Lesley "Malcolm ought to be in the driving seat since he's chairman but he doesn't seem to in any visible or obvious way, he's not terribly persuasive"

Finally Sara and Lesley appeared to have little or no influence within the group. Interestingly they both selected each other as an influential person. It seemed that they shared information in an informal way much more than they other team members and so were responsive to one another. Most of the team saw Sara as a non academic and therefore not influential, and Lesley as the new and as yet unknown quantity.

The Strategic Issue.

A general initiative introduced by the Dean of University Business School had placed demands on the team to reduce their costs. Malcolm had decided to realise the required savings in their budget by cutting the budget of their highest cost activity: the residential or summer school. A cut in its length from four to five days would find the required saving. In addition there had been consistent feedback from students and residential tutors alike, stating that the residential component was too long. This lent additional impetus to the argument to cut the residential component by at least one day.

The decision to cut the timetable of the residential had been taken outside of the formal arena by Malcolm with small amounts of informal consultation and negotiation amongst all members of the team. Malcolm describes this:

Malcolm "What's happened so far is that I've formally asked everybody individually what their opinions are but there's probably been some position in that as well. I've tried to persuade people to what my view is, negotiation really"

The espoused purpose of their meeting was to make this decision; whether or not to cut the residential school's timetable and how many days (if any) to cut. However, all the team members acknowledged that it was simply a ratification process. They stated that the actual purpose of the meeting was to design a proposed structure for the new timetable, the suggestion of a one day cut having been informally discussed as acceptable. Lesley explains this:

Lesley "I think that there is a decision outcome that's already been more or less agreed that seems to be accepted, that the meeting will move towards one day less. That's what I've heard. It seems to be a decision that's already been taken and that the purpose of tomorrow is just to rubber stamp it"

Malcolm had developed three scenarios for the new summer school timetable all of which would reduce the school from six and a half to five days. He had not formally discussed these with the team and intended to present them at the meeting as voting options. Malcolm's view was that his preferred option would be voted for by the group. The rest of the group had considered the timetable and its key components¹ but had not developed fully considered proposals.

The team meeting took three hours and the period spent on the residential school was approximately one hour. The end result did not fit Malcolm's view. In fact, only one of his options was debated and then for only ten minutes. The discussion was actually much broader than Malcolm had anticipated. The team members discussed the overall objectives of the residential course, specific academic objectives and wider, more vocational objectives as well as the merits of particular cases. Finally after an impasse was reached Bill suggested a solution to which all the team members enthusiastically agreed. Lesley recalls events.

Lesley "Malcolm started to be prodded a bit to move away from the previous structure and was actually quite comfortable to do that, and then he prodded the blocker, namely Bill, by saying well if you don't like it come up with something else which everybody was really happy to support because nobody liked the original model anyway"

¹ The residential course was made up of case based teaching. The timetable contained several cases undertaken in small groups and lead by individual tutors. Little time was spent in large plenary group or lecture formats. Consequently all timetabling decisions revolved around the selection of cases based on individual preference and case completion times. Currently the dominant case was a three part case called Caesar.

Bill then presented what he later recalled to be his emergent solution. This was to make the required cuts to the timetable of the Summer School, using the three day Caesar case study but re-writing it to use up less time. This meant retaining some other cases and guest speaker time slots.

Bill "I'd never thought of it before. It must have been sparked by something that was said at the meeting. I don't quite know what it was. It literally just dawned on me"

After very little debate and the approval of Peter Broadbent, the team enthusiastically agreed that this timetable should be taken forward for immediate implementation.

The residential schools actually took place six to nine months later and were held at several venues around the UK and Europe. As team members directed their own school, they had sole responsibility for the implementation of the agreed timetable. No formal data was gathered to test the faithfulness of each team member to the consensus decision. However, Bill was later asked informally what he done in his role as residential course director. He stated quite clearly that he had "not stuck to the timetable" as agreed even though it was his suggestion, but had "done his own thing". Although he wasn't actually aware of what others in the team had done, he suggested that he expected they would have done the same. The participant observer and supervisor of the thesis also confirmed that several of the residential courses run had not kept to the timetable designed by the team.

4.3 Recapitulation of Proposition One & Method of Testing

As clearly stated in the introduction to this chapter, this pilot case was designed to test proposition I alone. This proposition argued in Chapter Two, stated that a group of individuals who may have initially held different views, but then arrived at agreement during a decision making meeting, may be expected to hold the same views of that decision when interviewed after the meeting; consensus leads to cognitive homogeneity. The operationalisation of this proposition led to the expectation that the University Business School team may have held heterogeneous views of what should have been cut from their Summer School timetable, but if they came to consensual agreement in their meeting, their views would be homogeneous when interviewed after that meeting. To be explicit, the pattern of heterogeneity before the meeting, agreement during the meeting and homogeneity after the meeting was expected. The way in which this proposition was tested; i.e. the data analysis protocol adopted, is described below.

First, cognitive data were collected both before and after the team's meeting. The team members were asked to offer their views of the decision to cut the Summer School timetable and to create a cognitive map of those views. The maps created were visual card sort technique (VCST) maps. In addition, as all interviews were taped recorded, transcripts were also available for analysis. The maps were then reduced, with each team member's core constructs being distilled from both their map and interview transcript (see appendix 4).

Following this reduction, team member's cognition could be compared and the extent of heterogeneity and homogeneity assessed. The reduction of all ten maps was carried out by myself alone and followed a standard protocol. This involved the assessment of each map in terms of the most linked construct, i.e. that most central to their view of the decision to cut the Summer School timetable. If no immediate construct appeared more 'linked' than any other in the map alone, the interview transcript was used to identify several other indicators that may help assess centrality. These included (1) primacy of recall i.e. the first thing the informant chose to discuss (2) frequency i.e. the number of times a topic was returned to and length of time spent discussing it (3) the engagement of the informant when discussing topics i.e. how passionate or emotionally attached they were to an idea or opinion. A combination of these factors was generally used to clearly identify the most important aspect of each team member's views about the decision to cut the summer school. Several examples of this reduction process are given in appendix 4.1 with all ten VCST maps appearing in appendix 4.2. Note that in many cases, a series of central constructs all appeared to be addressing the same thing. When this occurred, an overall theme was used to capture the relevant constructs.

The heterogeneity or homogeneity in the core constructs taken from each team member's data was assessed independently by myself and another rater, a junior member of research faculty at Cranfield. The core constructs, with example quotations from the interview transcripts were laid out on cards with no identifiers. The same and similar core construct cards were grouped together. This assessment of similarity was carried out separately for the data collected before the meeting and the data collected after the meeting. Each rater's groupings were then shared. For both time periods (before and after the meeting) the groupings provided by each rater were the same. This grouping task was in fact rather simple and presented no real issues in terms of rater divergence. In future cases, the decision was made to carry out comparisons between maps alone. As the cases became more complex, it was judged that an independent rater unfamiliar with the context and the issues being discussed would not be able to make meaningful assessments of similarity.

In the final stage of analysis in this case, the tape recording of the team's December meeting was used to break out key stages of discussion and more specifically see if the team did or did not arrive at a consensual decision apparently agreed to by all.

4.4 Test of Proposition I.

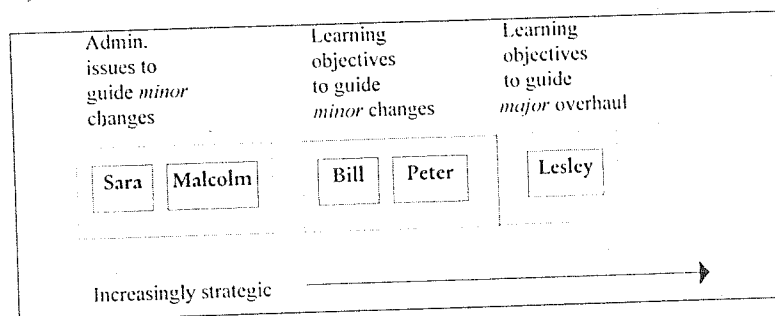
Proposition I, the only proposition *tested* in this case predicted that the University Business School team may have held heterogeneous views of what cases and activities should have been cut from their Summer School timetable, but if they came to consensual agreement in their meeting, their views would be homogeneous when interviewed after that meeting.

In fact this was not found to be the case. The analysis of the cognitive maps, interviews and meeting tapes revealed that some of the team held similar views about the decision

before their meeting, consensual agreement was reached in that meeting, but surprisingly, afterwards there was no evidence of teamwide homogeneity. Instead, some team members again appeared to share similar 'overlapping' views but no one view emerged to be shared uniformly across the team. A description of the 'overlap' at each time period and the agreement reached in the meeting now follows.

Before the Meeting - the team members' core constructs (central concerns, ideas and options) were neither heterogeneous or homogenous. Instead they showed some similarities; some areas of overlap. This overlap occurred in dyadic groupings where general themes were shared. These dyadic groupings are shown in figure 4.2 below.

Figure 4.2: Groupings of Overlapping Similarity Before the Team's Meeting.



This figure represents the similarity between Bill, Peter and Lesley. They all believed that the central consideration for any discussion about changes to the Summer School should be the specific *learning objectives* of the course. They all argued that these should be clarified and form the foundation of any changes introduced. However, there was also diversity in their views. For Lesley, the learning objectives of the course were central to any decision. She would have liked to see these revisited, perhaps reworked and a total overhaul of the Summer School carried out. For both Bill and Peter, the learning objectives were important and should form the basis of a series of minor changes (in case study selection) to the course structure already in place. So although the same or similar construct emerged in the interviews with these three informants, the way in which it was operationalised (for Lesley at least) was different.

Lesley "I'm starting from why are the students supposed to go on a summer school. I mean should we be bothering at all? They're supposed to experience being with one another, to explore things in a different way. There are ways that can be achieved but what are the effective learning objectives of the school is what we have to answer. To talk about specific cases is trivial"

Bill "We need to think about what we can do with a residential that's different to phone calls or a tutorial. To my mind the learning objectives of the course come first. The problem then is following it to change the timetable.

Peter "What our main concern is, is our overall learning objectives because that

is what the residential is all about. So, that would be the first thing, to have our objectives clearly put before us then think about changing things"

Interestingly, Peter saw very little distinction between his view and the view that the team would adopt: he fully expected to get his own way. The deference of other team members was the response that he expected, so much so that the prospect of oppositional views did not occur to him. This was entirely consistent with his central position in the team's influence network.

Peter "I shall start right away and the reason I'll do a load (*of debating*) is because I've done this thing more than anyone else!"

Malcolm and Sara also demonstrated some similarity in the basic approaches that they took to the task of designing cost savings into the Summer School. They both had a more administrative role than any of the other team members and consequently the management implications of any change to the Summer School had occurred to them when it had not occurred to the others. However, there were differences in the *level* of administrative detail that concerned each of them. For Malcolm the greater concern was the design of the course where as for Sara the concern was with delivery of the course. So, as with the overlap evident between the other team members, Malcolm and Sara were focused on a similar construct but in different ways.

Malcolm "The decision about which timetable to accept will be about a lot of things. Workload on the tutors is one, the difficulties of ordering the timetable is another, its just sort of the actual difficulties of design if you like."

Sara "What I'm really concerned about is just making sure that the presentation of the course is given as efficiently as possible. My colleagues will probably be coming at it from an academic aspect because they're the knowledgeable ones in the actual course content and they know which part of the course needs to be used"

Malcolm was the course team chairman, and as shown above he overlapped with his administration manager Sara. The most influential team members Bill and Peter, overlapped with each other and shared some ideas with Lesley. It is worth noting that none of these three were aware of each other's opinions as they had not discussed the issue before the team meeting.

The Meeting - as already discussed in section 4.2 was a success. The team arrived at a decision to cut the Summer School by one day and to adopt a changed timetable that Bill suggested. It appeared to myself as a naïve observer and to my supervisor, experienced within the group, that the team all enthusiastically agreed to Bill's new timetable and may have replaced their own views as they clustered around this consensual solution. Once the learning objectives of the course were reviewed in discussion; the primary function of which seemed to be to restate them rather than change them (therefore reflective of Bill & Peter's view and not Lesley's) and some administrative issues such as tutor contracts were discussed, the final timetable was proposed by Bill. His idea resolved the case based debates that had been exhaustively

discussed. This timetable was agreed to by all but was especially reflective of the views of Bill and Peter.

There was no certain way of ascertaining what the team members were actually thinking during the meeting other than to assume that, however partially, people meant what they said i.e. "*I agree with you*" meant just that. In addition, what was not verbalised was also revealing, i.e. the team were enthusiastically nodding and verbalising agreement to Bill's particular view. There were no lone team members contributing no verbal or behavioural signs of agreement. Consequently it was assumed that the team agreed with Bill's proposal.

It appeared that that the views of the other team members had been *mediated* somehow and now fell in line with Bill and Peter's way of thinking about the restructuring of the Summer School: that the learning objectives of the school (to encourage students to work together) were paramount, the timetabling should be designed around this and that the case to best deliver this was a lengthy case called Caesar that needed rewriting. This view was in direct contradiction to Lesley's view and challenged some of the views Malcolm and Sara had about tutor contracts, copyright, time pressures and problematic administration. The interesting issue in the context of a test of proposition one, was to explore the extent to which these three team members had really replaced their views with those of Bill and Peter: had consensus led to homogeneity.

Table 4.3 below summarises a reduction of the section of the team meeting that focused on changing the summer school timetable. This categorisation was produced by myself and supervisor (participant observer) listening to the section of the tape recorded meeting where the Summer School was discussed and noting important phases of discussion. The most vocal and dominant members of the team in each of these phases were identified (see italics in table 4.3 below).

Table 4.3: Phases of Discussion in University Business School's Team Meeting.

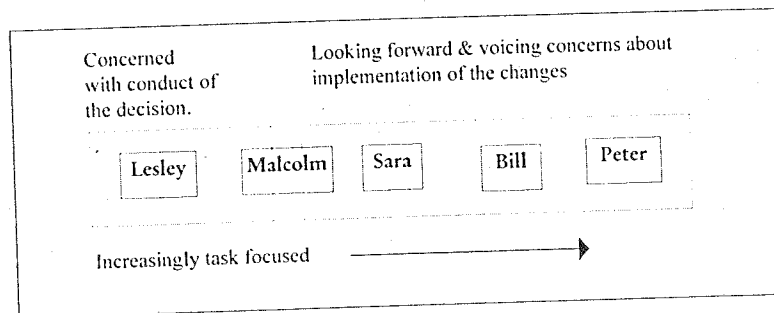
Phases	Theme, Dominant Discussants & length of Discussion
1	Challenges between <i>Malcolm</i> and <i>Peter</i> about Malcolm's alternative three timetables 10 minutes
2	Debate exclusively between <i>Bill</i> <i>Malcolm</i> & <i>Peter</i> about current time tabling constraints 15 minutes
3	<i>Sara's</i> contribution about administrative constraints is overridden by <i>Malcolm</i> 3 minutes
4	Learning objectives pushed by <i>Peter</i> & <i>Bill</i> and picked up by <i>Malcolm</i> 10 minutes
5	<i>Malcolm</i> challenges <i>Bill</i> to come up with a suggestion ratified by the agreement of <i>Peter</i> 20 minutes

This table clearly shows just how much of the discussion was dominated by Peter, Bill and Malcolm. The first two of these were clearly using their positions of influence. They had direct influence over almost all of the informants. Between them, (although they were not colluding in a pre determined fashion having not discussed the Summer School

cuts before the meeting) they managed to strongly reflect their own views by controlling the agenda and so the final decision.

After the Meeting - the team members' core constructs (central concerns ideas and options) were not homogenous. Instead they showed some similarities, some areas of overlap. There was also evidence of direct disagreement with the decision all members had enthusiastically arrived at in their meeting less than a week previously. As with the overlap before the meeting, after the meetings groupings occurred where general themes were shared. These groupings are shown in figure 4.3 below.

Figure 4.3: Groupings of Overlapping Similarity After the Meeting.



During the team's meeting, it had appeared that team members' views about cutting the summer school timetable had changed or been diluted. But a comparison of the team members' cognition after the meeting established the temporary nature of these changes. That is, the consensus that seemed to emerge during the meeting quickly disappeared. In short, it was clear that the extent of the similarity between team members after the meeting was not as great as the universal agreement with Bill's solution would have predicted. For instance in Lesley's case, there was a clear theme that dominated the way she thought about the decision to cut the time table of the Summer School. She initially agreed that the revised program for the residential was "OK", but then spent the majority of her interview time focused on her feeling that the whole way in which the group approached the problem of changing the Summer School was very wrong.

Lesley "They don't even see what they're saying and how absurd it is the whole focus on the Caesar case is ludicrous, they're so bound up in it they can't even see it. Its a real case of the tail wagging the dog."

She viewed the process of deciding how to change the Summer School as "farcical" but had offered her support in the meeting and did not verbalise these views for political reasons.

Lesley "If you come in as the new person saying 'this is wrong, that's wrong, you ought to turn the whole thing upside down', the danger is you just put people's noses out of joint and they're all going to be against you. It's difficult for me to play that role. I wanted to say you're all in danger of making a load of crappy decisions here but I couldn't."

In addition to Lesley's clear dissatisfaction with the way the meeting was conducted, Malcolm expressed his view that the meeting was not as productive as it could have been and that in particular, he resented losing control to Bill. He was especially frustrated that the changes to the main teaching case 'Caesar' were to be made by Bill who had, in volunteering to do this, quietly assumed total control over the content of the Summer School. He also was unhappy that so much time had been spent talking about the learning objectives of the course instead of discussing his three alternative timetables.

Malcolm "I suppose you could tell that I was slightly annoyed on the day, I was a wee bit annoyed because he (Bill) knows we've talked about this before. I guess you know that

Bill has taken some responsibility for sorting this.... I mean I'm *quite* (uncertain) happy, but er..... but at the back of my mind I suppose I'm, well there's a part of me that thinks if you want something done properly you should do it yourself. I worry about Bill, will he do it quickly enough will he do it on time and properly. It's to do with my formal responsibility and control, erm, err... I feel the most responsible for this, the person, well persons Sara and myself, who have responsibility for the hand over of the course, I feel its erm, my responsibility, I'll be the person responsible so its frustrating."

Malcolm also discussed the implementation of changed timetable by focusing as he had in the past on mainly administrative issues. As at time one, he had this is common with Sara. In a similar way to Lesley, both Sara and Malcolm failed to voice their view about the decision during the meeting although they enthusiastically agreed with the decision engineered by Bill and Peter. When interviewed afterwards Sara seemed unconcerned with this as she had not expected to have any impact, but to just concentrate on administrating the implementation the decision the team had arrived at. This maintained thematic stability for Sara overtime but also distanced her from Lesley and Malcolm as she was not concerned with looking back and questioning the decision but just with looking forward to the next phase.

Sara "I think the decision to change the case is a good one as long as it gets done which is my fear my one big administrative problem. The computing on the programme has to be sorted out and I still have copyright issues on two cases, they're all the sort of things that I'm thinking about."

Peter and Bill were both entirely satisfied with the team's decision to adopt the timetable suggested by Bill. Having taken its acceptance as read, they were both concerned with issues that may arise in the implementation of the new timetable. Again, as at time one there was great deal of overlap in the issues that they raised. They both talked about tutor training to teach the revised 'Caesar' case, ordering of the elements of the case and the role of the course directors. The interview discussions with both these individuals revolved around practical management issues and rarely strayed into discussing relational issues (interaction within the group). When Peter did it was simply to laugh at the extent to which he could control the team.

Peter "It was a big surprise that I didn't actually make the decision. Bill did I thought I'd make it. I don't think many of the others said anything at all (laughing) they take it well don't they ! I do it to everybody, people just have to put up with it."

So in summary, proposition I predicted that the University Business School team may have held heterogeneous views of what cases and activities should have been cut from their Summer School timetable, but if they came to consensual agreement in their meeting, their views would be homogeneous when interviewed after that meeting. To be explicit the pattern of heterogeneity before the meeting, agreement during the meeting and homogeneity after the meeting was expected.

In fact the analysis of the cognitive data and the data collected during the team's meeting, demonstrated that the views team members held about changes to the Summer School timetable were neither heterogeneous nor homogeneous before the meeting. Instead, dyadic groupings of team members overlapped. The team then reached consensus by clustering around the proposal put forward by the most influential team members. After the meeting, team members were again neither heterogeneous nor homogeneous and, as was the case before the meeting, groupings of team members who overlapped in terms of core constructs emerged. In short, team members had their own view of the Summer School, some aspects of which they shared with others. Independently of these views (with the exception of the influential team members; Bill and Peter), the team came to agree around the proposal of the most influential members, but after the meeting, reverted to their own particular views once more. Therefore, proposition I was not able to account for the data collected in University Business School.

4.5 Proposition IIa.

The notion that cognitive homogeneity emerges from teamwide consensus was clearly unable to account for the decision making process that the University Business School team went through in December 1994. In fact, the idea that two individuals can share the same knowledge or interpretation of an event (or decision) was argued to be somewhat naïve in Chapter Two. Resnick (1993) stated that we construct our knowledge independently of one another and therefore can never know exactly the same thing as another person. However, he also went on to pose the puzzle that this research grappled with: if we are constructing knowledge independently of one another, and know different things, how do we successfully interact with one another ? The findings of this pilot case may have thrown some light on this puzzle. That is, members of a team or closely associating group need not know the *same* thing to interact with one another but simply know some similar things. This evokes a notion of overlapping (Klimoski & Mohammed, 1994) as opposed to homogenous cognition and, the natural extension of proposition one would be to develop a second proposition that replaced homogeneity with overlap.

Proposition II was developed to replace homogeneity with overlap in an attempt to account for the events in this pilot case. It argued that before a team meeting, members could share some ideas and opinions of changes (e.g. to the Summer School timetable). This overlap would, as predicted by Middleton & Edwards (1986) form the basis of the team's discussion and ultimate agreement. After the meeting, the team would demonstrate tighter overlap as the views they had in common had been openly affirmed and positively re-enforced. In brief, overlap leads to consensus that in turn leads to tighter overlap. Proposition II is shown in the box below.

Base Proposition II

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Individual team members will share an overlapping view of the agreement reached: overlap will have spread teamwide.

Again, as with the first proposition, II in its most basic form was too simplistic to account for the data. The team had overlapped before the meeting. However, this overlap had occurred in dyads and not teamwide.² Consequently the agreement the team reached in their meeting could not be representative of teamwide overlap. Instead it represented the overlap of the most influential team members. Finally, although agreeing to the proposal of Bill and Peter in the meeting, team members views represented after the meeting reflected the same overlaps and general concerns that had existed before the meeting had taken place. In fact some of the views expressed after the meeting showed outright disagreement with the conduct of the meeting.

So in short, the pattern in the data had been: dyadic overlap, enthusiastic agreement based on the overlap of the most influential team members, followed by a return to dyadic overlap that was no tighter than it had been before the meeting. A more sophisticated proposition was developed to account for this data.

4.6 Proposition IIb

Chapter Two discusses an argument present in the MOC literature that explains the patterns that had emerged in this pilot study. In particular two pieces of work focused on the notion of overlap as opposed to homogeneity but importantly had not presupposed the relationship between cognitive overlap and agreement to be as simple as proposition II had initially argued. This proposition is shown in the box below.

² It is important to note that the possibility that the team members would have all overlapped on much broader issues e.g. 'we wish the Summer School to be a success', or 'our aim is to produce a high quality MBA teaching', or even 'there has to be a Summer School' is not discounted. However the research question was targeted at micro, issue level cognition and this higher level of data was not collected as the focus of this work was micro level, issue based cognition.

Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

First, Walsh, Henderson & Deighton (1988) argued that agreement in decision making teams (actual consensus) could be the product of overlap between team members (potential consensus), but more specifically that the most influential team members may form the greatest part of the agreement reached (actual consensus). This in fact fitted the events that had unfolded in University Business School. However Walsh et al did not comment if the less influential team members then adapted their own views in line with the agreement reached. The lack of comment could lead to the interpretation that they believed this to be the case. Consequently following their argument, overlap between team members may be expected to be teamwide and tighter after agreement had been reached. As has been made clear already this was not the case in University Business School.

The work of Langfield-Smith some four years later (1992) was also concerned with shared cognition, operationalised as overlap. She suggested that the same process of convergence would take place during group discussion as members focus on the ideas they share. However, although her empirical work did not extend this far, she believed that this convergence would in fact be temporary: dissipating when team members are left alone to make sense of the agreement reached. This scenario did fit the data collected in University Business School.

A proposition (IIb) that encompassed the ideas of both Walsh et al and Langfield-Smith was constructed to fit the data collected in this pilot case. It stated that team members may overlap in dyads or sub groups, the most powerful group's overlapping ideas will then dominate any agreement reached by the team, and that subsequently the teamwide overlap evident in the consensus reached may promote tighter overlap after the meeting (Walsh) or alternatively dissipate (Langfield-Smith). Clearly this proposition, developed in the first case, needed to be tested in another. This is argued in section 4.9. Before then two further developing propositions (III & IV) are discussed.

4.7 Proposition III

Although proposition IIb clearly fitted the data collected in University Business School, there were other trends that emerged in this data that were not accounted for by the 'overlapping' view of collective cognition as operationalised above. Most significant was data that questioned the validity of the consensus that appeared to have been achieved during the team's discussion.

Throughout the interviews conducted with team members before their December 1994 meeting, role predictions were made. That is, the role that individuals were expected to take in the meeting were offered when influence relationships within the team were discussed. All instances of these predictions are shown in the quotations below.

Lesley "Bill keeps really quiet and then produces something. Malcolm ought to be in the driving seat since he's chairman but he doesn't seem to in any visible or obvious way. he's not terribly persuasive. Sara won't try to take over, she'll be quiet. Peter does try very hard to get his way. The question is who will be the most persuasive. Peter will certainly try to be. I mean I'm excluding myself from this. I don't think other people will listen to me. Other people usually do but I'm the new girl and I have to be careful in this meeting"

Malcolm "I don't think any of us want to spend much time on this. I expect the discussion to be largely built on what Bill and Peter and myself have to say. We're well through the process you know"

Then a few lines later

"I'd say there'll be a difference in the way that people play their hands, of how forceful, how powerful they are. I'd certainly say that Bill tends to be down in that respect and Peter tends to be quite forceful. Lesley's been through the Summer School sure, but I mean once is different from four years, she clearly won't have that much of a contribution. Sara will care more about technical administrative constraints."

Peter "I shall start right away and the reason I'll do a load (*of debating*) is because I've done this thing more than anyone else!"

Then a few lines later

"(laughing) I see myself as having the greatest impact on the resolution of this and I'm probably the most dominant person in the group. That's not necessarily positive. I think a lot of people will tell you that. I'll listen to Bill's opinions if he bothers to give them, he's not very willing to talk a lot is Bill. Lesley is an unknown quantity and that'll be interesting."

Sara "Peter is usually the most dominant person in the team. I can see myself being influenced by him in both a positive and negative way. On balance I would say I try not to be influenced by him. In general Bill's opinion's gain my respect but Peter is the most persuasive."

When compared to the actual conduct of team members in their meeting, (represented in a reduced form in table 4.3) these predictions of roles appeared to be remarkably accurate. It seemed possible that the way that the team interacted during their meeting may have been 'usual', 'routine' and 'expected'. Consequently the agreement that was reached may have been less the product of a convergence of views and more the product of a routinised pattern of events that were operating within the team over an above micro, issue based cognition.

At this stage of the research this notion was simply a suggestion. However, literature that operationalised collective cognition, not as team members holding the same or similar views at the micro issue level, but knowing the location of knowledge within the group: *meta cognition* and sharing knowledge of how the team should interact with one another: *shared social schema* (see Chapter Two for full and extensive citations), was found to support this idea. Specifically, the concept of a shared social schema, (containing knowledge of how the team should interact), guiding collective behaviour (agreement) seemed to fit here.

Consequently, proposition III began to be developed at this pilot stage and is shown in the box below.

Base Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their shared social schema of how to interact during team meetings. This distributed knowledge allowing the team to work as a cohesive unit that is able to reach agreement.

It proposed that irrespective of homogeneity, heterogeneity or overlap in individual micro level issue based cognitions, team members' behaviour, contributions to discussion and eventual agreement could be the product of their shared social schema or their meta cognition; in effect the distributed network of collective cognition that existed between them. Again, as with proposition IIb, this clearly required testing in another context.

4.8 Proposition IV

In addition to the accuracy of role prediction that lead to the belief that the agreement reached in the team's meeting was not the product of genuine micro level convergence of views, there was direct evidence of disagreement with the conduct of the meeting.

As already described in section 4.4 that tested proposition I, both Lesley and Malcolm both had serious concerns with the conduct of the meeting. Lesley in particular was clear about her overall disapproval of the team's devotion to the Caesar case study and refusal to fully explore the learning objectives of the course. However, Lesley did not contribute her disagreement with the course of the debate during the team meeting and instead enthusiastically agreed with the outcome as the other team members had done.

This direct contradiction between thinking and behaving on the part of this one team member at least, was evidence that not only could the team have been behaving in a routine manner that over rode individual micro level issue based cognition to produce agreement, but other behavioural motivators may have been dominating behaviour. That is, although Lesley did not agree with the conduct of the meeting, and as a new team member was not likely to slip into routinised behaviour within the team, she was aware of her vulnerable political position and the need to store up capital for future use.

Therefore she would be unlikely to voice her true opinions and lose support within the team.

Lesley "If you come in as the new person saying 'this is wrong, that's wrong, you ought to turn the whole thing upside down', the danger is you just put people's noses out of joint and they're all going to be against you. It's difficult for me to play that role. I wanted to say you're all in danger of making a load of crappy decisions here but I couldn't."

So in her case, issue based cognition had been overridden by broader concerns for her position within the group. Again this finding promoted a further review of the MOC and general TMT literatures. From this review proposition IV began to develop. This proposition fully argued in Chapter Two and shown in the box below, suggests that micro level, issue based cognition can not always account for behaviour in the team environment. As has been the case with propositions IIb and III, this the third proposition to be developed in the pilot case (fourth proposition overall) required testing in another context.

Base Proposition IV

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns that are motivating team members behaviour and contributions to discussions in team meetings; e.g. political motivation.

4.9 Summary and Selection Criteria for a Further Case Study

This pilot case was initially designed to test proposition I alone. It was argued in section 4.4 that the data collected in University Business School did not fit the predictions made by this proposition. Instead proposition IIa was developed. Here homogeneity was replaced with the notion of overlap. But, the prediction of agreement based on overlap followed by tighter teamwide overlap, was still unable to account for the data as teamwide overlap never emerged. Propositions I and IIa were then rejected.

Proposition IIb was generated from the MOC literature. In particular two pieces of research were used. First Walsh et al (1988) who demonstrated that agreement at the group level can be the product of the overlapping ideas of the most influential grouping of individuals. Second the work of Langfield-Smith (1992) who suggested that any convergence of views that occurred when the team were working together may dissipate when the individual members are left alone to make sense of the agreement achieved. A combination of these two pieces of research fitted the events that unfolded in the University Business School team.

Although IIb fitted the data collected, there were also other significant trends that emerged from the analysis. First, accurate role predictions were made by four of the five team members. This suggested that the interaction observed during the team meeting may have been expected, predicted and routine. If this was indeed the case, then the agreement reached during the meeting may have been the product of acquiescence to routine as opposed to genuine convergence. Consequently, tighter overlap in team

members' views would not be expected to occur after the meeting. This was indeed the case and led to the introduction of proposition III: that irrespective of homogeneity, heterogeneity or overlap in individual micro level issue based cognitions, team members' behaviour, contributions to discussion and eventual agreement could be the product of their shared social schema or their meta cognition.

Finally, there was direct evidence that the behaviour Lesley chose to contribute to the team meeting was contradictory to her real views. Over and above any routine that may be operating, Lesley had made a conscious decision to behave in a political way i.e. sacrifice her views on the Summer School issue to gain acceptance within the group. This finding brought a fourth proposition into focus. That is, micro level, issue based cognition may not always account for behaviour in the group environment.

The three propositions that found some fit with the data collected in this case (IIb, III 7 IV) required further exploration and development in another context. As this case had been conducted with a middle not top management team, it was important to try to access a TMT. Moreover, in light of the centrality of teamwide agreement to the generation of these three propositions, it was important to access a TMT that were likely to demonstrate some degree of overlap and arrive at agreement when discussing an significant strategic issue. Finally, the research design of: interviews before a meeting, observation of a meeting and interviews after a meeting, required a fairly accurate prediction that the team accessed were due to be under pressure to arrive at a decision at the meeting to be attended. This proved something of a tall order with a year long wait to gain access.

Colour Scheme, a company that had a TMT that had been together without change for some considerable time, and were in the middle of a strategic planning process that was about to move on to the next stage of development if the board agreed, was targeted and selected as the second case.

CHAPTER FIVE

Case Study Two: Colour Scheme

5.1 Introduction

This chapter presents the second case study of the research; Colour Scheme. The findings of the analysis of the data collected in Colour Scheme are discussed here. As with the previous chapter, there are several sections that gradually build a cognitive explanation of a board meeting that took place in Colour Scheme in March 1996.

The overall structure of the chapter shows the continuing development of the three propositions that fitted the data collected in University Business School; IIb, III and IV. The testing of these three propositions in a second context helped to bring them into sharper focus and move towards a more concrete response to the research questions of the thesis: (1) What is the nature of collective cognition? (2) What is its relationship to convergent behaviour, and what context dependent factors mediate this relationship in TMT's engaged in the process of strategy development?

This introductory section re-states and clearly operationalises propositions IIb, III and IV. The rationale for selecting Colour Scheme as a research site is explained. Section 5.2 gives background information on Colour Scheme, the board of directors who were interviewed and the strategic issue they had to discuss and decide upon in their March 1996 board meeting. Section 5.3 then operationalises propositions IIb, III and IV and recalls the methodology used to test them (fully explained in Chapter Three). Section 5.4 examines the data collected in Colour Scheme in terms of proposition IIb. As was the case with the previous chapter, this section is also used as a sensible point to offer an overall description of events at Colour Scheme. Sections 5.5 through to 5.6 then examine propositions III & IV and the data that they are able to account for. The final section 5.7 summarises the findings of this case and describes the selection criteria for the third and final case; Construct Chemicals (see Chapter Six).

Re-statement of Propositions IIb, III & IV.

This second case of the research carries forward and tests only the propositions that *emerged* from the analysis of the data collected at University Business School¹. Propositions III and IV in particular become much more developed and clearly defined during this case, but the 'base' propositions that emerged at the end of the analysis of the pilot case were the starting point from which the data collected in Colour Scheme was explored.

Proposition IIb fitted the data in the pilot case. The base proposition that was constructed at the end of this case is shown in the box below.

¹ Propositions I and IIa had been rejected in the pilot case as too simplistic and were not revisited here.

Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

Proposition III was introduced to make sense of some emergent trends in the data collected in the pilot case that IIb (although it fitted the data as far as it went) did not cover. The base proposition is shown in the box below.

Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their shared social schema of how to interact during team meetings. This distributed knowledge allowing the team to work as a cohesive unit that is able to reach agreement.

Proposition IV was generated to account for the behaviour of one particular team member (Lesley) whose chosen contributions to the team meeting were contradictory to the views she expressed during interview. Over and above any routine that may be operating, Lesley appeared to have made a conscious decision to behave in a political way i.e. sacrifice her views on the Summer School issue to gain acceptance within the group. This finding brought the fourth proposition into focus, it is shown in its basic form below.

Proposition IV

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns that are motivating team members behaviour and contributions to discussions in team meetings; e.g. political motivation.

All three of these propositions (IIb, III & IV) found some fit with the data collected in University Business School and were tested in this second case study. Colour Scheme was selected as an appropriate research context for several important reasons.

First, Colour Scheme offered access to their Board of Directors (TMT) as opposed to the middle level managers who had been the informants for the previous case. This was important as the research was concerned with strategic decision making and specifically strategic decision making within top teams. The pilot case - University Business School team - had been a useful surrogate, but in line with criticisms of previous MOC work (see Chapter Two) a real TMT was needed to progress the research.

Second, in light of the centrality of teamwide agreement to the generation of these three propositions, it was important to access a TMT that were likely to demonstrate some degree of overlap and converge (arrive at agreement) when discussing a significant

strategic issue. The membership of Colour Scheme's board had not changed for over five years and were considered to be relatively stable and possibly cohesive group of individuals. In addition, whilst negotiating access, it was understood that Colour Scheme was a relatively small family business that fostered close working relationships: the longevity of the board membership reflected this. Consequently it was believed to be reasonable to assume that this board may display both overlap and agreement.

Third and finally, the research design of: interviews before a meeting, observation of a meeting and interviews after a meeting, required a fairly accurate prediction that the team accessed were about to be under pressure to arrive at a decision at the meeting I planned to attend. Colour Scheme were in the middle of a strategic change program being run by an external consultant that was due to move onto its next phase. This required the board to arrive at agreement about the phase of their change program they had just completed during their March 1996 meeting. As already, stated it took a year from completion of the pilot case to gain access to Colour Scheme.

5.2 Background Information On Colour Scheme.

The Research Site.

Colour Scheme is a family business that manufactures and distributes fine art supplies. They are the product of a merger in 1983 of two long established family businesses. Colour Pallets was the longer established of the two, set up in 1783 by two brothers. Colour Pallets had a history of supplying materials to several of Europe's finest artists. Davies Art, established (again by two brothers) in 1946, concentrated on framing and canvasses rather than the wider range of paint and brush supplies covered by Colour Pallets. In 1983 the board of Davies Family Holdings took over Colour Pallets in an invited and friendly exchange of ownership. The amalgamated company was Colour Scheme.

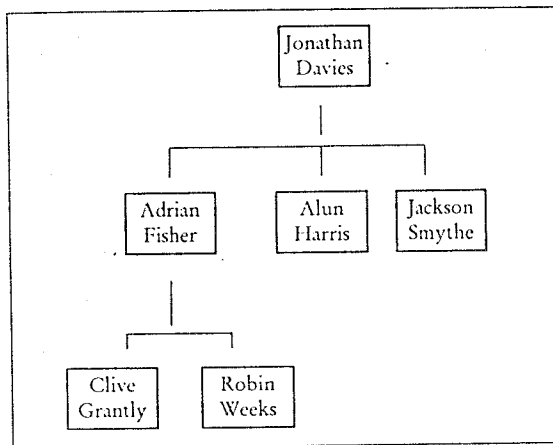
Colour Scheme export their product range of five thousand products to ninety two different countries. Their head office and production plants for most of their product lines are UK based on two sites some two hundred miles apart. In addition to their UK operations, Colour Scheme have distribution bases in Europe, USA and The Caribbean. They are currently looking to move into Australia.

The Informants

At the time of data collection, Colour Scheme had corporate and executive boards. However, the corporate board was minimally active. The Chairman was an elderly family member who held the position in name only. The other representatives were the CEO Jonathan Davies who was also the majority shareholder and the company secretary Alun Harris who also acted in an executive position as Finance & IT Director. The corporate tier was not actively monitoring and challenging the executive as both active corporate members were also on the executive. Consequently, the executive board had the dual pressure of managing the business and making up for the lack of a functioning corporate board by generating, implementing and reviewing the strategic progress of Colour Scheme in terms of the wider market for fine art supplies.

The executive board had six permanent members. Jonathan Davies acted as CEO. As already noted Alun Harris held the dual finance & IT directorship. Adrian Fisher held the role of UK Director that encompassed the direct reports of Robin Weeks (UK Manufacturing Director) and Clive Grantly (UK Sales Director). Finally Jackson Smythe acted as European Director. The structure of the board at the time of data collection is represented in figure 5.1 below.

Figure 5.1: Colour Scheme's Executive Board.



The entire executive board acted as the informants in this case study. Their positions, and lengths of tenure are listed in table 5.1 below.

Table 5.1: Length of Tenure of Colour Scheme's Executive Board.

Name	Position	Age	Tenure
Jonathan Davies	CEO	57	28yrs
Adrian Fisher	UK Director	49	18yrs
Clive Grantly	UK Sales Director	58	23yrs
Alun Harris	Finance & IT Director	46	13yrs
Jackson Smythe	European Director	48	18yrs
Robin Weeks	UK Manufacturing Director	early 40's	16yrs

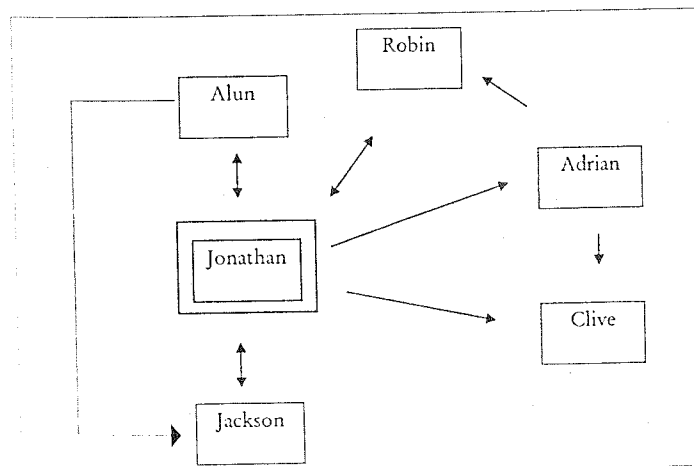
As mentioned in chapter three the test used to identify preferred ways of behaving in this and the third case was the Eysenck Personality Questionnaire (EPQ). It assesses peoples' behaviour preferences in terms of three dimensions: (1) psychoticism (or toughmindedness) where low scores indicate the extent to which one person can empathise with another; (2) neuroticism (emotionality) which is a measure of how quickly a person can return to stability after an emotional episode; (3) extroversion, the extent to which an individual needs to live in the external world. The personality profile of each board member is shown in figure 5.2 below. These were derived by comparing each individual's scores on all three of the dimensions listed above to the 'population average' as listed in the EPQ-R manual (Eysenck & Eysenck, 1991)

Table 5.2: Personality Profiles of the Board.

Director	EPQ Profile
Jonathan	High scoring extrovert, lives in the external world to generate and evaluate ideas. Scores average on toughmindedness and emotionality.
Alun	Also a high scoring extrovert average on toughmindedness but very low on emotionality, so very stable and returns to normal very quickly after an emotional reaction. He could be perceived as cold.
Jackson	Again High scoring extrovert with a potentially confusing combination of low toughmindedness (so highly empathic) but low emotionality (stable and controlled). So although Jackson often is very sensitive to others problems other people may not recognise it. This may be frustrating for him.
Robin	Robin scored highly on extroversion and low in toughmindedness but revealing a recent period of illness, his emotionality score was at the top of the range meaning that he was somewhat anxious and unstable at that time
Adrian	High scoring extrovert, the second highest in the board after Jonathan. Like Jackson, Adrian had a low toughminded score meaning he is an empathic person. This combined with his average emotionality score suggests that others may recognise his sensitivity to them.
Clive	Would not complete the questionnaire. Entries in my fieldwork journal recognised Clive's defensiveness, reticence to be interviewed at all and general agitation. I suspect that on some level he was aware of his pending departure.

As in the pilot case, during interview each director was asked a series of unstructured questions that were designed to assess the influence relationships that may have existed within the board. Questioning was adapted to ensure that both formal and informal influence were addressed. The resulting representation of the network of influence in Colour Scheme's board is shown in figure 5.2 below. As in the previous case, an arrow head indicates direction of influence. A double headed arrow representing a mutually influential relationship. An arrow was only placed in the network when an individual recognised they were influenced by another and not when one person simply suggested they had influence.

Figure 5.2 The Board's Network of Influence.



Jonathan, as majority shareholder, chief family representative, CEO and acting chairman, was an extremely influential individual in Colour Scheme. He referred to himself as a "benign dictator" and suggested that it would be unusual for him not to get his own way. In their one to one interviews, all of the directors recognised Jonathan's influence over them. In addition to his formal power, Jonathan was seen by his employees as an affable, genuine and kind man. Position power combined with natural warmth gave Jonathan a considerable amount of influence within Colour Scheme. The series of quotes below demonstrate this:

Adrian "The strongest person by far who has the overall power, knowledge of the business of problems and opportunities is Jonathan"

Jackson "The most important person in this company is Jonathan, I feel that my relationship with him is sound. We're the same kind of people we share the vision of where the business is going and the need to change."

Alun "Jonathan has got real charisma and warmth that goes out to people so that people feel open to him and they communicate. Its a quite extraordinary talent that this company has benefited from enormously."

The next most influential individual on the executive board was Alun, the Finance Director. Alun did not draw on reserves of personal warmth but was an extremely dominant individual describing himself and a typical Yorkshire man "*I say what I think and I like what I say*". Other directors also recognised his tendency to dominate the discussion in board meetings. As Finance Director, IT Director and acting company secretary, Alun had a degree of information and expert power that the other directors did not. Although not disliked, the other directors comments revealed that they did not welcome being influenced by Alun in the same way as they did Jonathan; he was seen as a very domineering individual even by himself.

Alun "I get people's backs up, I'm abrasive, I challenge too quickly very often which when a team is together I can stifle ideas. But I would find it difficult to talk about this team and not egotistically cluster everyone around me cause that's how we interact"

Jackson "Alun is a man of immensely high intellect. He and I have regular contact. But at times though, he talks very quickly and, having a beard, I can't always see his mouth moving so we do have some misunderstandings from time to time.

Adrian "Alun and I have a difficult relationship really. The way I'd describe it is that 95% of the time we probably agree about most issues and the 5% we disagree is REALLY polarised in terms of I'm right and you're wrong which isn't helpful."

In spite of his abrasiveness, Alun was still able to influence Jonathan. This connection gave Alun a considerable amount of power. Jonathan also recognised in his first interview that (to a lesser extent), Jackson and Robin were able to influence his views. Jonathan called Robin and Jackson "*first among equals*" and colleagues with whom he had "*easy relationships*". However, as the positions that these two directors held did

not give them the formal power that Jonathan and Alun had; their influence within the board as a whole was less.

Jonathan "Jackson is interesting, he has this public school manner which a lot of people might call pompous. But I enjoy his company very much. He's very go, go. I enjoy having him on the team: a bit undisciplined, not a good financial manager but a good entrepreneur. I get on well with him"

Robin had recently suffered a stress induced minor breakdown and had stepped away from many of his former responsibilities. Consequently, at the time of data collection, none of the directors saw Robin as an influential individual.

Jonathan "Robin has got a good brain on him, he's never failed until this job where he didn't make it. I think his current problems (his breakdown) are because this is the first time he's taken anything on and not done it. They'll both deny it but I'm not entirely convinced that Adrian's management style hasn't added to Robin's problems"

Finally, Adrian and Clive sat outside the sphere of mutual influence that included Jonathan, Alun, Jackson and Robin. Having been employed by Colour Scheme for almost as long as Jonathan and having worked his way up through the company to the position of Sales Director, Clive *used to be* someone that had Jonathan's ear. Increasingly though, Jonathan realised he had promoted Clive beyond his capabilities and was looking for a way to remove him from the board. Alternatively, Adrian was in a relatively powerful position as Manufacturing Director with two other board members reporting to him (Clive and Robin). However, even though his direct reports (Clive and Robin) recognised his influence over their own views no other director did. Consequently Adrian was not as influential as he believed himself to be. Indeed, the other directors recognised his desire to dominate the discussion at board meetings and expressed their discomfort with this.

Adrian "Some people find my style intimidating, and I think that is a weakness on my part. I don't mean it to be the case but people do tell me that's how I am."

Jackson "Adrian and Alun do tend to dominate things. Alun does try to hold himself back though, its just his enthusiasm. Adrian is different, he has Clive and Robin who always reflect his views (they are his direct reports)."

Clive "Jonathan is very vocal in meetings, but to give him credit he listens as well. Adrian and Alun are just vocal. They're inclined to have very strong views and sometimes with some people they don't allow them to put questions they don't even give them the chance to answer before they come in and override it. They stress their views without fully listening to what someone has to say"

Jonathan "He (Adrian) is opinionated and doesn't like being challenged"

The Strategic Issue

The market for fine art supplies had passed saturation point with little or no growth to be generated. The industry was dominated by a few companies. Colour Scheme were

the biggest suppliers in the industry. However they were witnessing an erosion of their favourable position. They were no longer the automatic preferred supplier to much of their customer base. Recent changes in the international market place had changed the characteristics of Colour Scheme's consumer. There had been a shift from the dominance of small specialist art shops to high street retailers and out of town craft superstores. In the new market place Colour Scheme were finding it increasingly difficult to trade on the basis of their longevity and tradition. The close relationships that the old sales team (led by Jonathan and Clive) had built up over the years with small arts shops were slipping and Colour Scheme's competitors had been quick to establish strong positions in the changed market place.

Colour Scheme experienced boom years during the eighties and early nineties doubling their world-wide sales post merger (1983) inside one year. The increase in sales was constant throughout the eighties but slowed down in the nineties as the market began to change. In 1990, Colour Scheme commissioned one of the big six consultancy houses to carry out a strategic review. The end products were several structural changes including the executive structure described earlier. In December 1995, after continuing erosion of market share, a second strategic review was commissioned from a private consultant who held a one day intervention session with the board and senior managers at Colour Scheme. This session sparked a number of working groups whose task was to isolate and research particular topics that had been identified as potentially key to future strategic success. A scenario of future market conditions had been given to the groups by Jonathan Davies to create a bounded context within which they were able to carry out their projects. The scenario was that just five of Colour Scheme's major customers would account for over 40% of their total sales. Thus marking a considerable increase in the power of buyers and mirroring the trend already emerging in the US and wider European markets.

Each of the three working groups had at least one director participating in the task acting as the champion of that group's final findings at board level. The rest of the group membership was drawn from the next layer of management and assigned to groups by Jonathan. Although assigned to a working group, Robin had recently been ill and had been unable to participate in his group. Neither Jonathan nor Clive were assigned to working groups. Jonathan was not assigned as he said wanted to retain an objective distance from the project. Clive on the other hand was not assigned as Jonathan believed he was "not very good at that sort of thing". However one would imagine a more likely explanation to be that Jonathan had in mind Clive's eventual departure from the business.

The groups' project was to consider their key strategic areas in context of the new market scenario and comment on required and recommended changes within Colour Scheme. They had been working on this for some three months. An agenda item at the board meeting was designed to offer a forum for critical commentary on the findings of each group's research. These findings had been circulated in report form before the meeting. The most important function of the discussion at board level was to work out a way to move the whole process forward to implement recommended changes by

agreeing the key issues and what changes would be needed in the business. This agenda item was selected for study by Jonathan Davies. He believed it to be the most important task facing Colour Scheme at that point in time.

5.3 Operationalisation of Propositions IIb, III & IV & Method of Testing.

The three propositions generated during the analysis of the University Business School case (IIb, III & IV) were tested in Colour Scheme. Each is now operationalised to make explicit the expectations that were used to test the data collected in this case.

Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

In Colour Scheme, it was anticipated that the board may be likely to be relatively cohesive and therefore not only display collective issue based cognition in the form of dyadic or sub group overlap before their March 1996 board meeting, but also converge around a consensual decision during that meeting. As previously stated in section 5.1, this assumption of cohesiveness was believed to be reasonable as, whilst negotiating access, Colour Scheme had presented themselves as a relatively small business with a 'family' atmosphere reflected in the longevity and stability of their senior management team. In light of the importance of the decision they had to make (i.e. concerning major strategic change), it was anticipated that any agreement reached would continue to persist in the form of some degree of teamwide overlap after the board meeting. Alternatively, Langfield-Smith's predictions about the dissipation of overlap were not rejected and, if this was the case, diversity in board members views would be expected to emerge in interview after the board meeting. To summarise, the pattern expected if proposition IIb fitted the Colour Scheme data would be: dyadic or sub group overlap before the board meeting; agreement based on the most influential team members' overlap during the board meeting; sustained teamwide overlap or a dissipation of teamwide overlap when interviewed after the meeting.

Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their shared social schema of how to interact during team meetings. This distributed knowledge allowing the team to work as a cohesive unit that is able to reach agreement.

In the case of Colour Scheme, it was anticipated that this long serving team would be familiar with one another and over the five years that they had served as the company's executive board, they may have engineered a consistent way of working with one

another and share collective cognition in a distributed sense: have a shared social schema of how to behave in board meetings that may, as in the pilot case, manifest itself in terms of strong and accurate role predictions.

Proposition IV

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns that are motivating team members behaviour and contributions to discussions in team meetings; e.g. political motivation.

In the previous case political behaviour was observed to be over riding one team member's real views on the decision to cut the Summer School. In this case it was anticipated that in this team who had worked together over a significant period of time may demonstrate less concern with such relational issues and more concern with the issue at hand i.e. proposition IV was not expected to fit the data collected in Colour Scheme.

The data collection protocol followed in this case was similar to the pilot in that all directors were interviewed before and after their board meeting. During these interviews they were asked to carry out a VCST mapping of their 'strategic issue': deciding whether or not to continue on to the next stage of their program of strategic change. These cognitive data in the form of VCST maps were then reduced to the core construct (s) that best characterised each director's opinions at the time of interview. This reduction process was carried out by myself and involved the use of a series of indicators to assess the centrality of a construct to an informant's view of their strategic issue. The first indicator used was linkage; how many links did each particular construct make to another. The most linked were assumed to be the most central. Along with this indicator, taken directly from the VCST map, several others were drawn from the interview transcript. These included (1) primacy of recall i.e. the first thing the informant chose to discuss; (2) frequency i.e. the number of times a topic was returned to and length of time spent discussing it; (3) the engagement of the informant when discussing topics i.e. how passionate or emotionally attached they were to an idea or opinion. A combination of these factors was used to make an interpretive judgement about which theme was the most important in each team member's views about their strategic issue. Examples of this reduction process are given in appendix 5.1 with all twelve VCST maps appearing in appendix 5.2. Note that in many cases, a series of central constructs all appeared to be addressing the same thing. When this occurred, an overall theme was used to capture the relevant constructs.

The heterogeneity or homogeneity in the core constructs taken from each team member's data was assessed. The core constructs, with example quotations from the interview transcripts were laid out on cards with no identifiers. The same and similar core construct cards were grouped together. This assessment of similarity was carried out separately for the data collected before the meeting and the data collected after the meeting.

Second, the tape recorded section of the March 1996 board meeting² where the 'strategic issue' was discussed (eighty minutes of tape) was transcribed. This transcription was annotated using observational field notes taken by myself during the meeting. For example, if I had made a particular note about body language, general atmosphere and other factors that may not have emerged on tape, these were then added to the completed transcript. This transcript was to be used for three purposes. First it was used in a simple way to provide evidence of the board either reaching or not reaching agreement. Second, it was used to look for evidence of accurate role prediction or other patterns that may suggest the presence of a shared social schema. To assist this grounded analysis, the transcript was reduced to key phases of discussion, the major discussants and the time spent on the discussion. Third and finally, the transcript was also used in a ground fashion to look for evidence of individual, group or environmental factors that may be overriding individual issue based cognition and driving director's behaviour.

5.4 Test of Proposition IIb

Proposition IIb was designed to test for (1) the existence of overlap within the board and (2) the relationship that this overlapping (collective) cognition may have on the agreement they were able to reach when discussing their strategic issue. It was anticipated that the directors of Colour Scheme would display a considerable amount of overlap in their views of what the next stage of activity in their program of strategic change ought to be. In addition, they were expected to come to agreement during their March 1996 board meeting and carry this agreement forward as overlap after the meeting. As suggested by Walsh et al (1988), it was anticipated that the overlap shared by the most influential board members would be most reflected in the consensual agreement reached. Also taking note of Langfield-Smith's (1992) suggestion, the possibility that teamwide overlap promoted by agreement in the board meeting may have dissipated after the meeting, was not dismissed.

In fact, none of the expected patterns occurred in the data collected in Colour Scheme. First there was some sub group and / or dyadic overlap before the board meeting. However, these groupings were in direct opposition with one another. The board was not able to come to agreement during their meeting. Instead, they simply agreed to disagree. The least influential directors dominated the eighty minute discussion and finally, there was no evidence of teamwide overlap after the meeting. The overlapping groupings of directors that had occurred before the meeting recurred. So instead of finding: dyadic overlap, agreement based on the most powerful dyad's overlap and then tighter overlap, what actually occurred was: dyadic overlap, no agreement, a discussion dominated by the least influential team members and slightly more convergent overlap after the meeting. A full account of this interesting set of data now follows.

² Note that although the entire eight hour meeting was tape recorded, only two sections were transcribed. The first of these was the eighty minute section where the strategic issue was discussed. The second was a section of the meeting where an agenda item that all the directors were stake holders and they had to reach a decision (i.e. similar type of agenda item to the strategic issue) was used as a comparison to attempt to eliminate some issue based effects.

Before the Meeting - each of the directors interviewed expressed their views about the strategic change program at Colour Scheme. At the time of data collection, the working groups had been theorising about the changes that would be needed in different areas of the business. Their project was based on the assumption that 40% of their business would soon be coming from only five major clients. The overlapping groupings that emerged from the VCST mapping are shown in figure 5.3 below and are replicated in table 5.3.

Figure 5.3 Groupings of Similarity Before the Board Meeting.

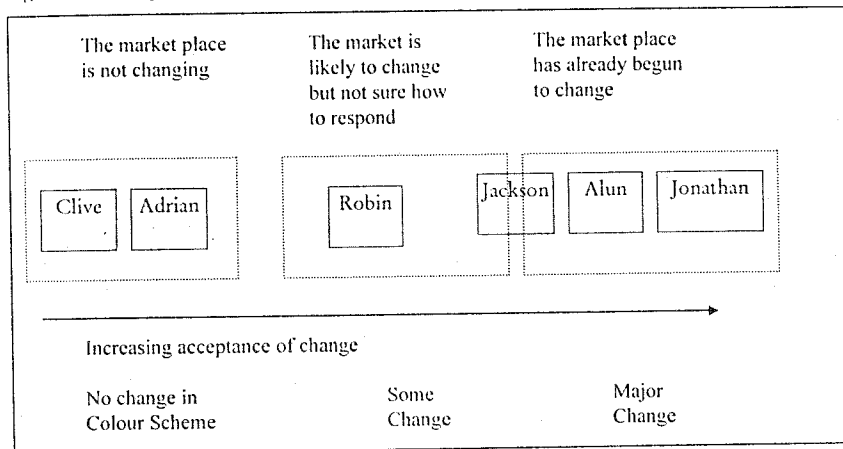


Table 5.3 Key Themes of Directors Before the Board Meeting

Clive	Adrian	Robin	Jackson	Alun	Jonathan
Not convinced of the need to change at all. Very keen to protect the status quo.	The market place will not change as dramatically as has been suggested	The market is changing, need a clear plan. In particular need to take cost out of the business	There is a need to change. Keen to have a clear plan, agreement and see action	The market place is changing and there must be cultural and structural change	The market place is changing and to cope Colour Scheme must change the TMT

Jonathan, the most influential board member, was the driver behind the strategic change exercise. He was convinced that the balance of power in the market place was shifting dramatically and believed that Colour Scheme had to change the way it did business just to maintain its position in the top three of suppliers of fine art products. Jonathan had begun to negotiate to become a part owner of one of the new out of town craft store chains. The other directors were not aware of these negotiations. In addition, Jonathan had already considered changes he intended to make to the executive board (removing Clive and Robin, demoting Adrian and appointing a CEO, marketing and USA directors) and the corporate board (two new family representatives, two new non-executive directors, himself as chairman and Alun as secretary). The other directors were also unaware of these plans to re-structure. At the time of his first interview,

Jonathan's intentions to remove directors were discussed off tape and there are no direct quotes that can be used without breaching confidence. However the following quotes taken from Jonathan's taped interview reveal something of his intentions.

Jonathan "Everybody will probably mention at some stage that we've been the same management team for FAR TOO LONG (stressed). The essential thing is that we have dynamic management not dynamic within the individual but dynamic in that we need to change people. I don't think they (the current board) have had to cope with changes but now they're going to have to. They've got to get their eyes open a bit"

He stressed that in his view, the most important thing for Colour Scheme in the short term, was for the directors to agree with the findings of the working groups that had demonstrated just how necessary significant change was. Once the board agreed with these reports, suggested that the next stage of the strategic change programme ought to be actually undertaking his planned structural reform. It is important to note at this stage, the freedom that Jonathan had to enforce his decisions on his board. As majority share holder, head of the family and both Chairman and CEO, there was no one director who would be in a position to prevent him taking a particular course of action.

Over half the board did agree with the findings of the working groups and moreover, the basic assumptions that had underpinned them. This dominant cluster of opinion included Alun, Jackson and Robin. Alun saw the future in very much the same way as Jonathan. When pressed Alun revealed that he believed Adrian and Clive to be the problem and thought they ought to be removed from the board.

Alun "The key issue is the management structure and the culture of this company. The market is changing, we've got to recognise that AND CHANGE (stressed) The most important thing is the management structure, its not focused to take us forward, square pegs in round holes and these problems are hurting the company. The views I've got are fairly strong and I've discussed them with Jonathan alone at this stage."

The message that was clear in Jackson's VCST was the urgency with which he felt these changes ought to take place. As with the other members of this dominant cluster of opinion he agreed that the market place was changing and that Colour Scheme's management needed to change. The key theme of his cognitive map was a strong desire for *something* to happen quickly. He kept repeating his own frustration and the damage that he believed not acting was doing to the company.

Jackson "There is a feeling of complacency in this company that frustrates me very much..... (hesitating). At the moment the tough talking hasn't really started happening but someone HAS TO (stressed) take the decision to move these briefs (working group briefs) forward. But a decision HAS TO BE TAKEN no more sweeping things under the carpet, people know its decision time. It's not up to me to tell Jonathan how to structure his board, there is a limit to what I can do but he (Jonathan) HAS TO make a decision and not a fudge. PLEASE NOT A FUDGE !!"

Robin was also convinced of the need for Colour Scheme to change in response to rapidly changing market conditions. However, he did not make sense of this need to

change in terms of personnel changes or in terms of his own frustration to see significant paradigmatic change happening as Alun and Jackson had. Instead he believed that simply controlling costs and undertaking limited restructuring in manufacturing and distribution would be sufficient.³

Robin "Things are changing for us now, larger companies are coming in and looking to do a much bigger job than the mamma and papa shops (small retail outlets). It happened in America and Jonathan feels it will come here. The problem is we need to be geared up for getting more and more WH Smiths and we have to control our costs and be very careful giving them greater and greater discounts that we're not cutting into margin"

As table 5.3 shows there was a clear split within the board concerning their program of strategic change. Jonathan, Alun, Jackson and Robin all agreed that Colour Scheme's market place was changing dramatically and, as the descriptions and exemplar quotes above show, the ways they believed the board should react to this change were different. Nevertheless, in terms of the basic assumption that underpinned their current strategy development activity (that 40% of their business would come from 5 of their customers in the next 5 years), they all agreed.

Disagreeing with the opinion that prevailed in the most powerful group of directors was Adrian and Clive. They did not believe that significant change would take place in their customer base. As with the dominant group of directors who believed in the need for change, Clive and Adrian appeared to have different reasons for being against change. Clive appeared to be suggesting that the best course of action for Colour Scheme was *not* to change their way of doing business and try to simply maintain their current dominant position within the market and protect the business they had from small buyers.

Clive "The UK market is a very mature market, we're at the top end, we have a strong presence. It's a market over the years that we've dominated. Our only movement now is to carry on doing... expanding our presence against people coming into it. As I said we're in a mature market and it's just about maintaining what we've got. I think we could do some things to expand our market but they'd be terribly damaging to our business"

Clive's 'anti change' view was in direct opposition to the opinion that prevailed amongst the most powerful group of directors. It may have been that he was right and they were wrong. However, there was some evidence to suggest that Clive may have been feeling under pressure at the time of data collection and, feeling under threat, was opposing *any* change to the status quo. Several factors contributed to the view that Clive's 'anti change' view was more of a defensive position than a realistic appraisal of Colour Scheme's competitive environment. First, Clive was extremely anxious during interview. He perceived that my questions about the strategic change program were a test of some kind.

³ The difference in the ways that Jonathan, Alun & Jackson made sense of the need to change when compared to Robin is reminiscent of Grinyer and Spender's (1979) model of paradigmatic change in which managers will try cost control and make other *alterations* to their existing activities to execute strategic change until they finally realise that paradigmatic shift and *significant change* is really required.

Clive "I didn't realise you would be asking about all of this. If I'd known that this was what the interview would be about I'd have looked at books and things before. I not sure if what I'm saying is right or not. You have to understand that in many ways these modern tools of strategy have come in over the years and I haven't been used to them. "

Second, before the interview began, Clive made it clear he was very uncomfortable with my request to fill in a personality questionnaire. He said he felt unhappy about people "making guesses about him" and therefore would not fill it in. Third, Clive initially refused to take part in the VCST mapping or have his interview tape recorded. After some considerable time was spent gently reassuring Clive that there were no right or wrong answers and that no-one else in Colour Scheme would see or hear of his views in anyway, he finally agreed to both the tape recording and the VCST mapping.

It may be reasonable to assume that Clive's desire to prevent change was a result of in some measure of personal insecurity (i.e. he may have sensed that his position was under threat). A common mechanism to cope with insecurity is to transfer insecure feelings by projecting them on to another person or reason for feeling insecure (Hirschhorn, 1988) i.e. *I feel negative about the strategic changes because they're wrong and the working groups have produced bad work as opposed to I don't understand them or what they'll mean for me.*

Clive "The problem is that you're inclined to think that these reports are rubbishy because in a sense, even though I might agree with 90% of them, there's 10% that's a little too personal and totally wrong. Therefore I'm inclined to dismiss the whole thing and lots of people have seen these things now and its too late to take it back."

Adrian also disagreed with the assumption underpinning the strategic planning programme and, as such, was dismissive of the outcome of the working groups. His own group had produced a very positive report that did not see any real need to make major changes.

Adrian "I think the problem is that this strategic planning makes certain assumptions that we'll have fewer and much more dominant customers. That comes from the situation that has happened in America. I don't believe it's going to happen in the UK or world-wide. I don't think it will EVER happen in the UK. I agree we do need to try to find different solutions to our problems different from the ones we've employed in the past but I think distribution and customer service ought to be dominant."

It was hard to unpack exactly why Adrian appeared to be so against the proposition that the market place was changing. Three reasons could have accounted for his opposition to change. First he may have, inspite of prevailing opinion, have genuinely believed that the proposition of significant change in Colour Scheme's competitive environment was incorrect. Second, he may have been primarily motivated by a positioning battle between the UK and US business. There was evidence in Adrian's interview that suggested he certainly felt the UK was losing influence to the US in terms of Jonathan's attention.

Adrian "The problem with Jonathan at the moment is that he's becoming increasingly pre occupied with America, for me personally he doesn't appear to be as interested in the main business as I'd like him to be"

Third, Adrian, in the same way as Clive may have had a generally negative disposition towards change at the time of data collection. He may have been aware that he too was about to loose influence within the business (Jonathan planned to re-structure and demote Adrian from UK Director - effectively general manager of the UK- to UK Director of Manufacturing) if the changes went ahead. Consequently, it would not be surprising for him to be against the changes happening in the first place. The most logical position to adopt would be to question the rationale underpinning the whole program rather than speaking in personal terms as Clive had chosen to do.

When the data analysis was discussed informally early in 1998, one of the new non executive directors agreed that he too had never been able to establish quite why Adrian had taken this position as he "was clearly backing the losing side". The overall impression of Colour Scheme that I was able to gain in my time there suggested that the directors had seen change initiatives come and go over the years, but had actually seen very little change (note Jonathan, Jackson and Alun's earlier quotes). It may have been that Adrian saw the latest strategic change program as another round of talking about change without actually changing anything. If this was the case, there would be no real loss of position to be against change as it would be unlikely to amount to anything and Adrian would have in effect backed the winning side.

So in summary, as with the University Business School team, before the board meeting there was no absolute homogeneity amongst the directors. However, there was considerable degree of overlap. Jonathan and Alun were particularly close. Jackson whilst not as close did share many elements with these two and Robin overlapped as he agreed with the basic assumptions and aims of the planning programme. These directors were the dominant grouping of opinion as the group not only included the majority of the board but also included the most influential members. Adrian and Clive clustered together and formed a minority group with views that were in direct opposition to prevailing opinion. However, as the 40% assumption was *theory* at the time of data collection, neither of these positions could have been interpreted as incorrect.

The Board Meeting - lasted over eight hours from 10am to almost 7pm. All of this time was spent in one room with no breaks (lunch was served in the room). Consequently the meeting was very tiring for all the directors. The discussion of strategic planning, the working groups' output and the way forward to implementing change lasted eighty minutes, from 2:45pm till 4:05pm.⁴

There were five reasonably distinct periods of discussion during the eighty minutes of debate. The three longest periods (each approximately 20 minutes) were initially

⁴ This time slot was unfortunate as it fell in the middle of the natural slow down in the body's metabolism (mid afternoon). In this period called the *post diurnal dip*, fatigue can be more obvious than at other times of the day and concentration becomes difficult (Redfern, 1998).

concerned with reviewing the feedback from each of the working group leaders: (1) Adrian. (2) Jackson (3) Alun. The final two phases (totalling 15 minutes) were concerned with discussing how the strategic change program should progress: (4) bringing a consultant into the next meeting (5) and arranging a time for the next meeting.

Table 5.4 Phases in the Board's Discussion of their Strategic Change Initiative

Phase	Topic and Key Discussants
1	Adrian reported back on his group. He was heavily criticised for being too lenient by Jonathan & Alun. This ended in confrontation between Adrian and Alun as Alun pointed out areas of weakness Adrian had missed. Jonathan broke this up and moved on to the next phase (25 mins)
2	Jonathan asked Jackson to report back on his group. This in turn is heavily criticised by Adrian for being too dramatic. Another heated discussion began about the likelihood of the market place changing i.e. 40% of business through 5 customers. Jackson defended his report. Jonathan and Alun defended the 40% assumption. Adrian and increasingly Clive attacked it. Finally as Jackson managed to respond to Jonathan about how he intends to move his group forward, Clive interrupted and initiated another round of debate about the 40% assumption (21 mins)
3	As Clive would not drop his insistence that the 40% assumption will not occur, Jonathan suggested they need to take time out to clear this up. Clive was extremely agitated saying people don't believe Alun's report. After questioning from Jonathan he admitted that he had been putting his staff under pressure to reveal what the working group had been discussing. Jonathan responded aggressively accusing him of being unprofessional. Adrian defended Clive saying he was himself "outraged" by Alun's report that did not contain "a penny piece of evidence". This prompted another round of locking antlers between Alun and Adrian. Jonathan intervened to break up Alun and Adrian and naively mentioned that if people take decisions they "have to expect the criticism to come home to roost". This sparked Clive into his MOST defensive and anxious state of the whole meeting taking all the criticism in Alun's report personally. He referred to the reports as "turning in on ourselves and chewing our own heads off" (very powerful metaphor). Alun & Jackson both calmly tried to point out that constructive criticism is good. Jonathan had less patience; eventually he called a halt and suggested that they should ask to see their private consultant again to help resolve this disagreement: agree to disagree (19 mins).
4	Clive & Adrian questioned the need for external intervention and the ability of the consultant to comment on their market and their organisation. Jonathan defended the consultant's input (7 mins)
5	Jonathan asked each working group leader (Alun, Jackson & Adrian) to estimate when they'd be ready for a meeting with the consultant. Clive again became agitated when the reports are discussed claiming they just "say everything we're doing is wrong". Jackson, Alun and Jonathan again pointed out that constructive criticism is good. Adrian tried to initiate another battle with Alun claiming he can't criticise previous change efforts if he wishes people to buy into future change programs. Jonathan cut short the potential battle and forced the group to book diary time for a further board meeting with the management consultant (8 mins).

Table 5.4 shows that the board were unable to agree; not only on the next stage of their strategic change program but also on the premise on which the whole exercise had been undertaken. The direct opposition that was apparent in the interviews conducted before the meeting spilled over into the meeting itself. The board finally agreed to disagree and scheduled a repeat meeting with their strategy consultant present. The views of the least influential directors (Clive and Adrian) dominated the discussion (but not the outcome

as Jonathan implemented his plans anyway). This was in direct contradiction to Walsh et al's (1988) expectations.

After the Meeting - the directors again demonstrated some overlap in the key themes distilled from their interview transcripts and VSCT maps. Each director's key theme is shown in figure 5.5 and table 5.4 below.

Figure 5.5 Groupings of Similarity After the Board Meeting.

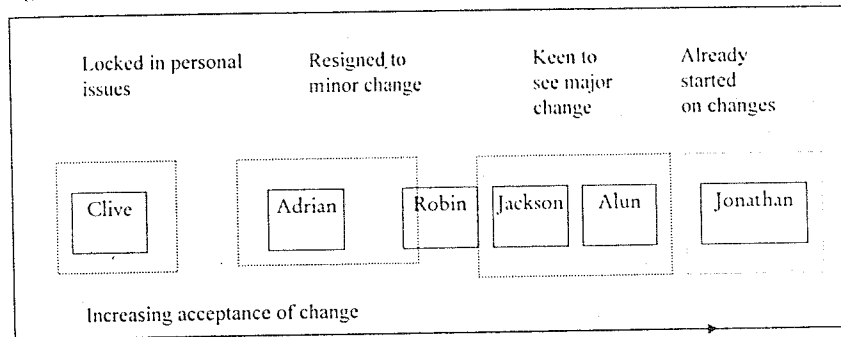


Table 5.4. Key Theme of Directors After the Board Meeting.

Clive	Adrian	Robin	Jackson	Alun	Jonathan
We need to lead from the top and ignore the working groups (they were too critical) and we don't need an outsider to help.	Suppose change is necessary. Need research how to better service the customer (minor change). The working groups have been counter-productive	To implement new distribution system controlling margins and carry out the structural changes needed. Must be careful restructuring.	To act quickly and maintain momentum. Structural changes should be implemented. Clive will go. Its a shame the board is split.	The organisation's structure need to be changed now (retire Clive and demote Adrian). The meeting underlined the polarisation.	The meeting highlighted the differences. Nevertheless change will happen. A new board structure will happen soon (e.g. no Clive, demoted Adrian).

The theme that appeared to split the board after their meeting was again acceptance of change. At one end of the spectrum Jonathan fully intended change to happen and during his second interview had formulated proposals for a new board structure that he intended to circulate at the next board meeting.

Jonathan "Well, this WILL BE (stressed) the solution to the debate as I see it. For the next meeting I shall do a version of these changes (that would sideline Clive and Adrian) and say 'right now these are things we're going to do how about this'. I have a Machiavellian attitude that what I (Freudian slip ?), what we, end up doing is what I slowly build in bricks. So if reality hasn't dawned on them (the board) it gradually will."

Jonathan had not fully shared his restructuring plans with Alun and Jackson but he stated that he felt he could rely on them.

Jonathan "Jackson and Alun are solid people who I've been having kind of this debate with but not as frank with them. I just know when the muck hits the fan (when he tells Clive and Adrian) that there's a core of support there"

At the other end of the spectrum, Clive seemed to recognise that on some level changes would be happening. His main concern was that they should be lead from the top and not from the working groups or the external consultant. In addition, his own sense of personal injury from the criticism levelled at the sales department in the report was still central to his view.

Clive "WE (stressed) should come up with a policy and get on with it rather than get too much feedback from outside. WE ought to lead from the top. My worry is the working parties have become tablets in stone. We should have resolved it ourselves in my opinion that's what we're here for, we should have solved it and not brought outsiders (the working groups and the consultant) in. It should be leadership from the top. I'm old fashioned in that way. Reading some of those reports, there were a lot of issues that were just an opportunity to bring things out of the cupboard, to ride little hobby horses and that's not going to get us anywhere is it."

The other directors sat in between these two extreme positions. Alun and Jackson were both very close to Jonathan, overlapping in the sense that they too saw that changes to the board needed to be made and they were likely to involve Clive and Adrian.

Alun "Clive will take early retirement, that'll be what Jonathan will do. I should think he'll be fairly heavy handed. With Adrian I'm not sure what he'll do but something will have to be attempted"

In Jackson's case, although he overlapped in the above respects, he was also consistent over time in that the theme that emerged from his interview as being his top priority was his desire to see action taken quickly. This was representative of his frustration (this emerged in his interview before the board meeting) with Colour Scheme for "fudging it" (not taking and implementing tough decisions) for so long.

Jackson "When is something going to happen, when is an action going to be promulgated. The board have got to come to a conclusion quickly. We can't let this be protracted, because otherwise not just the momentum will be lost but the gravity of the matter will also be lost"

He talked of the "*simmering anxiety amongst the board*" that, if not resolved, would lead to the sort of delay he feared. In fact almost all the directors recognised the split within the board (Robin alone did not discuss it) and in that respect were accurately predicting the each others views.

Robin agreed that major changes were needed to cope with demands that their new major clients would make. These changes included re-structuring the TMT. Robin

seemed concerned that structural change may happen for change's sake and the important thing was to watch the company's margins when dealing with the new major suppliers.

Robin "But the new structure that happens may be hobby horses and not what's needed. We need to be careful about the structure; we need to make sure we don't fall in love with the structure and not the strategy."

So in the same way as before the meeting, although Robin was overlapping with Jonathan, Jackson and Alun, he had a less revolutionary view of that change. In this way, he spanned a gap and overlapped with both the dominant cluster and Adrian. This was especially noticeable after the meeting as Adrian appeared to have recognised that some changes would be taking place, but along with Robin he believed that these should be adaptations not revolutions.

Adrian "Change is necessary I suppose. I think our focus is on getting what we have right rather than coming up with anything new. I think what we need is a halfway house between what we've got now and this sort of doomsday scenario where our business gets hijacked. We need to define an industry standard for servicing customers and don't put any extra cost in at all"

At no point did Adrian address any form of structural change and he stood by his position that the 40% assumption was wrong: "that it may have happened in the US but would not happen in the UK".

So in summary, after the board meeting there was some evidence of collective cognition in terms of overlapping key themes that formed clusters of opinion. The majority of the directors recognised the need for change, welcomed it, but were also aware that Adrian and Clive were against it. However, the whole board had converged in two important respects. First, they all realised on some level that change was inevitable, and this included Adrian and Clive. Second, after the board meeting, all of the directors (with the exception of Robin) now recognised the split of opinion amongst them. This was commented on in more detail by Jonathan, Jackson and Alun in particular as they had believed that the need for the strategic change program to be in place and the assumption of 40% of the company's business going through 5 customers, had been taken as read at the being of the working groups assignments. Consequently, Clive and Adrian's opposition to these basic assumptions may have been something of a surprise to them.

Jackson "We now have a split on the board. It appeared that two people were not terribly happy with the things that were said in the working groups. Its a shame really."

Alun "The last meeting just underlined the problem we have. It did nothing to solve it. We were polarised, and in the way that one would expect"

Jonathan "It just brought into formal discussion all these issues that have been bubbling around under the surface in the company in an informal way since our last strategic planning"

Revisiting Proposition IIb - This proposition was designed to test for (1) the existence of overlap within the board and (2) the relationship that this overlapping (collective) cognition may have on the agreement they were able to reach when discussing their strategic issue. It was anticipated that the directors of Colour Scheme would display a considerable amount of overlap in their views of what the next stage of activity in their program of strategic change ought to be. In addition, they were expected to come to agreement during their March 1996 board meeting and carry this agreement forward as overlap after the meeting. As suggested by Walsh et al (1988) it was anticipated that the overlap shared by the most influential board members would be most reflected in the consensual agreement reached. Also taking note of Langfield-Smith's (1992) suggestion, the possibility that teamwide overlap promoted by agreement in the board meeting may have dissipated after the meeting was not dismissed.

In fact, none of the expected patterns occurred in the data collected in Colour Scheme. First there was some sub group and / or dyadic overlap before the board meeting, and these groupings were in direct opposition to one another. The board were not able to come to agreement during their meeting. Instead they simply agreed to disagree. The least influential directors dominated the eighty minute discussion and finally, there was no evidence of teamwide overlap after the meeting. Nevertheless, the board did appear to have converged in two important respects: (1) they all recognised that *some form* of change would occur (2) they all recognised the split in the board

So instead of finding: dyadic overlap, agreement based on the most powerful dyad's overlap and then tighter overlap, what actually occurred was; dyadic overlap, no agreement, a discussion dominated by the least influential team members and slightly more convergent overlap after the meeting: proposition IIb did not fit the data.

5.5 Proposition III

Proposition III was initially introduced in the pilot case to account for data that IIb (although it fitted the data collected in University Business School) could not. In this second case, IIb did not fit the data in any respect. Consequently propositions III and IV were used to further explore the data.

Base Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their shared social schema of how to interact during team meetings. This distributed knowledge allowing the team to work as a cohesive unit that is able to reach agreement.

In Colour Scheme, it was anticipated that this long serving team would be familiar with one another and, over the five years that all of them had served as the company's executive board, may have engineered a consistent way of working with one another. Consequently shared social schema (distributed knowledge) of how to behave in board meetings manifest in strong and accurate role predictions was expected to be present.

In fact, it was shown in the previous section that Colour Scheme's board were unable to reach a decision about the next stage of their strategic change program. The directly opposing views of the two distinct overlapping groupings were exposed in the board meeting, with the views of the least influential group dominating the discussion. The board were only able to agree to disagree. Consequently, proposition III that suggested that agreement in the board room may be the function of a shared social schema of appropriate ways of behaving as opposed to overlapping cognition, automatically did not fit the data collected either.

In University Business School proposition III had fitted some patterns found during data analysis. That is, predictable roles that team members always played, appeared to guide interaction and contributed to the construction of consensus around Bill's suggestion to the team's problem. Even though Colour Scheme's board did not reach agreement, the analysis of their interviews and meeting transcript revealed compelling evidence to suggest that much of their interaction could be described as routine, predictable and expected. It may have been that the prevalence of this routinised way of interacting in Colour Scheme could have prevented them reaching agreement as opposed to facilitating as was the case in University Business School. That is, they displayed dysfunctional as opposed to functional routines.

Several pieces of evidence of routinised behaviour in Colour Scheme are now presented to further expand and develop proposition three. First, in their pre-meeting interviews, three of the six directors commented on the dysfunctionality of their board and its relationship to their ability to work well as a team.

Alun "We rarely work together as a group. One of our failings is we're a load of barons who run our own little areas that we run semi-autonomously, we've all been together for so long and we're just not a great group."

Clive "We spend an awful lot of our time in these meetings (board meetings), they virtually last all day and a lot of that time we don't spend constructively at all. Its been going on like this for so long now its just the way we've always been"

Jackson "One of the things that concerns me greatly is that as a group, decision making together, we've just been together so long and that's where we fall down.....(pause) I feel at times that I get sucked into the lack of discipline of not listening or interrupting that is very rude. Some people might think I'm of the old school but it's very frustrating I like to know where I am. There are many occasions when I have no idea whether we've made a decision or not and I look forward with interest to the minutes to see if we have!"

In different ways, they all suggested that the dysfunctionality of their team was somehow related to their familiarised patterns of working with one another i.e. see underlined sections above. In addition, during my observation of the board meeting, it appeared that the directors were each showing repeated patterns of behaviour irrespective of the issue that was being discussed. This evoked a sense of *routine*. The notion of routine, is captured in the following quote from Mangham.

"it is possible to extend the analogy (theatrical) and conceive of what goes on in organisations as a series of performances by a *Commedia dell Arte* troupe. The essential fact about *commedia* is that it consists of a constellation of characters who remain the same regardless of the plot they find themselves embroiled in. Like Morecambe & Wise, Stan Laurel & Oliver Hardy and The Marx Bros., wherever they find themselves, whatever the situation they remain the same"

Mangham (1986, p.62).

To explore this idea, two sections of the meeting transcript were analysed. The first stage of this analysis was to break the transcript into standardised text units. These could have been individual lines, paragraphs or sentences. Sentences were chosen as they represented a complete statement, but were not so big as to contain a mixture of themes as is the case in a paragraph. Each text unit was then classified in terms of routine or non-routine behaviour. This was clearly a subjective judgement and was made by myself. Precautions were taken in that the transcript was coded twice. During the first round of coding, my sense of what was *routine* (repeated and predictable as with the '*Commedia dell Arte*') and what was not, was still developing. Some weeks later, before this analysis was due to be written up for an internal review panel at Cranfield, the transcript was re-coded. This re-coding allowed for the complete coding the transcript in terms of the more concrete ideas of routine behaviour within the Colour Scheme board that had emerged from the first round of coding.

A second agenda item was analysed in the same way to remove issue based effects. That is, if the same trends were found to occur when the board discussed a completely unrelated issue then the pattern found in the analysis of their strategic issue may be considered more reliable and likely to be found again. The overall trends were in fact found to be similar. Just over 65% of the board's discussion of their strategic change program, was classified as routinised expected and predictable. In the second agenda item analysed this figure rose to over 70%. The two agenda items analysed in detail, produced three behavioural routines that appeared to account for the majority of the data that was classified as routine: (1) the locking antlers routine; (2) the parenting routine and (3) the withdrawal routine. A brief description and example of each is given.

The *locking antlers routine*, as the name given to this repeated cycle of behaviour suggests, was concerned with establishing dominance and in particular, with two directors who were continual battling with one another. These directors were Alun and Adrian and descriptions of their domination of board meetings were given by several of the directors during their first interviews. This behaviour was clearly taking place during the meeting observed and accounted for 11% of the total eighty minute conversation. A quote taken from Adrian's first interview summarises the general tenor of the exchanges between these two.

Adrian "Alun and I have a difficult relationship really. The way I'd describe it is that 95% of the time we probably agree about most issues and the 5% we disagree is REALLY polarised in terms of I'm right and you're wrong which isn't helpful."

It appeared that whenever Alun and Adrian engaged in a discussion, one of them had to win. In spite of the fact that on many occasions the initial views they expressed were not polarised, but were often quite close, they became oppositional in their prolonged exchanges to establish dominance. This polarisation of views is discussed by Moscovici & Doise (1994). They suggest that groups can be more extreme in the decisions they make, as the process of arguing forces people to exaggerate their initial positions in order to distinguish their argument from others and ultimately win.

The section of discourse that follows is a typical example of the locking antlers routine that was found in the analysis of two agenda items. Note how frequently they interrupt each other i.e. not fully listening to one another.

Adrian "I have to say Andrew that your theory of avoiding bulk heads and printing part of the orders into the zone where its going to be picked is"

Alun (interrupting) "it might be miles down the line but anyway, but anyway that's not my theory. What I"

Adrian (interrupting) "But I have to say that David Reevely's opinion has always been....."

Alun (interrupting) "Look its not my theory, but anyway I never proposed printing in the zones where we could pick the stuff"

Adrian (interrupting) "OH BUT YOU HAVE (triumphant tone)

Alun "WHEN !" (shouting)

Adrian "Do me a favour will you Alun I mean"

Alun (interrupting) "If you mean that thing I put out two years ago .."

Adrian (interrupting) "LOOK you HAVE ALRIGHT !" (shouting)

Alun "It says it is possible but I wouldn't recommend it at this stage, that's all."

Adrian "Well, I'll tell you something, Derek Matthews (a logistics consultant) was absolutely emphatic, 'cause I said to him, I said 'well surely if you want to avoid the bottom length of the warehouse office, don't put it in the warehouse office, put the picking list out where its going to be picked' and he came back and said it wouldn't work and I said 'why not, why wouldn't it work' and he said 'because you'll spread the orders at all different picking places and at some point they've got to come together and what you'd do is you'd exacerbate the collation process not make it smoother' so with your way you'd transfer the bottle neck and just make the collation bottle neck worse."

Alun "Where they're printed wouldn't alter that an iota. But I didn't suggest that anyway. I actually suggested that you printed them in the warehouse office BUT you did the batch separation, you didn't actually put them through a clerical process which only adds delay..

Adrian (interrupting) "No, no your report said....."

Jonathan (interrupting) "Look you two ! We'll never get on if you keep getting into the detail like this, now"

Alun (still loud and aggressive) "No, but the point I'm making is, I mean think of the number of orders we have and two hours is about right and it takes us two days !! Explain THAT ! It takes us about fifteen hours to update on average therefore its thirteen hours of waiting for something to happen to two hours of something happening. You're supposed to be attacking things like those thirteen hours, it's common sense !"

Jonathan "Adrian where are your group up to, what would you do with this group now ?"

Alun is still mumbling in the background

Adrian (aggressively to Alun) "LOOK have YOU even read it ?"

Alun "Yes"

Adrian "You've read the actually report ?"

Alun (impatient) "YES ! And ?"

Adrian "Well that's precisely what we're going to do."

Alun (backing off) "Oh, I didn't get a sense of that, I must have missed it I'll read it again."

This episode was by no means an isolated incident. Alun and Adrian 'locked antlers' on several occasions during the eight hour meeting as in fact, their colleagues had predicted they would.

Jonathan's continual interventions to separate these two brought to mind the role of the parent dealing with quarrelling siblings; Jonathan playing the role of 'Daddy'. By repeatedly responding to Alun and Adrian's locking antlers routine, Jonathan appeared to have developed into a repeated cycle of behaviour playing the parental role. Another category of repeated, routinised behaviour identified in Jonathan's contributions to the meeting also reinforced this parental role. This was concerned with his tendency to take time out of the discussion to fill in the other directors on his latest activities that often had important implications for the business as a whole. For example, his negotiations with a craft superstore to initiate a joint venture had not been shared with the rest of the board. He chose to disclose it during the discussion of something else⁵. In fact 35% of the discussion about the strategic planning issue went through Jonathan, during this time he was responsible for instigating seven periods of drifting off the point under discussion, of these seven, the majority were storytelling episodes. Alun referred to Jonathan's habit of doing this in his first interview.

⁵ The contract with 'Craft Superstore' was an proof that the shift of 40% of Colour Scheme's business to 5 major customers was beginning to happen.

Alun "In a way Jonathan is the worst communicator of the lot. He tends to either forget or not tell people things. At times you have to draw information from him, you have to put yourself in front of him to draw out the information. Perhaps its part of his personality. I don't know"

This tendency of Jonathan's to 'story tell' was not always concerned with major activities e.g. joint ventures, but could also be concerned with anecdotes about key industry figures that he had recently met. Two examples of Jonathan's storytelling - parent routine - are shown below. The first is concerned with the joint venture, the second with an anecdote. Note that during Jonathan's stories, there were few interruptions from other directors. This was somewhat unusual in terms of the rest of the transcript.

1. Alun, Adrian and Jonathan were debating appropriate service levels for their customers when Jonathan became distracted.

Jonathan "I had a meeting the other day with Cell Co, what do they do, what are their service levels for Viking and all that sort of stuff. Anyway, one of the things that scared me was... oh just to come back to that later, I've got to talk about something else in a minute but erm, well, this Pet City spin off, and I'll mention this cause I think it's gonna be relevant, REALLY relevant to Colour Scheme and this service level thing. I mentioned earlier that they've got us, err.... Have I mentioned this here. I don't think I have. OK. I was sitting down with whatshisname at err Pet Superstore.

Jonathan then spends time describing the possible deal Colour Scheme could enter into with the owner of Pet Superstore to supply his new venture Craft Superstore.

2. The board are discussing the role of IT in their operations management and interfaces with the customer. Jonathan makes the following contribution.

Jonathan "With all due respect our world at the moment isn't benchmarking is it. Anyway, you all heard the story about the Wallmart order didn't you. Oh well, that was where we didn't get, we didn't.... well, they were doing all this cost saving in January and we didn't get orders from them for a month till the first week of February when we get 150 000 of an order on the first Monday of the month with a 3 day delivery time. Andrew phoned and said '3 days, come on that's not fair you haven't ordered for a month and now you give us a 50 000 dollar order. Can we have some more time' and they said 'you can have 5 days'

This prompted Jackson, Alun and Adrian to spend the next few minutes arguing about IT connections with customers that would prevent this sort of occurrence. This then became a discussion about how, in order to have this form of IT system, staff would need to be trained and they haven't got a personnel director so training isn't important enough in Colour Scheme. All in all this distraction lasted over ten minutes.

One of the most interesting aspects of the two routines that have just been described, was that the other directors allowed them to happen. When Alun and Adrian were arguing the others would allow them to battle for several minutes waiting for Jonathan

to intervene. Also, when Jonathan was story telling no-one would challenge the propriety of sharing this information in the middle of an already lengthy meeting. The routinised behaviour of not contributing, of not stopping the other routines from continuing was in effect a third routine; withdrawal.

Especially prone to saying nothing and allowing other routinised discussion to continue were Jackson, Robin and Clive. Overall Robin contributed just over 1% of the total discussion of the strategic planning initiative. This extremely limited contribution is likely to have been in some way attributable to his breakdown; either because he had been out of circulation and had little to contribute, or because the group environment was creating anxiety for him. Either way, his non contribution was mirrored in the other agenda item analysed where his contribution made up just over 5% of the total discussion time. Jackson too had a tendency to stay quiet rather than act to prevent the others from distracting the meeting from its purpose. He had spoken at length during his first interview of his frustration at the conduct of board meetings, being especially aggrieved at their length, the amount of irrelevant discussion, the continual interruptions and the general lack of control. So much so that he was often not sure if a decision had been taken by the board. He jokingly claimed to have to wait to see the minutes to see what the decision they had taken was. Jackson made references to being sucked into the lack of discipline, he enacted this disapproval by refusing to be a part of the indiscipline and withdrawing.

Clive's withdrawal from engaging with either Alun, Adrian or Jonathan appeared to be based on his general feeling of vulnerability and almost of being bullied.⁶ This was apparent in the comments he made in his first interview. Clive's rationale seemed to be; there's almost no point contributing as you'll just be shouted down. So in his case, his withdrawal could have been based on his tendency to slip into a defensive mode of thinking that in turn may have prevented him from commenting and in some way, protect him. For Jackson, the tendency to withdraw was based on his disapproval of the other's behaviour and in a different way he too was protecting himself from being drawn into what he called, the indiscipline of the Colour Scheme board meetings.

Whatever the reason for their withdrawal, the repeated tendency of Jackson, Robin and Clive not to comment, contributed to the persistence of routinised behaviour. This dysfunctionality may in turn have distracted the board from their discussion of the strategic change program.

In summary, in Colour Scheme there was a tendency for board room behaviour to be less to do with individual members' cognitions about their strategic issue and more to do with their routinised, familiar ways of interacting together. In one sense, this fitted the basic statement of proposition III shown in the box below.

⁶ This may have been a *trait* effect as opposed to a *state* (context) dependent effect, i.e. a function of Clive's personality. However, as he refused to complete the personality questionnaire no distinction could be made.

Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their *shared social schema* of how to interact during team meetings. This distributed knowledge allowing the team to work as a cohesive unit that is able to reach agreement.

Even though Colour Scheme's board did not reach agreement, the compelling evidence just shown suggests that much of the board's interaction could be described as routine, predictable and expected. It may have been that the prevalence of this routinised way of interacting in Colour Scheme actually prevented them reaching agreement as opposed to facilitating as was the case in University Business School. In line with findings of this case proposition III was amended as shown below.

Proposition IIIb

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their *shared social schema* of how to interact during team meetings. This distributed network of knowledge may or may not assist the team in the construction of agreement.

5.6 Proposition IV

Proposition IV argued that neither micro level issue based cognition, nor collective cognition in the form of a shared social schema accounts for behaviour in the group environment. Other variables may intervene in the relationship between thinking and behaving. Proposition IV is shown in its basic form (i.e. as initially generated from the pilot case) in the box below.

Base Proposition IV

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns that are motivating team members behaviour and contributions to discussions in team meetings; e.g. political motivation.

The analysis of the meeting transcript revealed that much of the behaviour (although not collective as agreement was not reached) exhibited during Colour Scheme's board meeting was routinised, expected and predictable. Consequently, proposition III fitted the data well. However, there was behaviour exhibited during the meeting that was in fact non routine, somewhat surprising and that proposition IV was able to account for. This was Clive's contribution to his and Adrian's collective dominance of the agenda (the non influential group dominating discussion). This was surprising, in that Clive's routine tendency (along with Jackson & Robin) was to withdraw and remain quiet. Instead, Clive was vocal and frank in his views about the strategic change program and in particular, he was MOST concerned with the working group reports and the personal attacks on his record as a successful Sales Director.

The interesting question in terms of developing proposition IV was to ask *why* Clive felt driven to break with routine and second *how* he was able to achieve this. In response to the first question, Clive, as discussed earlier was under a great deal of pressure at the time of data collection. It was suggested earlier, that on some level, he was aware of the threat to his position and that this knowledge and the anxiety it produced, was leading Clive to interpret the working group reports as personal attacks on his performance. It is conceivable, that Clive would have felt in many way *compelled* to respond to what he perceived to be attacks from sub-ordinates and outsiders. In response to the second question; *how* was Clive able to achieve the domination of the discussion, several explanations were generated.

First, Clive was not alone in his view that change should not taken place; Adrian agreed with him. Collectively they dominated the discussion. Although Clive was routinely withdrawn, Adrian was not and his vocal objection to the strategic change program delivered a vehicle of objection to Clive as well. Second, at least two other directors were routinely withdrawn (Jackson and Robin) and would not be expected to intervene to prevent Clive or Adrian hijacking the agenda. Their non intervention allowed Clive and Adrian more airspace. Third and finally, Jonathan and Alun were also the victims of their own dysfunctional routine behaviour in a sense, as they both tended to be vocal. As the accounts shown in section 5.5 show, they both had a tendency to be *distracted* and drawn into debates. Consequently, once Clive and Adrian had raised their views and even in the face of the prevailing opinion of the influential board members did not back down, Alun and Jonathan were drawn into a debate they did not wish to have.

However, the strategic change program was an important issue in Colour Scheme at the time of data collection and it is unlikely that an individual as powerful as Jonathan was would have allowed Clive or Adrian to have halted its progress in anyway. So, even though they dominated the airtime at the board meeting, they did not appear to have effected his view to go ahead with major structural change in the executive layer of the business. In a sense Jonathan *indulged* Clive's drive to voice his views.

In summary then, although proposition III best fitted the data collected in Colour Scheme, there was evidence to suggest that in the case of Clive at least, the distributed knowledge of how the board ought to interact with one another (routine behaviour), was *not* dominating his desire to state his own views of the strategic change program during the March 1996 board meeting. Instead, Clive was in a sense *compelled* to comment based on his own personal situation at that time. In addition, the usual *withdrawal* of Jackson and Robin, combined with the tendency of Jonathan and Alun to be easily *distracted* and the certainty Jonathan had that the change program would go ahead inspite of Clive's views; i.e. he was allowed to have his say or *indulged*, explained how Clive's anti-change views dominated the agenda.

Proposition IV stated neither collective (overlapping) micro level issue based cognition or collective cognition in the form of a shared social schema could always account for behaviour in the group environment. Other variables may intervene in the relationship between thinking and behaving. In this case, it was shown that in fact individual

circumstances had an important effect. Consequently, proposition IV was revised to become proposition IVb capturing the findings of the first two cases. This amended proposition is shown in the box below.

Proposition IVb

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns e.g. political motivation or personal circumstances, that are motivating team members behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it.

5.7 Summary and Selection Criteria for the Final Case

This case was designed to test propositions IIb, III and IV. Colour Scheme was selected as it represented a TMT who were, as a result of their longevity as a team, likely to both overlap in terms of their views on their strategic change program and agree. The agreement reached in Colour Scheme was expected to be in the main the product of the most influential team members; Jonathan, Alun and Jackson.

The events that unfolded in Colour Scheme revealed that directors did overlap and formed two groups of opinion. However, these were in direct opposition. The board were unable to reach a decision during their March 1996 meeting and, the views of the least influential directors (Clive and Adrian), dominated the discussion but not the outcome (i.e. Jonathan implemented structural change inspite of Clive and Adrian's objections). Consequently proposition IIb clearly did not fit the data.

In fact proposition III when amended as IIIb fitted the data best. The events during the board meeting were best accounted for in terms of routine behaviour: a shared social schema of how directors ought to interact during Colour Scheme board meetings. This schema manifested itself in three routines; (1) locking antlers, (2) parenting and (3) withdrawal.

Even though proposition IIIb fitted the data collected in Colour Scheme, the dominance of the less influential directors was not accounted for. In particular Clive, whose normal routine was to remain withdrawn. His compulsion to comment and the rest of the directors acceptance of this, was suggested to be the result of individual, group and environmental dynamics that were overriding both issue based cognition (on the part of the influential directors) and the shared social schema. Proposition IV was amended to IVb to account for the finding that personal circumstances, as well as political motivation, may override issue based or distributed cognition (shared social schema) and that this will only occur if other team members allow it (either unconsciously as was the case in University Business School or consciously as was the case in Colour Scheme).

It is important to note that the inability to arrive at a decision, the prevalence of behavioural routines and Clive's personalised dominance of board room agenda may have been the result of Colour Scheme's board being a dysfunctional team i.e. they

simply did not work well together and therefore would not be expected to converge cognitively, reach agreement and be task (as opposed to relationally) focused. This point is argued fully in Chapters Seven, Eight and Nine.

It was important in the third case (as it had been in the second), to find a team that would be likely to reach agreement and converge in order to fully test proposition IIb. Two criteria used. First every effort should be made to select a *functional* as opposed to *dysfunctional* team i.e. likely to converge. Second, the research design ought to allow sufficient time for agreement to emerge i.e. not just access one meeting but allow for the incremental development of consensus. In addition, a team that were essentially different from Colour Scheme were required to test some of the developing ideas in propositions IIIb and IVb.

Construct Chemicals, was selected as the third and final case. This team was different from Colour Scheme in that it was a new team. In addition it was a public company (as opposed to a family business) and part of a major multi-national organisation. Construct Chemicals were anticipated to be a *functional* and *convergent* team on four grounds: (1) they had a new MD who had been recruited as a high flyer with a past record of success; (2) they had a management consultant working with them as part of their TMT; (3) they had the benefit of the training, support and the professionalism required by their parent organisation; (4) they were already engaged in a program of major change and were less likely to be making political objections to the concept of strategic change *per se*.

The next chapter, Chapter Six, now presents the case of Construct Chemicals. Chapter Seven offers an interpretation of the case in terms of propositions IIb, IIIb and IVb.

CHAPTER SIX

Case Study Three: Construct Chemicals

6.1 Introduction

This chapter presents the third and final case of the research: Construct Chemicals. The findings of the analysis described in part in chapter three and in more detail in this chapter, are discussed here. This case is presented in a different form from the two previous cases. That is, this chapter presents the *case*; i.e. the events that occurred in Construct Chemicals over the field work period. And the following chapter, offers an interpretation of this case in terms of the propositions carried forward from case study two (Colour Scheme) and those that emerged from the analysis of data collected in Construct Chemicals. This format is used simply because of the size of the case. There was four times as much material collected in this case compared to the previous two. Consequently, a chapter that both presented findings and explored propositions would have been rather cumbersome.

In this chapter, there are several sections that gradually build a cognitive account of several management team meetings that took place in Construct Chemicals between February and May 1996. In addition, the overall structure of the chapter shows the continuing development of the propositions (IIb, IIIb and IVb) that were presented at the end of the Colour Scheme case (Chapter Five).

This introductory section re-states and clearly operationalises propositions IIb, IIIb and IVb and the patterns that may be expected if they were to fit the data collected Construct Chemicals. Section 6.2 gives background information on Construct Chemicals, its TMT and the strategic issue upon which they were expected to be in agreement during the fieldwork period (Feb-May 1996). Section 6.3 recapitulates propositions IIb, IIIb & IVb and the methodologies used to test them. Section 6.4 presents a summary of the entire four months of interview and meeting data. Section 6.5 offers a brief summary of the chapter.

Restatement and Operationalisation of Propositions IIb, IIIb and IVb.

This, the third, final and most complex case of the thesis, carries forward and tests the three propositions that emerged from the analysis of the data collected in *both* University Business School and Colour Scheme. Proposition IIb fitted the data collected in the first 'pilot' case but was not able to account for the data collected in the second.

Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

In case one, although this proposition fitted the data there were patterns that it could not account for. In case two, Colour Scheme, it did not fit the data as the board were unable to reach agreement in the meeting. Nevertheless, outside of the meeting, Jonathan implemented his plan anyway with Alun, Jackson and Robin's clear support. This proposition was carried forward to this case for two reasons. First Construct Chemicals was selected as a potentially *functional* team and therefore could be considered to be likely to converge / agree about their strategic issue. Second, the data in this case was collected *longitudinally* and this could allow time for agreement to emerge incrementally. This was a change from the design that had been used in the first two cases where only one meeting was observed, this giving consensuality only one opportunity to emerge.

Proposition III was first put forward in the pilot case to account for data that fell outside of the explanation IIb was able to offer. It was then carried forward to the second case where, in its amended form, it was found to offer the best explanation of the data collected. This amended version of proposition III is shown in the box below and has been labelled proposition IIIb.

Proposition IIIb

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level, issue based cognitions, their behaviour and contributions to discussion in team meetings could be the product of their shared social schema of how to interact during team meetings. This distributed network of knowledge may or may not assist in the construction of agreement.

Proposition IV was able to account for the pattern of behaviour of one informant in each case. In University Business School Lesley's behaviour was accounted for as political, whereas in Colour Scheme, Clive's non routine behaviour was attributed to his anxious state at the time of data collection. Proposition IV was slightly amended to capture the pattern found in Clive's data and is shown as proposition IVb in the box below.

Proposition IVb

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other concerns e.g. political motivation or personal circumstances, that are motivating team members' behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it.

All three of these propositions were tested in this third and final case which was selected as an appropriate context for several important reasons. First a top management team needed to be accessed that would be likely to arrive at agreement in order to offer a full test of proposition IIb and a comparison to the pilot case. Following the experience interpreting the data collected in a dysfunctional team and their inability to arrive at agreement in Colour Scheme, a team who were likely to be functional (and therefore possibly converge) were considered to be potentially extremely useful. Construct chemicals were a new team, part of a major multinational organisation and anticipated to be functional on the following grounds: (1) they had a new MD who had been recruited as a high flyer with a past record of success; (2) they had a management

consultant working with them as part of their TMT; (3) they had the benefit of the training, support and the professionalism required by their parent organisation; (4) they were as a TMT already engaged in a programme of major change and were unlikely to be making further objections on political or personal grounds to the concept of strategic change per se; (5) there was a clear and overall target given to them by their parent organisation with a limited time in which to achieve it. Fieldwork began in February 1996 and ended in May 1996, with regular contact being maintained with the team until Jan 1997.

6.2 Background Information on Construct Chemicals.

The Research Site.

Construct Chemicals is a £ 25 million business that employs approximately 280 people. They manufacture chemical products to supply the construction industry. They have four key product areas (sealants, resins, powders and admixtures) within which they supply a vast range of individual products. The company is the UK division of an international company which in turn, is a wholly owned subsidiary of a major multinational organisation. Construct Chemicals was formed with the merger of two competitors in 1991. At the time of merger the company had fifteen manufacture, distribution and management sites in the UK. Many of these were duplications and a gradual programme of closure has led to the current structure of manufacturing and management located on one site in Lichfield, with just four distribution sites.

Construct Chemicals UK had suffered the unfortunate reputation in the years since the merger as the *lame dog* of Construct Chemicals International. When the fieldwork commenced, they had a badly organised system of manufacture and distribution and had been making consistent losses for some years. During his first interview, the newly appointed managing director (Aden Stanwick) suggested that there was a certain degree of learnt helplessness embedded in the management culture of Construct Chemicals. It was his concern that, via the stories the senior executives told, this had filtered down the organisation and manifested itself in lower management levels in the form of a vigorous blame culture that inhibited cross functional communication and support.

At the time the fieldwork began, Construct Chemicals UK rated themselves as having the 3rd or 4th largest share of the European market. They saw themselves as being hampered, as were their other major competitors, by the huge number of small maverick Operations that offered small product ranges at unmatched prices. A report produced by Mike Foster the Sales and Marketing director, showed that in fact, the construction chemicals market had reached maturity and there was little or no opportunity for growth. All the competitors in the market place were struggling to find sales. Gains in market share were derived from cost based aggressive competition.

The fortunes of the construction chemicals industry were intertwined to those of the construction industry as a whole. The UK suffered dramatic shake out in early 1992 forcing competitor numbers to be rationalised across the board. However emerging markets in the Far East, Arabia and Eastern Europe showed great potential for growth

and Construct Chemicals were hoping to have first mover advantage. In addition, the recommendations of the Latham Report promoted long term partnerships between suppliers e.g. Construct Chemicals and construction companies such as Balfour Beatty and Mc Alpine. Construct Chemicals had an attractive offer in this market place as they are backed by the financial support and the corporate infrastructure of their parent organisation.

The Informants

In 1996 the top management team of Construct Chemicals UK had six directorial positions; MD, HR, Sales & Marketing, Finance, Operations and Technical. At the time of data collection the Operations directorship was being temporarily filled by the MD Aden Stanwick along with the assistance of a consultant from a major consultancy firm, Malcolm Stanton.

The current MD, Aden Stanwick, was the third to hold the position post merger (only a 5 year time period). His immediate predecessor had left the organisation suddenly after suffering a nervous breakdown. Aden Stanwick, who already worked for Construct Chemicals International sitting on the main board as director of the Far East, asked for the job of MD of the UK company, having what he described as "an affection for the company" and "a deep desire to see it achieve its profit making potential". He was given that position along with the directorship of Europe and this meant he retained his seat on the main board of Construct Chemicals International.

On becoming MD of the UK company, Aden had immediately removed both the Sales Director and the Operations Director from the management team. The poor performance of both of these individuals had been noticed at main board level, so Aden was aware of the problem before taking up his appointment. Aden took control of Operations and, after two months, appointed himself and Malcolm Stanton as acting Operations Directors. Malcolm was contracted to this role for three days a week as well as completing his wider consultancy role of finishing the last of several factory moves from London to the main site in Lichfield. At the commencement of data collection (Jan. 1996), there was no recruitment strategy in place to fill the vacant Operations directorship. Indeed, the new Operations Director did not take up his position till September 1996; some nine months later. The vacant position of sales director was filled by Mike Foster the existing Marketing director. This created a powerful directorship (Sales & Marketing) for this young executive, with control of the largest number of employees within the company.

In theory, all the directors held an equal weighting in the structure of the management team; that is, they were all direct reports to Aden Stanwick. However, in terms of size of budget, number of employees and current projects on the UK company's agenda, the Sales & Marketing and Operations directorships were the highest profile. The positions, ages and lengths of tenure of each of the directors are shown in table 6.1

Table 6.1 Construct Chemicals UK's Management Team: Positions, Lengths of Tenure & Ages.

Name & Position	Age	Tenure on UK TMT	Tenure in Construct Chemicals
Aden Stanwick MD of Construct Chemicals UK, Acting Operations Director European Regional Director of Construct Chemicals International	44	5mths	10 years
Carl Kennedy Technical Director of Construct Chemicals UK	49	5 years	17 years
Mike Foster Sales & Marketing Director of Construct Chemicals UK	33	7 mths	5 years
Malcolm Stanton (<i>Consultant</i>) Acting Operations Director of Construct Chemicals UK	39	N/A	N/A
Simon Stephens Finance Director of Construct Chemicals UK	45	3 years	3 years
Steve Williams HR Director of Construct Chemicals UK	48	6 years	6 years

There were several important relationships within the management team. The first of these was the relationship between Aden and Carl the technical director. They were both long term employees of Construct Chemicals. They had worked together in the past, knew each other well and shared a great sense of loyalty to, and affection for, the Construct Chemicals group. In addition, they were clearly the gatekeepers of industry knowledge; old stories of past triumphs and failures, and were both well connected through out the Construct Chemicals group and their parent organisation as a whole.

Aden "Carl and I go back a long way we were both in the old group (pre merger) together. Carl's sort of been around the company as long as, no, longer than me. He sort of epitomises the spirit of the company in many ways. He's very action orientated, get it done kind of a guy. He's a really good team player, he works well on teams. I feel close to him really because I'm here to talk to him we talk about things, I mean you know we're face to face managers."

"Carl is the sort of you know, absolute, ultimate ex-pat' type. He'd go to Dubai and make friends in five minutes. I've got an older brother like Carl. He's very much an older brother type in a way. He's very much like my older brother, I can't,... I mean I'm not naturally an extrovert like he is; the life and soul of the party. It takes me years to make friends and in the business world people sometimes think I'm unemotional because of that. But I'm a big Carl Kennedy fan, always have been. There's just this strong history that goes back a long way."

Carl "In terms of closeness, I feel to closer to Aden than to anyone else on the management team, largely because I've known him for many years. I suppose I have in the past and do now work very closely with Aden. He's probably the most available and face to face MD I've ever worked with.

I respect Aden's views. We've had some real serious scraps and I'm talking earth shaking fundamental scraps and both climbed out of them and built our relationship and because of that I respect him. He's a very caring people person

whilst still being reasonably ruthless. I've never caught him out on a lie and he gives up himself in his decisions, you can see his belief."

A second key relationship was that between Aden and Mike the Sales and Marketing director. Mike was something of a protégé of Aden's. It was Aden who had appointed him in his first junior marketing position and it was Aden who had given him the combined directorship of sales and marketing. Mike was Aden's *right hand man* in whom he confided. Aden took Mike along with him to important Construct Chemicals International meetings. In addition, he gave Mike (along with Carl) an appointment to a high profile European working group to which he could have appointed any of his UK directors. Aden referred to Mike as a *super star*, who had both the intellectual ability and the persona to succeed.

Aden "Mike has this unique blend of intellect and personality. I knew he was good on the personality side, the intellect is what's been a surprise. Just to see how good he is intellectually. So he is you know, no question, he's potentially you know a superstar. I really see him as my right hand man"

Mike's very determination to succeed was something that worried other members of the management team, who were not as comfortable with him. Carl in particular openly expressed his opinions.

Carl "Mike has a killer instinct, he's certainly the most ambitious bloke on the management team, he'd sell his granny for a shilling, in the business sense I mean. I don't trust him at all, he's got a good mind and good clear objectivity so I do listen to what he's got to say. But I'm a bit more guarded because he stores things away and uses them later. I suppose we all do really, but Mike hasn't got that good at it yet so we know he's doing it."

Interestingly, though Carl and Mike showed sustained overlap in their views of the strategic issue mapped over four months whereas Carl and Aden did not. This would indicate that overlap does not necessarily grow from closeness, trust and friendship. However this is discussed in much greater detail in the sections that follow.

In addition to Carl and Mike, Aden also saw a strong link between himself and Malcolm; the consultant who he invited to sit on the management team as joint 'acting' Operations Director. Aden discussed how he would have liked to recruit Malcolm to fill the position permanently.

Aden "With Malcolm it's like,... well I talked to him early on about doing this job full time. He basically, in a nice way, he basically said he wasn't interested because of you know where he lives. He's extremely amiable and he's clearly focused on what he's doing. He sort of bangs his drum, you know 'measure it, improve it'. He's a crucial catalyst for getting all these things in place. He talks a lot of sense. It's a very important relationship now but its a time related thing, hopefully it will become less overtime."

Simon and Steve were the two members of the management team who were essentially on the periphery of the tight relationships between Aden and Carl: Aden and Mike and Aden and Malcolm. Simon and Steve's were very similar situations. They both travelled long distances to work (over 90 minutes each way and often in the same car); they had both been based and isolated, at the run down, and demoralised Acton Plant; and eventually both lost their jobs.

Aden saw Simon differently from other members of his team, he believed he was 'tougher to influence than the other guys'.

Aden "He's difficult to describe. He's the sort of guy with his own sort of agenda. He seems to be less influenced by other people, you know even me, his boss. Umm, I think he's a guy that was really bruised by the experience of coming to this company (sometime in 1993). Because he came into the company and what he saw was you know a very badly run company in his opinion and he voiced that at management team meetings. The others shut his message up, they didn't want to hear it and he was shouted down. It was a minor issue, expenses or something petty but obviously it was a manifestation of some kind of vent up frustration in him. So Simon has had a hard time cause he came in as the outsider and started to criticise."

Simon recalled the same rocky period in his introduction to Construct Chemicals in 1993. However, in his recollection the debate he tried to force, it had been about the quality of management in Construct Chemicals and not expenses, as Aden had heard second hand.

Simon "I was always the odd one out when I started. Because I was inheriting such a mess it was always perceived for a long time that I was making a mess. I tried to force a debate at the management team meeting. Catherine Allen (previous MD) wouldn't make eye contact with me at all, Carl wasn't prepared to have the discussion either and Steve was just sitting there. So as usual the important subjects for debate just weren't coming to the top of the pile. I have tried to push ideas forward in the past and been knocked down for it by other people on the management team. But this is now my fourth turn around job so you learn to develop a thick skin. Now I feel that it's right to push things only when I feel right to do so and not just go with the flow. Aden is much more open minded though so you never know. If you can't get people to agree eye to eye you can always broker a compromise. I've taken that view and tried to push and push, but I have found I need to cease pushing and hope there's more agreement. But I am more comfortable with the way things are going, the way people are working together, relationships are much better than they used to be."

Some months after the fieldwork had ended, Simon Stephens was removed from his position as finance director. Although Aden made the decision to remove Simon in January 1997, he didn't actually leave until June 1997 with his replacement not starting until September 1997. Aden filled in as acting finance director in the intervening period. Aden decided to remove Simon because of his *"lack of proactive management"*, he felt that Simon *"crunched numbers but didn't direct the finances of the company"*. Although

Simon's removal from the team was not seriously considered until after the period of fieldwork ended, it became increasingly apparent over the months that his and Aden's relationship was floundering. This is specifically discussed in later sections. The following quote taken from Aden's first interview demonstrates that even at the beginning of the fieldwork period, he had an awareness that there had been some problems with Simon's performance. However, Aden also stated at this time he had personal faith in Simon's ability and had decided to keep him on the team. Aden's behaviour during the four meetings observed suggested otherwise. This contradiction is again discussed in later sections.

Aden "There have been doubts about Simon even to the point where Catherine (previous MD) held back his pay rise and all the rest of it. And that of course, I mean in a company like this (referring to parent organisation), that gets around. So he's had a bit of a bad reputation, well not a bad reputation as such but there are question marks about him."

Others had also noted that Simon had appeared to have had problems in the past but was beginning to change.

Carl "He (Simon) is a very difficult guy to get to know. I am beginning to change my view of him a little but for the first year of his job he didn't strike me as a team player in as much as every single guy and girl he'd got in his team he wanted to get rid of. I mean I can't believe that everybody in the army never stepped but Johnny. In this case Johnny was Simon and that rattled me. I tended to deal with him on a purely professional level because I was concerned about his interpersonal skills - very critical and not very supportive. Many of his team would have cheerfully lynched him. He's changed. He's busy building his own team at Lichfield now so I'm holding judgement for now, we'll see how he does with that."

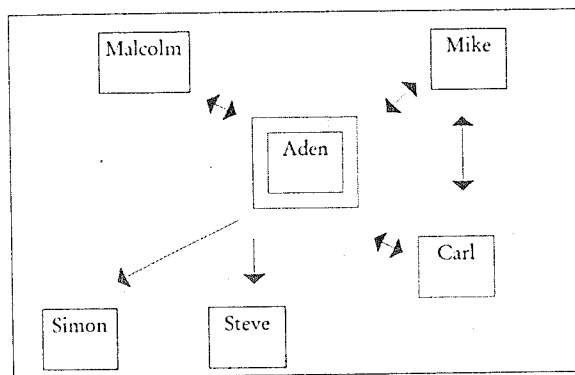
Another significant change that occurred in the membership of the management team during the fieldwork period, was Aden's decision to remove the entire IIR function. He considered the position of HR director redundant at this level and consequently, in September 1996 he removed Steve Williams from his position. Steve took a position at Construct Chemicals International assisting the international HR director, which to all intents and purposes was a demotion. In fact, Steve lasted just a year in this position (till September 1997) before his contract was terminated completely. At the outset of the fieldwork, Aden shared that he had heard worries about Steve's performance before he had arrived at the UK company.

Aden "With Steve I didn't really know what to expect. I'd met him a few times but didn't actually know him very well. I've been talking to other people, and Craig Bennett (Construct Chemicals International HR Director) was quite worried about him and the job he was doing and I kind of had a feeling I was going to have a problem with him. But now I'm open minded about it. Craig would make comments like he's read too many management books, not enough practical experience and I suppose I was tinged by what he was saying. But he's the kind of guy who'll come on the phone on a Monday morning and say 'how was your weekend, what did you do' you know. He may be, but I don't know, but I kind of

get the feeling that Steve's not naturally an easy person. I think he's worked hard at it."

The overall picture of power and influence relationship within the team is shown in figure 6.1 below. As was the case on University Business School and Colour Scheme, the direction of influence is shown by the direction of the arrow. A mutually influential relationship is shown by a double headed arrow. Only when an individual recognised that they tended to be influenced by another person was an arrow included. So team members who thought they had influence and did not are not reflected in this figure.

Figure 6.1: The Team's Network of Influence.



As in the previous case, Eysenck's EPQ-R was used to approximate each directors' stable personality traits in terms of extroversion, toughmindedness and emotionality. The EPQ-R manual (Eysenck & Eysenck, 1991) was used to make comparisons between the scores each director achieved on the these three dimensions and those suggested to represent the population norm. The profile that was developed for each director is shown in table 6.2 below.

Table 6.2: The Directors' Personality Profiles According to the EPQ-R.

	<i>Psychoticism</i> <i>Toughminded</i>	<i>Extraversion</i>	<i>Neuroticism</i> <i>Emotionality</i>	<i>Description.</i>
Aden	Very Low	Moderate	Very Low	<i>Very low score on toughmindedness indicates a tendency to be very sensitive to others. However, although highly empathetic, the moderate extraversion score combined with a low emotionality score may mean that this individual comes across as reserved and unemotional. This would be likely to create frustration and confusion for someone with such a low toughmindedness score: i.e. very sensitive to others.</i>
Carl	Low	Very High	Very Low	<i>Low toughmindedness indicates some sensitivity towards others, and a very low emotionality score indicates stability. However, this individual had an extremely high extraversion score. It is likely that this characteristic would be that which others around him recognise and respond to.</i>
Mike	Low	Very High	Low	<i>Low toughmindedness indicates some sensitivity towards others, and a low emotionality score indicates relative stability. However, this individual had the maximum possible extraversion score. This individual has a compelling desire to experience life in the external world, is likely to desire to be around others and work well when given the opportunity to share ideas and opinions. Others could interpret this eagerness in a variety of ways.</i>
Malcolm	Very Low	High	Low	<i>Very low score on toughmindedness indicates a tendency to be very sensitive to others. High extraversion score combines with this to present the profile of someone happy to be actively part of and associate with the world around them. Finally the relatively low score on emotionality indicates that this individual is fairly stable and may appear calm and unworried to the outside world.</i>
Simon	Low	Moderate	Very Low	<i>Very low score on toughmindedness indicates a certain tendency to be aware of the needs of other people. This individual also had a very low emotionality score and a moderate extraversion score. This is likely to result in this person being seen as reserved and unemotional. This would be likely to create frustration as his toughmindedness score reveals a concern for others.</i>
Steve	Moderate	Low	Low	<i>With only a moderate toughmindedness score, this individual has the lowest capacity within the team to be sensitive to other people around him. He also scores as an introvert, preferring to live in the internal world of ideas and this combined with his low emotionality score indicates that this person could be relatively distant from others.</i>

The Strategic Issue.

Construct Chemicals UK had been set a performance target by their parent group to increase their turnover from 25 million to 30 million. Their parent organisation considered 30 million to be the minimum sustainable turnover to create the critical mass

of business needed in the UK sector. The UK company was also in a loss making situation which demanded a rapid turnaround.

The strategy to increase the critical mass of business and move from loss into profit had two core elements. The first was to take cost out of the manufacturing and distribution process, hence the movement of production units on to one site and the employment of Malcolm Stanton's firm as manufacturing process consultants. This project was referred to as *Operation Darwin*. The second element of the turnaround was to re organise the sales strategy to aggressively gain share at the expense of competitors. This project was referred to as *Operation Mayflower*.

The issue that was tracked over four months of management team meetings was *Operation Darwin*. This was ranked by the MD, Aden Stanwick, as the most important issue facing the UK company at the time of data collection. It was commonly described as "the problem in operations", referring to years of ineffective management. Traditionally Construct Chemicals UK had been dominated by operations, its power base resided with its 82 members of the 220 strong work force. The Operations function was fundamentally inefficient with manufacturing methods, production planning, supply chain management and distribution systems that had been classified as well below industry standard by Malcolm Stanton's consultancy firm.

One of the more serious difficulties was a breakdown in communication between Sales and Operations which resulted in a complete lack of a proper system of sales order planning. Order deadlines were consistently being missed, leaving sales staff to contend with irate customers. As problems began to accumulate the inadequacy of the staff in this function began to emerge. There was no professional supply chain management, or indeed any basic measures of performance upon which to forecast abilities to reach target outputs.

Because Operations Management at Construct Chemicals was so inefficient and the cost of production so expensive, their products were invariably premium priced and this tied their hands in terms of available strategic options. According to Mike Foster's report, stripping cost out of Operations would give Construct Chemicals UK considerably greater strategic freedom in an increasingly aggressive market place.

At the time of data collection, the programme to bring all the manufacturing units on to one site was well underway, in fact almost completed. New manufacturing cells (resins, sealants, powders and admixtures) were being set up at Lichfield under the supervision of consultant Malcolm Stanton. In each production cell new programmes of performance measurement were being introduced, in some cases new machinery was installed and the philosophy of total quality engineering (TQE) was being sold through out the Operations function.

This programme of change was being managed by Aden and Malcolm in their joint role of acting Operations Director. The other directors had yet to see the rewards of the changes taking place in operations. Products were still not reaching customers on time. All the directors were fielding complaints from customers but Mike Foster in particular

was taking the brunt of complaints. The quality of products on some ranges was also very poor, specifically a new promising product called *Exposeal 1000* had suffered. Carl Kennedy the technical director was frustrated as his technical staff were achieving good product quality in the laboratory but, even after extensive training, this was not being transferred onto the shop floor. Steve Williams was also involved in the Operations department. As HR director he had recently overseen a 60% turnover of staff to accommodate the factory moves from London to Lichfield. To achieve this turnover he had implemented a large scale programme of forced redundancy and had earned the nicknames 'Dr Mengele' and 'Killer'. Undoubtedly this process had taken its toll on Steve but he was extremely guarded on the topic. He was understandably very keen to see the rewards from his own programme of assessment selection and training of new employees. Finally the finance director Simon Stephens was concerned with recovering the cost of moving Operations on to one site. These costs included the training new employees, panic production i.e. double shifts and overtime to get product out and most crucially at this time the penalty clauses that were building up from failure to supply product on time. In short all the directors were paying close attention to the progress of project Darwin to turnaround the Operations department, which was widely accepted as the key to their future strategic success.

6.3 Operationalisation of Propositions & Method of Testing.

In this final case study, the three propositions generated in the first case and refined in the second, were tested. Each is now operationalised to make explicit the expectations that were used to make sense of the data collected in Construct Chemicals. Following this operationalisation, the method used to test each proposition is described.

Proposition IIb that fitted the data in the first case but not the second, was generated from the MOC literature (Walsh et al (1988); Langfield-Smith (1992)) and the analysis of the first case. The basic form of this proposition is shown in the box below.

Base Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

As Construct Chemicals was selected as a potentially *functional* team that would be more likely to converge / agree about their strategic issue, it was anticipated that a certain pattern would emerge from the analysis of the data collected from the management team over the four month fieldwork period. That is, management team members were expected to overlap (share certain aspects of their thoughts about the problems in their operations management) before team meetings. This overlap, when shared by influential team members, was expected to form the basis of agreement emerging over time. Finally, at the end of the four month fieldwork period, it was

anticipated that the team could display one of two patterns: (1) tighter overlap based on the agreement developed overtime (Walsh et al, 1988); (2) or a dissipation of any teamwide overlap that had emerged during meetings over the four month period (Langfield-Smith, 1992). As the data collection was spread over four months it was expected that any incremental development of convergence and cognitive overlap over time would be relatively enduring. In short the pattern expected if proposition IIb fitted the data would be: dyadic or subgroup overlap at the beginning of the fieldwork, growing agreement based on the most influential team member's overlap, sustained teamwide overlap at the end of the fieldwork period.

Proposition III was first put forward in case study one to account for data that fell outside of the explanation IIb was able to offer. It was then carried forward to case study two where, in its amended form it was found to offer the best explanation of the data collected. This amended version of proposition III is shown in the box below and has been labelled proposition IIIb.

Proposition IIIb

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level, issue based cognitions, their behaviour and contributions to discussion in team meetings could be the product of their shared social schema of how to interact during team meetings. This distributed network of knowledge may or may not assist in the construction of agreement.

Again, as the TMT of Construct Chemicals was anticipated to be a relatively functional management team, any distributed network of knowledge of how to interact effectively as a team was expected to assist in the construction of agreement within the team over the four months of data collection. In addition, as the team were, in part, a new team (Aden had only just arrived as MD and Mike had been on the management team for only 7 months) and the distributed network knowledge of how to interact was not anticipated to be fully developed. In the previous two cases, shared social schemas within the teams manifested themselves in accurate role predictions of colleagues behaviour during informants' first interviews. And in the second case alone, in the prevalence of routinised (expected, predictable, regular) behaviour during the board meeting observed. In this third case, the longitudinal design was expected to yield a more complex understanding of distributed networks of knowledge shared amongst closely associating groups of individuals and their relationship to team decision making; specifically the ability to reach agreement. But once again, the social schema was anticipated to still be developing and routinised behaviour was not predicted to be as prevalent as it had been in the longer established Colour Scheme board. Consequently, in Construct Chemicals the expected pattern in the data would be: micro level, issue based cognition was expected to be more dominant in the discourse at team meetings and, in line with IIb, the most influential team members were expected to make the greatest impact in these discussions.

Proposition IV was slightly amended during the second case to capture the pattern found there as well as in the first case. Proposition IVb is shown in the box below.

Proposition IVb

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns e.g. political motivation or personal circumstances, that are motivating team members' behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it.

It was anticipated before data collection began, that this team would exhibit a high propensity to achieve a convergence of views during the fieldwork period and reach agreement regarding their important strategy to turn the Operations department around. It was predicted that the team would be a task focused team in which micro level, issue based cognitions would be closely reflected in the contributions directors made to management team meetings. However, this team was in part at least a new team, and the possibility that they were still in the early stages of development (forming & norming, Tuckman, 1965) was not ignored. If the team were still establishing roles and ways of working together, proposition IVb may fit the data better than IIIb. In this scenario, more of the team could be expected to be demonstrating the kind of behaviour in team meetings that betrayed 'relational', as opposed to 'task' based concerns; i.e. matching some of the behaviours that Lesley and Clive had displayed in University Business School and Colour Scheme respectively. Consequently, the pattern in the data collected in Construct Chemicals regarding proposition IVb was: a generally high degree of contributions to team meetings that closely reflect directors' micro level, issue based cognition, but the possibility of some 'relational' based effects as the team may still be in the early stages of development.

It is important to note that the data collection protocol followed (see Chapter Three) was not restrictive in any sense. That is, although the patterns in italics above were anticipated to emerge from analysis, a broad enough spectrum of data (i.e. unstructured interview and observation data) were collected to allow not only these anticipated patterns, but also others that were not expected, to emerge. This approach reflected the general philosophy of the research: even though propositions were being used to guide its development, it remained exploratory at heart.

In this longitudinal case, the data collection protocol followed remained relatively consistent with previous cases. That is directors were interviewed in between management team meetings as well as the meetings themselves being attended and taped recorded. In interview, each director was asked to share their views about the programme of change in their Operations department. The VCST was again used to represent the thoughts directors were able to verbalise. The VCST maps were also supported by interview transcripts. In total, four monthly management team meetings were attended and four interviews were conducted with each of the six directors (24 interviews, and VCST maps).

As this was the final case, the data analysis protocol was somewhat different from those previously used. It marked a progression based on the 'learning experiences' of the first cases with, where possible, improvements being made. The phrase 'where possible' is used as it is important to recall that access was gained to Colour Scheme and Construct

Chemicals at the same time (January 1996) and data collection at during the months of February & March 1996, was being carried out concurrently. This heavy time commitment to fieldwork ensured that the analysis of the Colour Scheme data did not begin until data collection in Construct Chemicals had been completed (May 1996). Consequently, some elements of the data *collection* protocol used in Construct Chemicals were not able to be changed in line with lessons learned from the Colour Scheme analysis. However, the data *analysis* protocol used was able to be amended and is discussed in detail below.

In order to look for evidence of collective cognition in the form of micro level, issue based overlap, the VCST maps needed to be reduced to their core constructs. In the previous chapter, it was noted in the final section how the VCST had not been entirely satisfactory in terms of offering a sophisticated representation of informants cognition. The complexity of the patterns that were anticipated to emerge from this the third and longitudinal case, were not expected to be adequately accounted for using the VCST representations. These were at times too simplistic and not reflective of the rich detail that was contained in the interview transcripts. To overcome this problem, the *Graphics COPE* mapping software¹ was used as a tool to assist in a re-map of each director's interview transcripts. The VCST map was used as a general template for this process, but distinct constructs mentioned in interview that were not present in the original VCST map were added to the new *COPE* map. Causal relationships were added when relevant. To take an example, for the purposes of illustration, given an explanation such as "*the reason our operations management is in such a mess is because of the poor quality of the staff in that area*", the two constructs in that statement; (1) our operations function is in a mess; (2) poor quality staff in operations, would have been linked with (2) causing (1). Each one of the 24 interviews and VCST maps were reworked to produce new *COPE* maps that were believed to be much more representative of the thoughts verbalised during interview and captured in the transcripts.

This use of *COPE* was not planned before data collection, but rather used to help make sense of VCST maps and interview transcripts during analysis. It is important to recognise that *COPE* was used more as a *data management tool* rather than a data collection and analysis package as it was designed to be. That is, it was used to help organise and display the constructs and relationships that were discussed during interview but not picked up by the VCST. Nevertheless, in adopting this approach, there were certain limitations. Because it was introduced into the research retrospectively, the *pro forma* that Eden & Ackerman (1998 pp. 286-298) detail was not followed in interview. Specifically, two important elements were lacking in this retrospective application of the *COPE* software. First, and related to the initial construction of the map, the informants were not able to assist in the construction of these maps, as is recommended by Eden & Ackerman (1998 p. 288). Specifically Eden & Ackerman note that uncertainty about the relationships between constructs can be resolved by asking the informant clarify what they mean, or believe to be the case. By constructing *COPE* maps retrospectively, the exact nature of the relationships between the constructs in

¹ Now called *Decision Explorer*, but the package used in this research was a *COPE* version.

informants' maps had to be interpreted by myself. Although not ideal, the VCST maps were available as overall templates indicating the major causal relationships that the informants themselves had noted during interview. Therefore the relationships I inferred in the *COPE* maps were for the most part, originated by the informants.

The second problem with the retrospective construction of these maps, concerned gathering a rich enough set of data to be available to properly analyse data using *COPE*'s analytical capabilities. In particular, contrasting or opposite poles, i.e. instances when a "...rather than ..." is, *implicitly* or *explicitly*, expressed" (Eden & Ackerman, 1998 p.290), were not listened for and picked up on in interview. If the use of *COPE*, with its theoretical base in Kelly's (1955) Personal Construct Theory which holds contrasting poles as centrally important to individual sensemaking, had been planned then the interviews could have been conducted appropriately.

The uncertainty about the accuracy of links between constructs and the completeness of the maps constructed (i.e. missing contrasting poles & a properly constructed hierarchy of argumentation) lead to a nervousness about over-claiming the sophistication of the maps generated by using the full range of analytical capabilities offered by *COPE*. Instead just one form of analysis was used on each map: domain analysis (Eden, Ackerman & Cropper, 1992).

To recap, the purpose of analysing the cognitive maps generated by combining the VCST maps, interview transcripts and *Graphics COPE* maps, was to establish the core constructs or key themes in the views each director held about their important strategic issue. This reduction process was achieved in this case by applying a standardised protocol to each VCST & *COPE* map and interview transcript. First a domain analysis was run on the *COPE* map. This revealed which were the most highly linked constructs. Second the interview transcript was used to note primacy of recall and repetition (i.e. first important theme an informant recalled and one which they repeated or referred to frequently during interview) thus allowing for the centrality of that theme to an individual's thinking to be inferred. Third a note was made of any particular urgency, keenness or emotionality. Finally, the VCST maps and the constructs that the informants themselves saw as important enough to commit to paper were noted. Where this triangulation of reduction arrived at different core constructs, a value judgement (based on my own knowledge of the informants and their context) was made to determine which could be reasonably assumed to be the most important construct(s). A summary of this process for each map (24 in total) is shown in appendix 6.

Once the VCST, *COPE* maps and transcripts were reduced to key themes, these could be used to assess the degree of dyadic or subgroup overlap between directors over the four month period. In this way proposition IIb could be tested.

In order to test proposition IIIb, where it was anticipated that: micro level, issue based cognition would be more dominant in the discourse at team meetings and, in line with IIb, the most influential team members were expected to make the greatest impact in these discussions, the meeting transcripts were closely analysed. Each informants' key

construct, at each time period, was used as a basis to classify their contributions to meetings as either being reflective or non-reflective of their views of the programme to change the Operations department as expressed in interview. Reflective meant in line with the key theme extracted from a director's map as opposed to being either counter-intuitive or unrelated. If a contribution was classified as reflective this would be supportive of proposition IIIb, i.e. micro level, issue based cognition was dominant. If contributions were found to be non-reflective, possible reasons were considered. In particular the possibility that a form of non-issue based collective cognition was operating amongst the team, i.e. a distributed network of knowledge of how to interact in management team meetings overriding issue based cognition. In addition, if this team were 'functional' (and able to converge) as anticipated, and the majority of their discourse was classified as reflective, the views of the most influential team members would be expected to dominate. This was assessed reasonably simply by noting which directors dominated the airtime and agendas at each meeting.

Finally, in order to test proposition IVb, where it was anticipated that: a generally high degree of contributions to team meetings that closely reflected directors' micro level, issue based cognition, would be found, as well as the possibility of some 'relational' based effects; the team may still be in the early stages of development. To test this proposition, much of the analysis for IIIb was used. That is, the reflectiveness of directors' contributions to each meeting had already been assessed. Those contributions that were considered to be non-reflective and in addition, could not be accounted for by a distributed network of knowledge of how to behave in management team meetings (role expectations, routines; social schema), were noted. I attempted to account for each of these instances in terms of other broader data that had been collected: (1) personality data; (2) background information; (3) network of influence within the group.

This section has sought to make propositions IIb, IIIb and IVb clear. In addition, the patterns that were anticipated in the data when each of these were tested have been made explicit. Finally the method of testing each proposition has been discussed, and problems highlighted. The next section will go on to present a summary of the analysed data from this case.

6.4 Construct Chemicals: The Analysed Data.

In this section, the data set analysed as described above is presented. It is the following chapter that *interprets* this data in terms of propositions II, III and IV. In this chapter, the intention is to simply provide a description of the data set as reduced by the process of analysis. Any interpretation of these events is intended to appear in Chapter Seven. However, in dealing with a case of this complexity and length, some element of interpretation had to appear in the descriptive section in order to ensure that the overall account made sense to the reader. Consequently, there are some instances when limited interpretation of the analysed data appears in this section and is then built on in Chapter Seven.

This section is in chronological order. The account begins with the first management team meeting attended, then moves on to the first round of interviews and the next team meeting etc. The overall structure of this section is as follows: (1) February management team meeting; (2) first round interviews; (3) March management team meeting; (4) second round of interviews; (5) April management team meeting; (6) third round interviews; (7) May management team meeting; (8) fourth round interviews.

Each of the meetings is summarised in three ways: (1) phases of discussion, length of each phase and key discussants; (2) general trends that emerged from a grounded analysis and (3) a comment on the reflectiveness of each director.

As has been consistently stated throughout this thesis, this is the richest and most useful case of research. The data collected is therefore very extensive. Although it runs to four times the size of the first case and is more than double the second, care has been taken to restrict the data presented to the key issues. This ensures that it does not become overly lengthy. So, for instance, the discussion of each individual round of interviews in this case is not as long as has previously been offered. This is not to say that the data is any less rich, rather the opposite, that an abridged version of the most salient patterns in terms of the propositions being explored is offered here.

The cognitive data collected during each phase of interviewing conducted in between meetings are written up in a familiar format. That is, following the previous two chapters, overlap between directors is shown in diagrammatic form with key themes listed in a table below. Finally exemplar quotes are used to give a richer impression of each directors' thoughts at that time.

(1) February Management Team Meeting - 15th Feb 1996.

At this time, the newly appointed partnership of Aden and Malcolm as joint acting Operations Directors faced their first management team meeting. All the production cells were running into problems with supplying product on time. Promised sales orders were late, overtime costs were high and Mick Rawlins (manufacturing manager in charge of all four production cells) did not seem to be coping effectively.

This meeting took place between 2 and 8pm and all directors were present. The meeting became confrontational when Operations was discussed. This was between 5:30 and 7pm when all the directors were tired. This meeting that was later referred to by three of the six directors as the 'stormy meeting', it had several flash points, all of which involved Aden in some way.

Phases of Discussion.

There were ten distinct phases of discussion that are shown in table 6.3 below.

Table 6.3: Key Phases of Discussion in Management Team Meeting One (Feb).

Phase	Topic	Discussants	Time Mins
1	Malcolm begins report on Operations by feeding back progress on 'the balanced score card' management approach they're trying to introduce	Malcolm supported by Aden	12
2	Carl and Mike begin to criticise operation's performance in general. Malcolm says he recognises mindsets in Operations have to change	Carl, Mike, challenged by Malcolm and Aden	18
3	Malcolm moves on to discuss the powders cell and a malfunctioning bagging machine that is holding orders up.	Malcolm	3
4	The other directors intervene, pressing Aden and Malcolm for answers. <i>Aden becomes aggressive</i> especially with Simon. Carl calms the situation.	Aden defending Operations from Mike, Carl, Steve and Simon's challenges	23
5	Malcolm uses Carl's intervention to move on to discuss the Resins cell	Malcolm	4
6	The recognition that things are not working well in Resins leads Steve to call for them to change staff in that production unit. <i>Aden responds aggressively</i> . Carl appeases the situation.	Aden in confrontation with Steve	15
7	Aden not keen to let the matter drop and discusses a lack of faith and trust	Aden confronting Mike	5
8	Malcolm moves on to discuss the admixture cell and the progress made there.	Malcolm	5
9	Malcolm continues to report back and moves on to supply chain management, jovial banter with Carl and Malcolm finishes his report back	Malcolm & Carl	3
10	In closing the discussion Steve tells Malcolm not to take their criticism personally. Simon makes a negative comments and <i>Aden responds aggressively</i> . Simon suggests the team takes a break. Aden, Mike and Malcolm all leave the room	Steve, Malcolm, Aden & Simon	3

General Trends.

Aden was the most dominant individual in that he was the most vocal of all the team members. Although Malcolm was leading the feedback about the progress of their efforts in the Operations department, Aden frequently intervened. On most occasions when other directors challenged the feedback, it would be Aden that responded. On all occasions of open criticism, Aden responded in a manner that he recalled as assertive, but the wider management team recalled as being defensive and aggressive. My naïve observation (this was one of my first encounters with the management team) noted in the fieldwork journal at the time of the meeting, was that Aden seemed aggressive and firm but not defensive.

Of the other directors, Mike and Carl were vocal but in different ways. Whereas Mike seemed to lead, or at least open periods of criticism, Carl appeared to be keen to pacify the flare ups that ensued. These usually occurred when, after some fairly direct challenging from Mike, Steve or Simon would contribute a brief comment supporting Mike's criticism of operations. It was in response to the comments from either Simon or Steve that Aden appeared to be especially aggressive. Although Steve and especially Simon said very little, they did seem prone to producing aggressive responses from Aden. In each case Carl would pacify the situation. The following quotes demonstrate Aden's responses to Simon and Steve.

Mike had been raising queries about the tardiness with which Operations were dealing with the suppliers of a bagging machine in the powders cell that had never properly worked when Simon intervened.

Simon "Which one individual is responsible for this ?"

Aden "(Aggressive) What do you want ! You want us to go and hold a Spanish inquisition on this ? (5 sec pause) I mean is that what you want us to do, I mean do you want us to go out and nail the person who ordered the wrong bag. We're now using the wrong bags and I got that from Andrew Cropper and I believe him. Do we want to go and have a witch hunt and you know nail the person who ordered the wrong bags "

At this point Carl makes a joke and the team laugh a little, this lightens the atmosphere. A few minutes later, when discussing problems in the Resins cell Steve makes the following contribution.

Steve "I would suggest that you do something like firing him (the cell manager) and that might actually do something to change the dynamics in there."

Aden "(Snapping) Sure Steve, you fire him without a plan in place for how we're going to run the resin cell the day he goes out of the door !"

Steve "(angry) Aden, I wasn't suggesting that we would get rid of the situation by firing him (the cell manager) I mean give me credit for thinking of a broader solution than that one event !"

Aden "(challenging) Well what else would you have us do then. You guys are not happy with what we're doing what else would you have us do ?"

Aden was not as openly aggressive towards Mike who actually made the most personal criticisms of the Operations department and the degree of trust he had in the management of it. Simon had said very little but had been jumped on by Aden, whereas Mike's comments seemed to be tolerated. Note the comments made in section 6.2: Aden thought Mike was a 'superstar' and he thought Simon was a 'potential problem'. Consequently, it is not surprising that Aden *attributed* negative intent to Simon's contributions and not to Mike's.

In general, the inter-personal communication between Simon and Aden emerged as problematic even at this early stage. Aden also seemed to view the root of many of the problems in Operations as the poor quality information the IT system was producing. The IT function was one of Simon's areas of directorial responsibility. At the end of phases 1, 3 & 10, Aden concluded by saying the problem was the information that Simon's people were giving them.

This repeated message had not gone unnoticed by Simon. When the meeting broke to calm the atmosphere, Simon commented to Carl and Steve (off tape) "well it sounds as though everything in Operations is my fault doesn't it !". Aden's willingness to criticise

Simon would have undoubtedly had some form of effect on Simon's view of Aden, the team and his own performance.

Along with Aden's aggressive responses to criticism of his and Malcolm's efforts in Operations and in particular his reaction to Simon and Steve, there appeared to be a further trend in team's discussions of the programme of change in their Operations management. After a new topic was introduced by Malcolm, a challenge would arise from Mike, Carl or Steve. This challenge would be met with an aggressive response from Aden and, as already stated, the aggression was usually sparked by a comment from Simon or Steve. The sensitivity with regard to Simon has already been discussed. However, of additional interest was an apparent discrepancy of views about the appropriate level of interest that other directors ought to have shown in the operations issue i.e. the appropriateness of the challenges that Mike, Carl, Steve and Simon were making. Mike and the other directors, seemed to believe that they ought to be involved in the day to day handling of information and making decisions in operations. Aden and Malcolm saw no need for this level of interest and intervention and perceived it as a general lack of faith. The following quote from phase 3 of the discussion demonstrates this.

Simon "Can we each have a twice weekly update against where this programme is at"

Malcolm "Well why on earth do you want that, a twice weekly update, what will that do !"

A little later on in phase 7, Aden challenges Mike's belief that it is proper for them to be as interested as they are in the day to day running of Operations when he and Malcolm are now in charge as opposed to the previous ineffectual Operations Director.

Mike "Well I have to say that its probably good that we've got into this level of debate around a specific thing. At one time it was, you know, 'ok here's the plan its going to get better and everybody shut up'. You know I'm sort of encouraged that we're doing it and expect the same next month if sales are down. I don't mind being questioned and people really getting into the detail of what's happened and how we're going to tackle it. But I do get the impression that maybe its taken a little too personally and you know, it's your area but after all this is a management TEAM (stressed) and it's for all of us to share in the problem. So it's not a witch hunt, you know, we're not looking for specific individuals we're looking for solutions to problems and moreover solutions that are going to convince us !"

Aden (sounding irritated) "OK can I give you an example. OK ! You say, or you're implying that I've taken it too personally ?"

Mike "Yes"

Aden (challenging tone) "Well, OK. Well the issue around the bags, you just don't believe me that the bags have been changed do you ?"

Mike (hesitating) "Well no, I don't believe... I don't understand whether it did or it

didn't. It's a fundamental point. Is the problem because the bags are too big or not. I've got people telling me that its not and you've got people telling you that it is."

Aden "Yeah sure you've got a different story but I've checked it out ! That should be enough"

Carl (addressing Mike) "Maybe they changed before they got to your department you know... Is there anything more we can do because we seem to have beaten this one to death. I don't think there is anything more we can do at this juncture, shall we move on ?"

It may have been that there was a genuine discrepancy in role expectations within the team: i.e. they had different perceptions of what level of interest one director ought to take in another's area. The issue of role expectations is discussed again later in this section and chapter seven. It have also been the case that the old team (Mike, Carl, Steve & Simon) were operating on their old models of directorial responsibility and the conduct of management team meetings. Reger and Palmer (1996) discuss the tendency for 'old' mental models to override new ways of making sense of events. For example, the previous Operations Director was not managing his area effectively and others stated that they felt it had been their responsibility to get involved and try to contain the situation. It may have been that the old team were having difficulty relinquishing some of the interest and sense of responsibility they had previously held for the Operations department. In addition, as Aden was a new MD, with only Carl having had past experience of his capabilities, it would be unlikely that the team would have learned to trust in Aden's managerial ability and judgement. The combination of an inherent lack of faith in Operations and a yet to develop sense of trust in Aden, may have produced what Aden and Malcolm saw as the other directors' unhealthy interest in operations.

This summary of the general trends noted in a grounded analysis of the transcript of Construct Chemical's February 1996 management team meeting, identified the following. The meeting had 10 distinct phases. Aden was dominant and Malcolm was also involved in most discussions. Mike and Carl were the next most vocal contributing to the majority of the early phases of discussion. Steve and Simon contributed the least, with Simon in particular only offering comments in two of the ten phases. So overall, there were two clear trends that appeared in this first meeting (1) Aden's aggressive response to questioning and challenging about his and Malcolm's management of the Operations department, and his particular abrasiveness with Simon (2) the apparent discrepancy in team members' views about the appropriate level of interest to be shown in the day to day running of and decision making in operations.

Reflectiveness - was not able to be assessed at this time. Figure 3.3 in Chapter Three shows, that for this management team meeting there were no interviews conducted before the event. This occurred because rapid and unexpected access was given to this first meeting and interviews could not be arranged in time. Keen to collect and use all possible data, the decision was made to use this meeting as part of the analysis. From this point on there are interviews preceding and following each meeting.

In summary, it is important to note that at this stage there was no uniform agreement that emerged regarding the programme of change that Aden and Malcolm were introducing in operations. Mike, Steve and Simon all appeared to have problems with the course of action Aden and Malcolm were following and challenged the results they had seen so far. Carl was not as vocal in terms of criticising Aden and Malcolm's performance. His interventions tended to be concerned with easing the tension in the meeting. Nevertheless, the team did not converge during this their first meeting. The most dominant individuals had been Aden and Malcolm but importantly, they (in the same way as had been noted in Colour Scheme with Jonathan and Alun), appeared to be responding to Mike, Steve and Simon's agendas instead of pushing their own.

(2) February Interviews.

Analysis of the VCST & COPE maps and interview transcripts of each director revealed that the team did in fact overlap. The core constructs extracted from the directors' first interviews conducted after the management team meeting, saw them forming three groups that displayed a degree of micro level, issue based cognitive overlap. These dyadic and sub groups of overlap are shown in figure 6.2 and table 6.4 below.

Figure 6.2 Groups of Overlap in February.

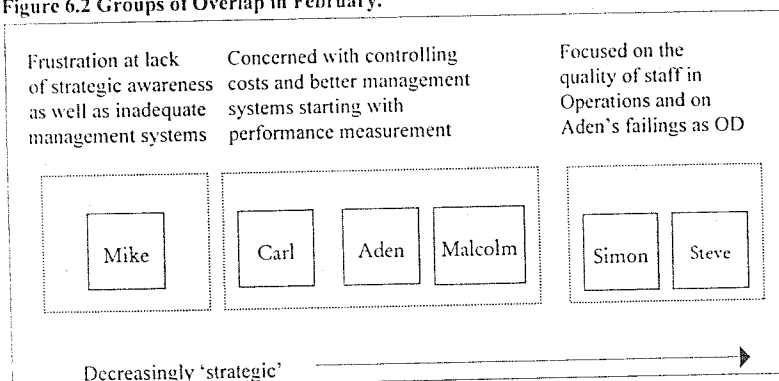


Table 6.4 A Summary of Directors' Central Issues in February.

Mike	Carl	Aden	Malcolm	Simon	Steve
Lack of appropriate strategic analysis or awareness as well as systems and cost management.	Systems and cost control in local units plus formal manufacturing strategy of Construct Chemicals international.	Cost control and systems management via measurement of performance in local units.	Cost control and systems management via measurement of performance in local units.	Inadequate people in the Operations function as well as Aden's failings as acting Operations Director.	Inadequate people in the Operations function as well as Aden's failings as acting Operations Director.

The two individuals responsible for controlling, managing and changing the Operations function were Aden (MD and joint acting Operations Director (OD)) and Malcolm (operations project consultant and joint acting OD) appeared tightly grouped along with Carl (Technical Director) who, of all the other directors was responsible for the function most closely linked to operations. In February, this formed an extremely powerful or dominant group of overlapping opinion. Each of these directors focused on the need to control costs within the Operations function as the key issue they faced. For Aden and Malcolm this was a localised issue; that is they discussed costs in their own factory units and talked of the need to introduce measurement to identify areas of weakness that could be subsequently improved. They were both specific in their attribution of the problem to a historical lack of management in this area.

Aden "In the past we've just struggled along. But this has cost implications. It's all VERY costly because if the customer needs something tomorrow then you're all hands to the pump, rushing around like a Chinese laundry and that costs money, our costs are too high and we know that because we're losing money. In terms of operations, the way we manufacture, distribute and interface with the customer, we're just too costly.

The approach to dealing with the problem of over inflated costs in the Operations function that Aden discussed at this time was to institutionalise a policy measurement of all key processes in Operations to identify areas of weakness.

Aden "What we've decided to do, and this is Malcolm's influence, we've decided to say that measurement and breaking processes down into their constituent parts to be measured will tell us where the problems are. That's the thrust of what we're doing, its improving measures and letting the measures tell us what we've got to do, what we've got to work at."

Carl discussed the same local cost issue as well as some broader issues that were more focused on Construct Chemicals International's approach to manufacture. He took time to point out that by having no formal strategy, Construct Chemicals International were forcing local units in different countries to compete against one another. All three of these directors mentioned the calibre of staff in Operations but did not focus in on it as a major issue at time one.

With the exception of Malcolm, no one focused on the need for measurement and control systems to be introduced and maintained in Operations in the way that Aden repeatedly did. It is important to note that in Aden's eyes this was the key to the management of the whole operations issue and, with the exception of Malcolm, no other director mentioned it at any time.

At this time Mike's views were distinct enough to place him in a different cluster from Aden, Carl and Malcolm. The reason for this was that in Mike's view there was a real possibility that, in spite of all of the top team's efforts, costs would rise in Operations as the capacity in the new production units built at Lichfield had been badly forecast and most units were actually operating under capacity: effectively losing money. He

believed that no proper financial analysis had been conducted prior to building the Lichfield product units and he attributed this error to a basic lack of strategic awareness in the top team.

Mike "But I think they drive through the rear view mirror and in Operations its almost like they're saying 'I don't have an interest in how the industry's changed, I'm uncomfortable doing that so we'll just do what we always do' and it comes back to the issue of skills around strategic management. We don't as a business understand the strings you have to pull when your business enters into maturity, we don't really understand the key issues. And its like a lot of companies you don't look for them until the harsh realities hit you, it happened to IBM you know and has just as easily happened to Construct Chemicals.

I suppose for myself I assumed that all this capacity analysis had been done and now I realise that I don't think it has ! So I have a strong suspicion that in some areas it could be that our costs go up ! The emphasis is being put on moving machines and moving people and getting people with the right skills, I mean some financial analysis has been carried out I'm sure, but I would say now I'm not sure to what extent.

I've raised it as an issue with Aden and with Malcolm Stanton. I got an answer that 'we haven't done it' so I've just left it there. The way I see it its happened now and there's no going back."

Recent events may have been influencing Mike's cognition at this point. That is, his view of the operations issue was in his own words 'strategic' and at this time he had recently finished his part-time MBA at Cranfield and had arranged and run a strategy workshop with one of his lecturers from Cranfield's Strategy Group a few days prior to his interview. In later interviews Mike's strategic focus did not reappear.

The third and final overlapping dyad found Simon and Steve grouped tightly together. They shared many common constructs and themes in their perception of the management of the Operations function at Construct Chemicals. These two directors displayed the greatest distance from the dominant group of Aden, Malcolm & Carl. This distance may have induced a sense of isolation and disenfranchisement. This was considered possible when it emerged that over 90% of the constructs on Simon's *COPE* map being classified as negative, 9% neutral and none positive. A similar trend could be found in Steve's *COPE* map, with over 70% of his comments classified as negative.

Although they both mentioned the need to control costs in operations, Simon and Steve were focused on people issues, specifically the calibre of personnel in operations. Steve was keen to take action to remove the poor performers and was frustrated by Aden's reticence to do so. The focus on people issues as opposed to cost based reform, demonstrated how different Simon and Steve's perceptions of the Operations management issue were from their colleagues at this time. In particular, there seemed to be a breakdown in communication between these two and Aden. Simon and Steve were both keen to hire what they called an 'interim manager' to replace their manufacturing

manager Mick Rawlins who, in view of the lack of an Operations Director, was the most senior member of Operations staff after Aden and Malcolm.

Steve "I had previously spoken to him (Aden) about it (hiring an interim manager) before the meeting and given him the names of existing people in the company that could be brought in to strengthen the Operations team which he accepted 'good idea Stewart'. Then at the management team meeting he seemed not to want to hear it cause he felt defensive, cause he's not getting...(hesitates, perhaps stopping himself saying something) he can't devote enough time to it so he's got a guilt thing about it. He's got a problem. He felt defensive cause he's not done the things he intended doing"

Steve's frustration at this time was matched by Simon's. He was concerned at the lack of 'can do attitude' amongst the staff in Operations and he too was keen to see the removal of Mick Rawlins and his replacement with an interim manager. This topic was repeated on four separate occasions during interview as well as during the team meeting where it caused an aggressive response from Aden. Simon recalls the incident.

Simon "Malcolm was giving his rosy speech and Aden turned around to me and said 'what would you have me do ?' My solution was that we need an interim manager and my solution is to bring in an interim manager. I think that Carl and Steve are of the same mind. I don't understand Aden's viewpoint. I suspect he thought somebody thought he wasn't doing a good job"

In fact the actual incident (taken from the tape recorded meeting) was not as Simon had recalled it. Aden had responded, not to the call for an interim manager as Simon suggested, but to the repeated calls of Simon and Steve to sack some members of Operations personnel (in particular Mick Rawlins) at a time when Operations was precariously overloaded.

Aden (Aggressive tone) "Look, I'm not that confident that Mick Rawlins is going to make it in this company either, but what would you have me do, fire him tomorrow ? That's not gonna help (5 second pause, raising his voice even louder) it's not going to help is it ! (a further pause) Is that what you want me to do ? (very aggressive)"

Simon (Speaking very quietly, not making eye contact) "I don't know there may be an issue about bringing in an interim manager; that may be an option, I just don't know, but we've all got issues, things that we're trying to get done everyday."

Aden "Well you can't just heap all the blame on Mick Rawlins. He's trying to get things done too. He ain't perfect !"

In Steve and Simon's recollection of the incident they had *projected* a self defensiveness onto Aden: i.e. he was defensive about his own performance as acting Operations Director. Steve and Simon believed that the discussion was about the appointment of an interim manager to relieve stress in the system. Where as Aden had believed it had been

about sacking Operations personnel: finding someone to blame. Aden recalls the incident in his first interview.

Aden "It's sort of the blame culture, 'let's kick the bastard that's not produced the goods' or whatever rather than a focus on the positive and what you need to do to sort out the problem, the REAL (stressed) problem."

It appeared that these three individuals had made sense of the discussion about interim managers in different ways. Each had applied their own beliefs about each other to help them understand the dialogue between them. For instance, Steve and Simon believed that Aden was stressed and defensive. Aden believed Simon (at least) was locked into the old blame culture of Construct Chemicals. These misconceptions and possible projections of insecurity on the part of Steve and Simon can be traced through much of the interactions between these three over the entire four month period.

The theme of criticising Aden, of his being under stress and not fulfilling his role as Operations Director, was one that only Simon and Steve had in common at this time. This theme grew in importance for the whole team over the four month periods, but it was only Steve and Simon that focused in on it in February.

Simon "I've not seen Aden giving nearly enough time to get to grips with this role. He's an amateur coming in knowing there was a big problem to solve. I would prefer to bring in an expert so that Aden can do what he's expert at"

In summary then, in the first time period there was some consistency in the views expressed by each of the directors, in that each mentioned the need to control costs and management systems. However, there was also a great deal of divergence in the extent to which each of them saw the cost / systems issue as central to their view of operations management. Two groups of overlap clearly emerged. First group was made up of Aden, Malcolm & Carl. The second covered Simon and Steve. Mike did not obviously overlap with any of his colleagues at this time.

(3) March Management Team Meeting - 20th March 1996.

In March, some of the changes that Aden and Malcolm had begun to make were noticeable in operations. Some production cells (sealants, admixtures) were doing well, but the other two (resins and powders) were still seriously behind in order completion. Mick Rawlins had resigned as manufacturing manager but had agreed to work his notice.

However, sufficient hiccups and errors were still happening in Operations to be noticed by all the other directors. In addition, an accident at the plant on the weekend before the management team meeting had caused great concern. This incident, the details of which the directors would not discuss specifically (on tape), could have had serious implications had anybody actually been hurt.

The March meeting took place between 10:45am and 6:05pm. The operations issue was discussed from 3:15pm to 4:50pm. All the directors were present at this meeting. This meeting was much calmer than its predecessor but followed the same format in that Malcolm gave a presentation updating the management team on the measures he and Aden had introduced and monitored in the last month. However on this occasion he was able to cover much more ground as he was interrupted less and the *people issues*, while mentioned, did not take over the meeting. There were 12 distinct phases of discussion that are shown in table 6.5 below.

Table 6.5: Key Phases of Discussion in March.

Phase	Topic	Discussants	Time Mins
1	Malcolm opens the report back on Operations by saying 'now the sport begins' and hands over to Aden to update the team on staffing issues - Mick Rawlins has resigned and Jenny Bell is moved from technical to become new cell manager in Resins	Aden & Malcolm	3min
2	The staffing discussion focuses on the appointment of an interim manager to fill in as manufacturing manager until a new Operations Director is appointed. Steve is very keen to appoint, stressing that Aden had a big enough job without filling in that role as well. Carl supports him. Mike questions the reasoning behind the appointment when Mick has agreed to work out his notice of 3 months by which time a new Operations Director may be in post.	Aden, Steve, Carl, Mike	20 mins
3	Malcolm moves the discussion on to begin his report back proper. He runs through target delivery figures with the team without ever making explicit his and Aden's 98% delivery on time target for operations	Malcolm, Aden with some questions from Carl, Mike and Steve.	15 mins
4	The delivery discussion briefly side-tracked into a discussion of best policy, either own vehicles or hired transport fleet.	Mike and Malcolm	3 mins
5	Malcolm moves on to discuss manufacturing performance in the Sealant cell which is doing well.	Malcolm very limited questions from Steve and Simon	10 mins
6	Malcolm and Aden share with the team their intention to invest in a new system to change production lines much faster than they were previously able, there by increasing capacity in some cells	Malcolm, Aden, Mike and Carl	6 mins
7	Malcolm runs through the programme of skills training that has been introduced across the board in operations	Malcolm	2 mins
8	Malcolm updates on the performance in powders. Aden leads a brief discussion of the automated bagging equipment that was so controversial at the last meeting	Malcolm & Aden	4 mins
9	Malcolm updates the team on the poorly performing Resins Cell.	Malcolm	7 mins
10	Positive changes taking place in supply chain management are discussed by Malcolm and affirmed by Mike	Malcolm & Mike	5 mins
11	Malcolm moves on to his last topic distribution. He talks about the purchasing of a new distribution depot near London. The decision to open such a depot was agreed several weeks ago by the management team. However Mike raises concerns about the rationale for doing so, both he and Steve had different recollections of this decision from those being used by Aden and Malcolm. A heated exchange between Aden and Mike ensues.	Aden, Mike, Malcolm and Steve	20 mins
12	Malcolm closes the feedback with other team members asking for a copy of his slides as they paint a positive picture that they can show to their own staff.	Malcolm, Simon & Carl	2 mins

General Trends. The most obvious characteristic of the March management team meeting was that it was calmer and almost subdued in comparison to the February meeting. In contrast to the first meeting, Aden was quiet leaving much of the feedback to Malcolm. Of the 12 phases of discussion, Aden only contributed to half. The subdued nature of the meeting was also apparent in the number of topics that Malcolm was able to get through with no interruptions (3) or with minimal contributions from other team members (2).

At this meeting Malcolm had a lot of information to deliver to the team. This was in the form of both planned initiatives and output from performance measures already introduced. In short the Operations team had more to say and in the main, the management team listened. In his second interview conducted after this meeting, Carl described the discussion of Operations in the following way:

Carl "So what about the marathon session last time then ! Malcolm's input was nearly two hours, that's far too long and counter productive in my view. But it was interesting to watch, 'cause at the previous meeting that you were at he had a reasonable mashing. He dealt with it very well I felt this time.

Well, I say very well, comprehensively. I'm not quite sure it was the most effective way to do it but that's what he did. So consequently there was very little time to discuss. I suppose I(stressed) let him go on because I felt it was useful for him to re-establish a bit of credibility. Before his status as a consultant had given him a degree of pomposity in the way he communicated. It was much less pompous this time and had actually a hard hitting edge with a list of factual activities which was impressive. But it didn't allow for much interactive dialogue so it wasn't appropriate, there wasn't the space.

But I think he did it quite deliberately which I think is interesting."

It is possible that Aden's relative quietness was a strategy that had been planned by himself and Malcolm to deliver a large amount of information to the management team in an attempt to reassure some of the concerns expressed at the previous meeting. However, it may also have been symptomatic of the frustration that Aden was feeling at that time. The next sub section (4) reveals how in the main, this frustration was directed inwards. Aden had shared his feelings of self doubt in his second interview and the accident had occurred in the factory on the weekend immediately prior to the March management team meeting, had seriously undermined Aden's confidence in his ability to carry out all of his directorial responsibilities (MD of the UK company, MD of Europe and acting Operations Director). The following quote from Aden's second interview demonstrates his state of mind just after the March meeting.

Aden "I've been acting sub optimally because I'm trying to be MD of the company, own the ops direction because Malcolm can't own it and be European Regional director which I'm hardly doing at all. I guess personally I've been feeling the pressure more so than I have in different jobs. This is the toughest job I've had for years, I'm actually starting to feel it a bit. What I don't like about where I am right now, who I am. Other than the mess of papers on my desk, is that I thought I

could manage; I'm disappointed by it. It worries me that I don't know what to do next, at the moment. At this time it just doesn't feel good 'cause I just don't know what to do next."

It was perhaps predictable that Aden did not share his concerns with the other directors when directly challenged in the March meeting. This challenge occurred when Steve and Aden again discussed the appointment of an interim manager.

Steve "I think we should be looking at the amount of work you've (addressing Aden) got on at the moment."

Aden "Who, me personally?"

Steve "Yep. You're running this site which is no cake walk at the moment with all that's going on. You're running the UK company and you're running Europe. Now I bet you're not running Europe just now (Aden in the back ground "I'm not") cause you've not got time to and you're probably giving less time and attention to running the UK cause you're gonna have to be giving and getting caught up in the day to day issues of running the site and that's understandable; and what I would be saying is this whole investigation about freeing up time from running the Lichfield site, the manufacturing side. This guy could come in and free up say five hours a week and from you that's pretty good value for money.

Aden doesn't immediately respond, but a little later comments

Aden "You see I worry less about my time than you worry about it 'cause I've told my boss I'm not going to Hong Kong next week; I'm not going. So if it means losing a week then I'm not going cause THIS (stressed) is the most important thing.

10 second silence

Carl "I mean, in support of Steve's concerns about your time there are many more valuable things for you to be doing than the day to day running of the cell mangers.

Aden (Sounding defensive) "Well it's an interesting point. What's more important than making sure that our operations actually get the people and some of the err, desires to sort operations out right ! What's more important than that in this company ? As important would be Mike's sales and marketing initiative. Is that being held up cause I'm not giving you enough time ? (addressed to Mike)

Mike shakes his head

Carl (Aggressive) "Look its obvious that you're COASTING and you don't need this extra guy !"

Aden changes tone and placates Carl and Steve by agreeing the interim manager candidate is skilled, especially in their manufacturing management computer system and that may be an advantage. Raising the subject of the computer system leads Simon to make a seemingly misplaced comment about computer systems awareness. After

which there is a pause, Malcolm sarcastically says "Right. Thank you Simon", the rest of the team laugh and Malcolm takes the opportunity to move on to the next phase of discussion (3). The appointment of the interim manager remained partially discussed and undecided.

The doubts that Aden had about his own performance were not shared in the meeting, even though Steve had actually presented an empathetically voiced and non threatening opportunity for him to do so. His defensiveness had brought an unusually aggressive response from Carl which in turn caused Aden to immediately back down. Overall though, it could be suggested that Aden's own uncertainty may have partially accounted for his much reduced participation in the overall discussion of the Operations function.

Another noticeable trend in the way the team interacted during their March management team meeting was the continuing trend for Simon to be limited in the contribution he made to team discussions. As with the February meeting, Simon offered very little to the discussion of the operations issue. When he did contribute it tended to be in the form of single sentences and he only offered these in two of the twelve phases of the discussion. In addition, on two thirds of the occasions that he did contribute, he was interrupted; in effect cut off by Aden.

This may have been reflective of Aden's growing intolerance of Simon. Alternatively, Simon did seem to make statements that were tangential; that is not directly relevant to the issue under immediate discussion. Aden, acting as chair, may have viewed these as inappropriate and therefore cut him off. What ever the reason for the continual interruption of Simon, it was not surprising that in his interview following this meeting, he expressed a number of negative sentiments about Aden (see next section).

In summary, the March meeting, although spending more time on the discussion of operations, was much less discursive than the previous stormy meeting. This greater discussion of the progress of Malcolm and Aden's plans to improve performance in each production cell filled almost two hours. However, the bulk of this time was taken up by Malcolm moving uninterrupted through a series of updates in each area of operational responsibility. There were two prolonged periods of discussion in which the appointment of an interim manager to support Aden and the location of a new distribution depot in the London area were discussed. In the main Aden was quiet with Malcolm taking the lead. Mike, Carl and Steve all asked questions with Carl a little more openly critical than he had been in February. Simon said very little. Overall the meeting could be described as subdued.

Reflectivity - was able to be assessed for the March meeting, based on the directors views as expressed in their February interviews. The notion of reflectivity was based on assessing the extent to which the views each director expressed during their February interview were closely reflected in the contributions they made to the discussion of the operations issue in their team meetings. Non-reflective contributions were considered to be those that were either counter-intuitive, unrelated to the key themes distilled from one to one interviews or when a director made no comment at all. The reflectivity of each director is commented on and shown in table 6.6 below.

Table 6.6: A Summary of Directors' Reflectivity from their February Interviews.

Director	Core Constructs taken from February interview.	Reflectivity During March Meeting
Aden	Stressing continued strategy of cost control and measurement systems	No, not reflective. However his change of mood and non contribution is reflected in his comments at time two. He was in the main responsive to others.
Malcolm	Stressing continued strategy of cost control and measurement systems	Implicitly yes the message about measurement and systems was evident in his report back. However it was never made explicitly clear, even though he had sufficient time
Carl	Need for a world-wide manufacturing strategy and in the UK strategy of cost control and measurement systems	No not reflective, the majority of Carl's contributions were offering complaints about the standard of products and quality control in operations
Mike	Concerned about the overall lack of strategy awareness in the UK company.	No. Mike did not mention his key theme.
Steve	Operations staff are inadequate and Aden is failing as acting OD.	Yes Steve was reflective of his concerns about Aden's workload and the need to have an interim manager but they were toned down for public consumption
Simon	Operations staff are inadequate and Aden is failing as acting OD	No, hardly contributed at all.

In Construct Chemicals at this time, the views of the majority of the directors were *not reflective* of their views expressed during their February interviews. One of the reasons for this may have been Malcolm's dominance of the discussion: going through area by area the projects and measures he and Aden had introduced. As already noted by Carl, this left the other directors little opportunity to comment. However, even though he dominated the discussion, Malcolm was never specific about the targets and strategies that he and Aden had decided to follow in operations. It is surprising that neither of them (Aden & Malcolm) clearly explained their strategy at any time during this or any other management meeting, even though both did so consistently and eloquently during interview. It may be that they believed that they had already made their plans explicit to the team. This sort of misconception would account for the misunderstanding that developed within the team during the February and May meetings.

Aden's unusual lack of input was noted earlier. His own non reflectivity has already been discussed and attributed to his personal uncertainty at that time. Being a new MD, charged with the important task of turning the UK company around, he would have been unlikely to share self doubt with his team.

Simon was also unreflective at this time. Primarily his views were dominated by his lack of faith in the Operations staff and in particular in Aden. As with Aden, political prudence may meant that he would have been unlikely to express these views in public.

Mike and Carl's views were not as politically sensitive as Simon's but were also not expressed during the meeting. Their non reflectivity is suggested to be a function of Malcolm's dominance of the meeting. Again as already noted, Carl accounted for his own behaviour in this way.

Steve however was reflective of his views both concerning Aden's workload and associated with that, the need to hire an interim manager until the recruitment of a new

Operations Director went ahead. Steve, not usually one of the more vocal directors (usually the high scoring extroverts Mike and Carl), was extremely vocal when an issue that he was concerned with was discussed, i.e. the recruitment of an interim manager is a HR issue. This was reminiscent of the theme of: self perception of role as a director and member of the management team, that emerged in the analysis of the February meeting. That is, in that meeting there appeared to be a discrepancy between the Mike, Simon and Steve's view of what was legitimate interest in Operations and Aden and Malcolm's view: e.g. Mike stated his keenness to be involved in other director's areas and they in his. Simon was asking for weekly reports on progress in operations. In the March meeting, the contributions that Steve made, although in one sense politically risky (directly questioning Aden's ability), could be seen to be in line with his view of what was legitimate intervention from a HR Director. A comment from Carl Kennedy suggested that full frank and honest communication, was typical of Steve when he felt the issue encroached on his area. He may have felt that Aden's performance and well being in the role of MD and the recruitment of the interim manager were both very much part of his remit and therefore open for comment.

Carl "In the area of his own discipline, HR, he's (referring to Steve) totally ballsy. He'll take anybody one about whatever issue I mean he's not a reticent individual"

Alternatively, it may simply have been that when the topic of the interim manager had initially been raised, Steve (who had sat in on the interviews for the interim manager's position), was *invited* to comment by Aden. Once given the legitimacy to comment Steve took the opportunity to go further than anticipated.

In summary then, the March meeting revealed several trends with regard to the three propositions initially explored. First, proposition IIb that focused on collective cognition as overlap and predicted that the team would converge around the overlap shared by the most influential of its members. As has been shown in the section above, the team although not overtly conflictual, were either silent or questioning in response to Malcolm's two hour presentation of the programme of change in Operations and could not really be assumed to have converged.

(4) March Interviews.

Analysis of the VCST & COPE maps and interview transcripts gathered from each director after the March meeting revealed that some of the team did in fact overlap. The core constructs extracted from the directors' second interviews conducted after the March management team meeting, saw them forming two subgroups that displayed a degree of micro level, issue based cognitive overlap. However, Malcolm did not appear to overlap with any other team member in terms of their *key* themes alone. These groupings are shown in figure 6.3 and in table 6.7 below.

Figure 6.3 Groups of Overlap in March.

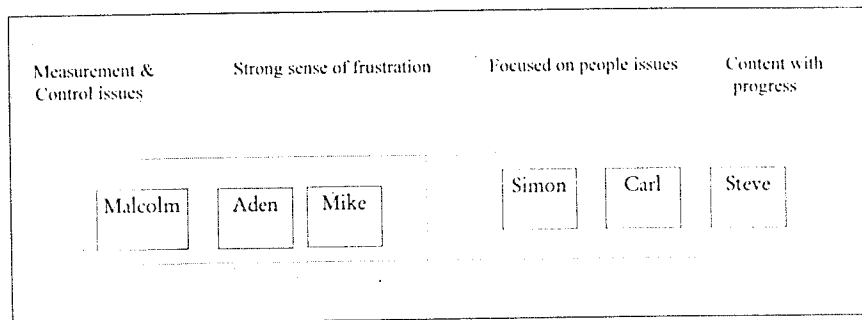


Table 6.7: A Summary of Director's Central Issues in March

Malcolm	Aden	Mike	Simon	Carl	Steve
Cost control and systems management via measurement of performance in local units.	Sense of frustration and disappointment at his own performance as well as cost control and systems management via measurement of performance in local units.	The sense of frustration with the lack of stock to supply customers and the conflict of short and long term pressures to solve the operations issue.	Hiring an interim manager to prop up inadequate people in the Operations function as well as Aden's failings as acting Operations Director.	The need for change agents to be brought in and his personal involvement in doing so.	Hiring an interim manager would resolve all the problems in operations.

In almost all cases (with the exception of Simon) the central issue discussed by each director was somewhat changed. It seemed for many of the informants that March was a time of flux and shifting attention. The accident that had occurred at the plant seemed to have been a significant event, especially for Aden and Carl. This accident was a chemical accident that could have been a lot worse than it actually was. Carl as technical director and Aden as acting OD & MD, were both responsible for health and safety. The incident had in Carl's words "*exposed Aden and me to the full nakedness of operations*". He went on to explain that they would have been open to personal prosecution in the event of damage to employees, the surrounding environment or the local population.

The effects of this jolt could clearly be seen in Aden's interview. Although he spent time discussing the need for cost and systems control and measurement in Operations as he had the previous month, the issues that were the most central in Aden's view of the whole operations issue in March were his own feelings of personal stress and his feeling that he had been acting sub optimally as MD. This sense of intense pressure was shown in the previous sub section where a quote from Aden's interview was used to show how he felt he was "acting sub-optimally" and that this was "the toughest job" that he had experienced for sometime. In the main his concern was that he was unsure of what to do next: i.e. had lost some clarity in terms of his overall plan for operations.

A sense of frustration was something that Aden had in common with Mike. In February, Mike's central issue had been the lack of strategic awareness and analysis around the operations issue. In March, his focus had changed and was much more localised. His primary concern at this time was with the impact that the poor performance in Operations was having on his own sales and Marketing function. The failure to supply product on time was having a long term impact on client relations. Mike and his team were taking the brunt of the complaints. Although Mike could see that there were plans in place to correct these problems, the tension between short and long term outlooks was a source of great frustration for him. In the quote that follows, note the number of times Mike follows a semi positive statement with a 'but'.

Mike "We've got enormous problems. We can't get products to our customers, we're trying to take orders for our main line products but we haven't got any stock in we just can't supply. I'm patient, and I understand that they're doing things to sort it out but at the same time I have the frustration of the business today and I'm not being satisfied cause I can't supply product. I'm positive things are happening but progress is so slow. I've no doubt that in a year we'll have it sorted out but you have to couple that expectation with not being able to deliver products right now. Its a real strain for us at the moment."

Malcolm, overlapped with Aden on one level. That is, they both discussed the cost and measurement controls they had introduced as the main part of their programme of change in operations. However, Aden spent more time in his interview talking about his own sense of frustration. Malcolm remained focused on the measurement controls with no distractions.

The second group of overlap to emerge from the analysis of key themes expressed during interview after the March meeting contained Carl, Simon and Steve. Within this group, the central concern was with people issues; that is, Operations successes and failures were interpreted in terms of the quality of its personnel. Simon made relatively negative comments about the *people issues* in Operations whereas Steve and Carl were relatively positive. Steve was using language like "its a win, win situation" and appeared that his overall positive outlook in terms of how well he thought Aden and Malcolm were managing Operations may have been the result of his satisfaction with Aden's apparent decision to go ahead and recruit an interim manager. Steve had explained that Aden had agreed to the appointment of an interim manager after the March meeting. The new positive outlook to the Operations problem adopted by Steve was also an example of the naïve '*heroes and villains*' philosophy² that Aden believed

² *Heroes and villains in the old Construct Chemicals blame culture.* Some of the first qualitative analysis done post fieldwork revealed an interesting trend in the data that was later confirmed in a feedback discussion with the informants. This trend was in the naïve approach adopted within Construct Chemicals to solving problems by hiring new people, *heroes*, to solve things. These individuals once brought into the organisation were rapidly knocked off their pre-erected pedestals if things did not immediately improve. They were then quickly moved to the status of *villains* to whom all past and future problems could be attributed. This happened to Mick Rawlins, John Smith (supply chain manager), Malcolm Stanton (KPMG), and Jenny Bell (new resins cell manager) during the fieldwork period of only four months. All the directors showed some tendency towards this blaming behaviour, however those

to have been prevalent in the Construct Chemicals culture before he arrived. This may also have been the cause of Steve dropping his criticism of Aden at this time; i.e. Aden was now in Steve's eyes, a capable MD now that he had taken the decision that Steve had wanted him to.

Carl was also relatively positive in that the comments he was making that, although implicitly critical of Aden and Malcolm, were constructive offers of assistance. At this time his views, as had Aden and Mike's, had shifted somewhat. There was still the mention of the formal strategy of the international company in terms of manufacturing policy, however superseding this was Carl's discussion of just how involved he was becoming in the management of operations. He was much more concerned with getting the right people in the right jobs, the recurring theme was the need for change agents and these included the appointment of a new cell manager called Jenny Bell and the appointment of an interim manager.

The number of issues Carl discussed at this time increased by over 50%. This was the opposite trend from the other informants. Three contextual factors may have contributed to this. First, Carl had moved offices to be based on the main site at Lichfield and, on route to lunch walked through the factory every day and had begun to notice production inefficiencies. For him theoretical problems had become reality. Second, the accident that had happened the weekend before Carl's March interview had in his words "exposed Aden and me to the full nakedness of operations". Consequently, Carl's interest in the local management of the operations issue had been somewhat heightened by the personal implications of its failure. Third, Carl had volunteered to transfer some of his most capable members of staff (in particular Jenny Bell, see footnote 3) to fill management positions in Operations that badly needed support. So not only was he getting more information about Operations from these individuals, he had also made a significant investment in the resolution of the operations issue and was keen to see a return. In short Carl was much more involved in Operations at this stage and his discussion centred round an explicit display of how involved he was, along with getting 'change agents' into the right positions. Five short quotes from different sections of his March interview show this.

Carl "Jenny's in there as a change agent from this Thursday and that's my initiative, I've been lobbying for that for six weeks, primarily with Aden. I planted the seed six weeks ago and have watered it regularly till the point where the decision was made.

"That's why Jenny's in there, she's a change agent and I applied inexorable pressure to get her there."

"I'm lobbying just about anyone who'll listen to me"

"I put Aden under a lot of pressure with regard to Mick Rawlins' ability"

who displayed the greatest tendency were the three directors who had been used to working in the blame culture fostered by the previous MD (Catharine Atherton); Carl, Simon and Steve.

"I've lobbied hard about hiring an interim manager,... we actually out flanked Aden". He and Steve and Simon arranged interviews for an interim manager behind Aden's back whilst he was away on holiday skiing.

Although overlapping with Carl and Steve in that to some extent in that they were all concerned with people issues, Simon was more openly critical of Aden and Malcolm's efforts and was much less constructive. As before, one of Simon's central concerns had been about Aden's inability to cope. In fact his critique of Aden had become the most connected concept at this time.

Simon "Aden is feeling somewhat defensive and no matter what he says he'll never convince me that him sitting in an office, as opposed to walking round the shop floor is any substitute for having an effective Operations Director."

As with Steve the issue of the interim manager was still important for Simon, both he and Steve believed that Aden was going to make this appointment.

The March interviews saw a change in emphasis for many of the directors with either a total or partial change in their central issues. It seemed that at this time, things were changing rather rapidly. In Aden's case at least, the accident at the plant had a significant impact. Nevertheless, he and Malcolm still maintained their argument about applying a regime of performance measurement and control to all their production cells. Steve was relatively supportive at this time, believing that progress was being made especially as Aden had agreed to appoint an interim manager. The other directors implicitly criticised this focused plan by querying varying aspects of their personnel strategy of no further changes with the exception of appointing an interim manager.

(5) April Management Team Meeting- 17th April 1996

This meeting took place between 9:30pm and 1:30pm. The change programme in Operations was discussed for forty five minutes from 12:15 to 1pm. However, only three of the directors were present at this meeting. These were Aden, Mike and Simon. This was the shortest of all four meetings and was conducted informally, with chat and the exchange of the latest snippets of information between the three. This was the only occasion when Aden lead the feedback on the operations issue as Malcolm was not present. Noticeably, Aden contributed very little new information. Instead, he reiterated many of the points Malcolm had already covered in the previous management team meeting. There were 3 distinct phases of discussion. These are summarised in table 6.8 below.

Table 6.8 Key Phases of Discussion in April.

Phase	Topic	Discussants	Time Mins
1	Aden explains the content of a new operation's performance report due to be published monthly from April onwards. He discusses with Mike and Simon the problems of its production, responds to questions and explains some complex figures that had already been discussed by Malcolm at time two.	Aden, Mike and Simon	25
2	Aden moves on to the second of the two topics he wanted to discuss: his and Malcolm's planned team building events in operations.	Aden	2
3	The team building discussion touches on one event, a monthly supply chain, operations and sales manager meeting to forecast demand in the medium term. The sales managers are failing to attend. In discussing the reason for this they drift right away from operations to discuss the performance and attitude of one of Mike's sales managers, Brian.	Aden & Mike	17

General Trends. This was an unusual meeting as so many of the directors were absent: other commitments had prevented them attending the meeting. As would be expected, the style of the meeting was much more informal. The three directors present all discussed their own areas of responsibility in a chatty and unstructured way. On several occasions they wandered off the point, discussing their personal finances with reference to the self completion tax forms and a TV programme on the internet.

The feedback on the operations issue given by Aden was brief, with only two points being discussed: (1) an explanation of the Operations report due to become a monthly document produced in the same way as the Financial and Sales reports (much of this discussion was a reiteration of phase 2 of the previous management team meeting); (2) simply informing Mike and Simon of the team building events due to happen in Operations in the near future. This last topic moved into a specific discussion of one monthly event (supply chain, operations and sales monthly meeting), that had begun well, but in the coming month, had seen many of the sales representatives drop out. Whilst theorising about the reason for this lack of interest, Aden and Mike drifted into a discussion of one sales manager whose performance and attitude were proving to be unacceptable. This discussion, that contained some brief contributions from Simon lasted for over 17 of the 45 minutes.

In summary, the overall characteristics in this meeting were its informality, its brevity, its repetition of previous information, propensity to drift off track and participation of all members. Although still interrupting Simon on occasion, Aden's behaviour towards him was much more indulgent that it had previously been.

Reflectivity - Due to the brevity and haphazard nature of the discussion there was no real evidence of any of the directors being reflective during this time period. Aden did mention the 'shared objective of the Operations function' (i.e. the specific 98% delivery on time he and Malcolm had set themselves) but did not elaborate further than a simple reference. Mike was most engaged in the discussion of his sales team and Simon most interested in how the figures in the report had been worked out from the data available on the computer system. Considering their directorial responsibilities this was hardly surprising (Mike, Sales & Marketing; Simon, Finance & IT).

Simon's April interview that followed this meeting was extremely positive, both on a general level and specifically about Aden. The inclusion that he had felt during this meeting appeared to have a considerable effect on his views about the operations issue. This is likely to have been the result of improvements in his self esteem and, or, his affective state. Consequently, this poorly attended meeting, unfortunate in terms of my data collection protocol, proved enlightening as it revealed Simon's need to be seen as and included as a director of Construct Chemicals. The residual effect the fulfilment of this had on both his affective state and the way he made sense of the operations issue at time three was clear.

(6) April Interviews.

The comparison of directors core constructs derived from their April interviews showed that although there were still significant areas of disagreement between the team, April was the period when most of the directors agreed with Aden and Martin's programme of change for Operations, saw the possibility of long term success and were trying to behave in a supportive fashion. However, in spite of an eagerness to be supportive Mike and Carl seemed very down and betrayed a sense of frustration during their April interviews.

Figure 6.4 Groups of Overlap in April.

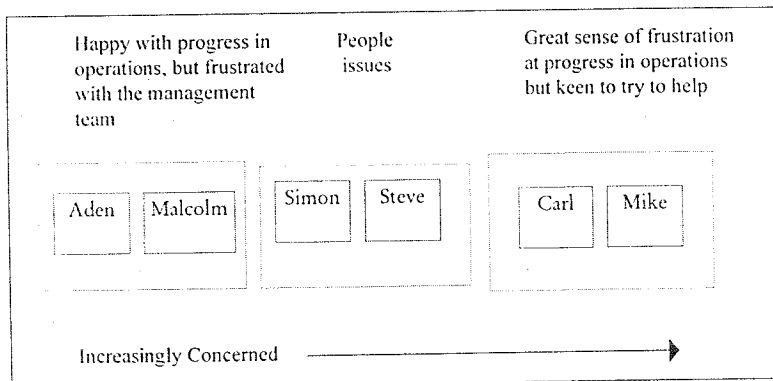


Table 6.9: A Summary of Director's Central Issues in April.

Aden	Malcolm	Simon	Steve	Carl	Mike
Cost control and systems management via measurement of performance in local units as well as a sense of frustration and disappointment with the impatience of his team	Cost control and systems management via measurement of performance in local units, as well as a sense of frustration and disappointment with the impatience of the Sales and Marketing team (i.e. Mike)	Positive attitude to the progress Aden & Malcolm's plans were making. Still some concerns about not hiring an interim manager to prop up Aden in the Operations function.	Poor communication in operations. Need better sales forecasting. Not enough good people, e.g. John Smith.	An acceptance of the need to contribute constructively to Aden and Malcolm's plans. Emphasis on own contribution to this along with own personal anxiety.	An acceptance of the need to contribute constructively to Aden and Malcolm's plans. Emphasis on own contribution to this.

In his April interview, Simon had perceived himself to be overlapping with both Aden and Mike: In fact this was not the case. Nevertheless, Simon's belief that it was true was sufficient to boost his positive attitude and supportive behaviour.

Simon "That last meeting was so good because it was like a meeting of minds. It was on a wavelength where the three of us are equals and of a common mind. If the other two had been there, there would've been disjoints"

This was, in a sense, an unexpected comment from Simon. That is, outside of the team meetings, he tended to communicate the most with Steve and Carl and had up until this point, been negative about Aden. These comments suggest how important inclusion in the power circle was to Simon. It appeared to inspire feelings of well being that could be noted throughout his interview. This was not just in terms of its positive overtones, but also in the way he moderated any critique he did have to offer.

Simon "I'm comfortable that the business is moving in the right direction. I've still got in my mind that it should've happened three to five years ago, but here we are and things are being attended to."

However, although making some positive comments, Simon was still focused on the appointment of an interim manger in operations: a new hero (see footnote 2). He believed that the appointment was to be made only to find that Aden had refused to appoint. As he had all along, Simon voiced his views about this decision. Note the toned down criticism of Aden.

Simon "An individual or some individual's were looked at and Aden made the decision not to proceed. I didn't see the individuals so I can't get involved in the rights and wrongs of that decision. I know Aden is being proactive in these areas and that's good, but there is so much to be done I still retain the view that it would have been helpful to him to appoint."

The analysis of other director's interviews at his time showed an similar degree of change. Beginning with Aden; in contrast to the self doubt that was present in his interview in March, in this his third interview he showed a good deal more confidence. However, the language he used and his general demeanour at this time (as recorded in my fieldwork journal) betrayed a certain weariness and a sense of disappointment. His disappointment was not with the change programme in operations, but with the attitude he believed he was seeing in his management team. He believed that his colleagues were being impatient and unhelpful. In the main though, his approach to the operations issue remained consistent, i.e. introducing control and systems management in each production cell. This was the same for Malcolm. However, in his April interview, he too began to express his own disappointment with members of the management team for their lack of understanding at this time.

Aden, as already mentioned, had stated that he was generally frustrated at the **"lack of corporate persistence"** claiming that management team members seemed to be unable to understand that the **"devil's in the detail"** and that short term and long term demands needed to be traded off not just **"oil the squeakiest wheel"**. Malcolm was more specific, criticising in particular the attitude of the Sales department which presumably meant Mike.

Malcolm **"I think we're making progress but I think we're coming under increasing pressure from sales and marketing. The facts are that delivery and performance are as good as they were six months ago and a LOT (stressed) better than they were last year, but we're still getting continuous flack from sales and marketing. They don't appreciate all the things we've done to improve things, they just want things to be done quicker and that's not all that helpful."**

Aden too had mentioned Mike's daily phone calls to him to raise the issue of unfilled customer orders. Mike's persistence was, at this time misread, by Aden and Malcolm. They both perceived it to be indicative of a general lack of patience and support i.e. a negative attitude. However, Mike's April interview revealed that although he was indeed frustrated (this having exterior affective manifestations; in my fieldwork journal a note was made of Mike's flustered appearance), he was positive about the management approach Aden and Malcolm were adopting. Moreover, he was keen to assist in any way he could. For instance, he recognised that some of his direct report employees were getting frustrated and being negative. Instead of positively re-enforcing their attitude, he was actively seeking to prevent its spread even though he agreed with many of their complaints.

Mike **"I suppose the umbrella issue that covers everything is poor communication, some people are awfully frustrated and tend to put a very negative spin on things. That can be potentially destructive. It's blown out of all proportion and then people act on that information. It gets back to the blame culture and I see that coming from some of the guys in my sales team."**

It takes time to change and people look to their bosses for guidance and it doesn't happen over night. So for example if Brian was to come to me and say 'Oh distribution have let us down again' and I was to say 'You're absolutely right Brian they're a load of duffers' that just promotes it. Instead I say 'Well Brian I know they're trying really hard and why don't you give Norman a call and see what the problem is'. It doesn't take too much of that sort of thing to change people's behaviour. They'll feed off it; its a childlike thing."

A similar story was true for Carl at this time. He too was inwardly and genuinely supportive of Aden and Malcolm's work. However, his increased involvement in the Operations department and generally negative outlook at this time may have given a different outward impression. Carl's April interview was characterised by negative language that betrayed an anxious state at that time. For example, 'there's too many accidents, too many mistakes', 'there's too much happening', 'there's nowhere to turn', 'things are getting worse' he described himself as 'concerned', 'frantic', 'beleaguered', 'not coping', working a 'seventy hour week', 'isolated'. In his most revealing comment of the interview, he described how he'd come into his office that morning and wept at the prospect of the day ahead.

There was contextual information that helped understand Carl's anxious state at this time. First, he was in the process of getting a divorce from his thirty year marriage. Second, he faced additional personal pressure as his mother had recently become seriously ill in April. Difficulties at work introduced a third element of pressure. A large scale new product launch his Technical department had masterminded (Exposcal 1000) had failed due to the technical failure of the product. This was Carl's responsibility. He was trying to solve this problem with a skeleton staff as he'd let three of his most experienced chemists move to operations. The combined effect of these pressures resulted in his weeping in the office which in turn betrayed a high level of anxiety.

Carl "I thought to myself, I can't cope and there was this moment of panic and I sat here and shut the door and cried for ten minutes. Then I grabbed myself by the scruff of the neck and said 'don't be such a prat'. I'm fine now, but that's the closest in my working memory I've ever come to actually cracking up and cutting and running - I thought I couldn't face it but of course you do."

Both Mike and Carl spent time in their interviews stressing how much effort they personally had put into supporting the change programme in operations. They both made similar statements about recently deciding to no longer "throw bricks over the wall" (Mike) or "throw rocks into the pond" (Carl).

Mike "I've instigated a number of things myself and I feel that unless I'd have done that it wouldn't have happened. So its almost like the throwing bricks over the wall syndrome and I think we really need to break that and it'll take director level to do it"

Carl "I had to take a break. It wasn't achieving anything. All it was doing was making the pond wavy and filling it with rocks ! It was making ripples in the pond and filling it with rocks and it was a lot of energy to throw them in. Much more

constructive is to decide another way of dealing with the issue and that's by and large what I'm trying to do now. I suppose one has a number of management techniques, persuasiveness is one, aggressiveness is another, but when you get to the point where aggression is just piling on the pressure and nothing else then it's pointless. I've tried bullying, I've tried persuasion, I've tried aggression so what's left but constructive input.

It could be assumed that if they were both *now* unhappy to throw missiles, they had at some point in the past been happy to do so. Perhaps even in the very recent past, e.g. at the time of their previous interviews. To continue this chain of logic further, this also implied that up until their decision to stop "throwing missiles", they had seen their business in adversarial terms i.e. department against department. So, although they were able to talk about the removal of the "blame culture" in Construct Chemicals, their ways of thinking and behaving had still supported it. On some level Aden may have picked this up possibly fuelling his belief that Mike and Carl were more critical than genuinely supportive.

An example of how easily they both slipped back into the "blame culture" was the re-emergence of the issue described earlier as the creation of *heroes and villains* in operations. The one time hero who was rapidly becoming a villain in the eyes of some members of the management team at this time was John Smith (Supply Chain Manager). The problem with John Smith in Mike, Carl and Steve's eyes, was his recurring failure to ensure that manufacturing did not run out of raw materials. In spite of these directors' espousing the extinction of the blame culture in Construct Chemicals, they all spent time during their third interviews criticising John Smith and were keen to give their views a public airing at the next meeting even though Mike at least had already spoken to Aden privately about the issue.

Mike "I'll be looking for some reassurance that it's going to be sorted. All people want is answers as to what's going to happen. I've raised it with Aden informally but if I bring it up once we're together as a group it'll raise the profile of it. It's everybody's problem so raising it in the group raises its profile to make sure it's high on the agenda of things this company needs to sort out.

In many ways the team were about to come full circle as the issue rising in importance for some of the directors (Mike, Carl and Stewart) was the kind of "*witch hunt*" for John Smith (the need to attribute blame), that had caused the first management team meeting in February to flare up when attentions were focused on Mick Rawlins (the now redundant manufacturing manager).

It is important to note at this stage that a damaging block was beginning to emerge between Aden & Malcolm and Mike & Carl. Aden and Malcolm thought that both Mike and Carl were being negative and critical, whereas Carl and Mike felt they were making a great effort to help and be constructive. Aden and Malcolm became frustrated and disappointed in Mike and Carl: Mike and Carl were increasingly viewing Aden and Malcolm as territorial and defensive, because they seemed to resent their constructive interventions. As a result of this block, there was a serious breakdown in

communication during the May management team meeting i.e. the meeting that followed these interviews. This meeting ended in Aden leaving the boardroom mid-meeting and, as the next stage of analysis showed, all the directors becoming concerned with the deteriorating dynamic within their team. Recall that eventually, the team collapsed with Simon and Steve leaving the organisation.

Returning to the points made at the start of this discussion of the April interviews; analysis showed that, in fact, the directors were beginning to converge at this time. Each of them appeared to agree with the basic principles being Aden and Malcolm's change programme: cost control via performance measurement. However, it seemed that this convergence was not as important as the significant differences in outlook that still existed between them. These included, (1) misunderstanding building between Aden & Malcolm and Mike & Carl; (2) Simon's intrinsic need for inclusion; (3) Steve's view of the change programme from the HR perspective i.e. the staff aren't good enough; hire new people. This is an important point as the next section shows that it was these differences between the directors that were driving their interaction in team meetings as opposed to the views that they shared.

(7) Time Four - 16th May 1998

This meeting took place between 11am and 6:30pm. The operations issue was discussed for two and a half hours from 1:55pm to 4:35pm. All of the directors were present at this meeting. This was the most negative of all the meetings attended. During the team's discussion of the change programme in operations, Mike initiated a period of intense questioning about John Smith's performance. Aden became defensive and, feeling under attack, lost his temper and left the room to take a break and calm down. Mike, and Malcolm also left the meeting at this point and the team took a fifteen minute "time out" period to calm down.

Once the other directors had left the room Carl, Simon and Steve discussed their view that the *real* problem in Operations was Malcolm Stanton and the performance of his consultancy. Steve in particular was extremely agitated. Aware of my presence in the room he chose to leave with Carl and vent his anger privately.

The frustration felt by these three directors (which it emerged later in interview was shared by Mike) arose from what they saw was their inability to raise the concerns they had about Malcolm Stanton with Aden. All the directors saw the Malcolm - Aden connection as being very strong. None felt as though they could question Malcolm's ability and the consultancy fee in front of Aden. To my knowledge, none of the directors ever directly challenged Aden about their resentment for Malcolm Stanton. When Carl Kennedy was directly challenged as to why this was the case he made the following comment:

Carl "Frankly its not part of the rules If you're not critical in a constructive and objective way then don't say it. We're into appeasement. Its been a way of life in this company for far too long and now we're paying for it."

The resentment that was present but unmentioned within the team manifested itself instead in the discussion of John Smith's performance. Mike, Carl, and Steve seemed to Aden, to be disproportionately upset about this. Recall that he was unaware of their critical feelings towards Malcolm Stanton. He may have made sense of their anger by assuming it was further evidence of the kind of *witch hunting blame culture* to which he had reacted so strongly to in February. He became defensive and, in the same sort of misunderstanding that had occurred at the first team meeting, the other directors assumed that Aden's defensiveness on behalf of his Operations staff was symptomatic of a general defensiveness and an unwillingness to accept criticism. In short a significant breakdown in communication occurred.

Even though the discussion was just over two and a half hours long there were only six distinct topics discussed. These are summarised in table 6.10 below.

Table 6.10 Key Phases of Discussion in May.

Phase	Topic	Discussants	Time Mins
1	Malcolm opens the discussion with bad news about the automated bagging equipment in the powders plant that had been the focus of the 'stormy debate' back in February.	Malcolm, Aden and Mike being supportive	10
2	Carl brings up a point about 'spill clean' in the powders cell. These are safety kits used to contain any chemical spills which will cost £8 000 to purchase. Aden defers to Malcolm then makes a snap decision without consulting the other directors.	Carl, Aden, & Malcolm	12
3	Malcolm updates the team on the continuing capacity problems in the Resins cell. The new manager Jenny Bell is discussed in a positive light but has been left with many problems that arise from decisions taken years ago. The team have a collective moan about these old decisions	Malcolm, Carl, Mike, Steve & Aden	20
4	Malcolm moves on to discuss supply chain management saying more staff are needed there to support John Smith, the newly recruited supply chain manager. Aden argues this is as a result of the capacity problems in the Resins cell and Martin not yet being familiar with the Construct Chemicals business. Disagreeing, Mike sees John Smith's problem is that he is not focused on the short term and completing orders that are needed now. Aden is being defensive about John Smith's performance. Mike suggests they discuss what extra resource is need in supply chain outside of the meeting. Aden refuses, wanting to air opinions there and then. Mike points out one of the problems is that John Smith is not contactable. Steve agrees and is attacked by Aden. Mike and Aden restate their positions. Carl concludes by saying the decision is up to Aden	Aden, Mike, Carl, Malcolm, Steve with a brief comment from Simon	90
5	Malcolm moves on to discuss the Sealants cell, which is good news with the cell manager working well	Malcolm	2
6	In closing this section of the meeting Mike asks why can't the team cheer up, its not all bad. Steve comments on Aden's defensiveness. They end up discussing the supply chain issue again. Finally Aden in an agitated state suggests they have a half hour break to break the cycle of this repeated argument. When the meeting resumed they had moved off the discussion of operations. The whole meeting ended with Carl saying, "Come on boss let's get the tea and Whiskey, we're banjaxed"	Mike, Steve, Aden, Carl	20

Description & Overall Trends. In many ways this fourth meeting was a repeat of the first. For instance, both meetings had the following in common: (1) Aden behaving

aggressively; (2) other directors distracting Aden and Malcolm from their agenda; (3) flare ups of tension; (4) people issues dominating the discussion; (5) abrupt break in the meeting. However, in terms of the overall mood of the team this meeting was the lowest point of all those observed. The team seemed to be extremely depressed and appeared to be having difficulty communicating effectively. Mike and Aden in particular frequently talked past one another with the conversation looping round to the same point again and again. At one point Mike, believing Aden was not listening, asked for my tape to be rewound to prove what he had just said.

Both the mood and the communication problems appeared to emanate from Aden. The field observation notes taken at the time frequently referred to his generally negative demeanour. Even though five of the six phases of discussion were delivering bad news which was understandably upsetting, Aden seemed especially affected.

Aden "You know we just seem to be plagued by all these irritating faults over and over again"

"It's difficult to sit here and be cheerful about the problems we face, you know. People are working very hard and we're still letting customers down, so I apologise if I can't sit here sort of laughing and grinning about it but I can't. It's the way I am. I just can't."

Many of the other directors, sensing Aden's mood, were making positive and supportive contributions to the discussion. For example, Mike and Carl reassured Aden and Malcolm on many occasions that they were supportive of their efforts and had a sympathy for how difficult their task had been and was continuing to be.

Mike "I can hardly believe how unlucky we've been, I bet some of this stuff has been a real shock to you"

Carl "If there's anyone in my team that can help then you can have em'; take em' with my blessing"

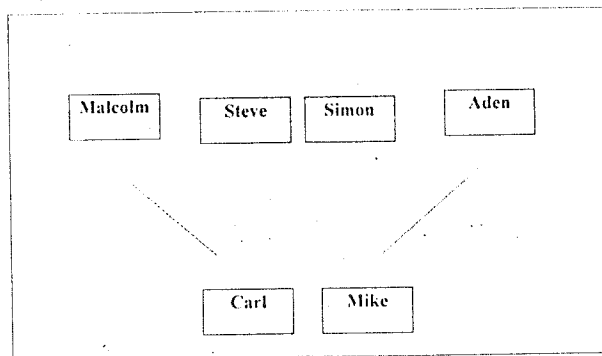
Malcolm recognised this support and commented on it in his final interview. In particular, he noted how supportive Mike had been and had discussed this with Aden. Nevertheless, Aden, as noted in the previous section, had during the meeting misinterpreted Mike's questions and comments as challenges, criticism and impatience.

Perhaps in response to Aden's depressed behaviour, Malcolm took much more of a lead in chairing the meeting than he had on previous occasions. Aden deferred to him to make a decision or definitive comment, on three separate occasions. In addition, Malcolm carried out several chair like behaviours, e.g. canvassing views, making a note of important points (effectively minuting the meeting) and moving the discussion on to the next agenda item when the opportunity arose.

The body language at the meeting was also very revealing. The directors sat around a rectangular table in the order shown in figure 6.5 below. Each time Aden addressed

Malcolm or specifically requested his view, he lent back from the table and talked behind Simon and Steve's backs. The main lines of communication are shown with a dashed line.

Figure 6.4 Seating Positions at May Meeting.



Not surprisingly, this behaviour led to Steve and Simon feeling cut off from the discussion. Steve's later explosion of dislike and lack of respect for Malcolm during the break in the increasingly tense meeting, may have been the result of Aden's obviously deference to Malcolm and his being cut off from the discussion. This, combined with an overall sense of dissatisfaction with the consultancy intervention he had offered in operations, could have accounted for Steve's agitation.

Another noticeable pattern of behaviour, was that Aden appeared to be especially sensitive to comments made by Mike or Steve. He later recalled that he was expecting Mike to be very critical in the meeting and believed he had been responding in terms of what he *expected* to hear, as opposed to what Mike said. Steve was also on the receiving end of Aden's anger on two occasions. The first of these occurred when Steve criticised John Smith. Aden later recalled he believed this particular criticism of John to be unfounded and viewed Steve's comments as unhelpful and reminiscent of the need to blame someone and create villains. A second exchange between Steve and Aden occurred when for the second time in the four meetings observed, Steve challenged Aden's defensiveness; not allowing the others directors to offer constructive criticism of operations. Aden responded sharply to Steve and on the second occasion left the meeting.

1. Carl and Mike had been criticising John Smith and Aden had been becoming increasingly defensive when Steve commented.

Steve "With respect Aden, that's not the point, getting hold of other people is easy cause other people say 'I will make myself available'; they've got bleeps, they've got mobile phones that are connected and you can always get hold of them".

Aden (Irritated) "He does carry a bleep Steve, simple as that he does carry one ! I mean

it's not difficult to get him, I never have any problems. You really aren't being fair to the guy."

Steve (becoming red in the face and turning away from Aden) "But..., (hesitating, 7 second pause) I rest my case."

Aden (Angry) No Steve, come on let's hear it; what is your case. He carries a bleep, he doesn't have to carry a mobile phone as well does he ! He carries a bleep.

Steve (Very quietly and looking at the table) O.K. Aden, if that's the answer, that's the answer.

10 second pause

Simon (Hardly audible on tape) "Well he can use the paging system."

Carl "You can call him on his bleep then I suppose if you don't get him"

By seeking to placate Aden, Carl and Simon failed to support Steve.

Mike "I really think we ought to try and be bit more constructive about the whole situation. We're talking about beepers and whatever else and that's all detail when we need to be putting a plan together and agreeing to it."

2. A little later on Aden is expressing his view to the team that they don't see or seem to appreciate half of the effort the Operations team have been putting in.

Aden "I guess I get the feeling from round this table that you all think there's nothing being done. That's all.

5 second pause

Mike, Carl and Simon all say "No, no,"

Steve "I think you're working incredibly hard, I think Malcolm's working incredibly hard. I think you're putting endless hours in to try and sort it out. But there are a lot of other people here that want to help and you sort of, ... well don't seem to think they can add value."

Aden (Aggressive) EVEN NOW ! Even the way you're talking not, you don't feel that what's been done is enough. There's the impression that 'oh yeah well double shifts is not going to sort the problem, you guys should be doing something else"

Mike (Gentle tone) "I think that problem aside there's something wrong with the dynamics in this team, if you Aden get the impression that the rest of the team thinks you're not working hard enough. Then you know, I think we've got a problem."

Aden (Still aggressive) "No, no, that's not right I didn't say anything about working hard enough. Its the second guessing of the actions that Malcolm and I have to

take."

5 second pause

Mike (Continuing with a calm tone) Right, ok. Well that sometimes seems like 'leave it to us, its our business, we'll sort it'".

Aden Ye... (trails off, 4 second pause then begins again with an aggressive tone) Look, somebody has to take those kinds of decisions (switching the plant to double shifts). You can't all be consulted; not possible ! It falls to me to make decisions and I've made it.

I think its probably best if we take a half hour break OK, its 4pm and well; lets just take a break OK !

These two unpleasant exchanges, plus being ignored culminated in Steve's anger towards Malcolm, whom he ranted about when the meeting broke. Carl, Simon and Mike commented in their May interviews that it had taken Steve a while to calm down after the meeting. He telephoned both Carl and Mike at home that evening to discuss their response to Aden's behaviour.

Simon was quiet as usual. However, when he did comment he was not interrupted by Aden as had been the case in other meetings. Indeed on one occasion, after Simon had suggested the forthcoming stock check should be cancelled to free up production time in operations, Aden commented "thanks for that Simon, good idea". However, Aden's reasonably positive response to Simon in this meeting did not appear to change Simon's usual behaviour. That is, he was not encouraged to offer a greater contribution than he had in the past. This may have been a result of the kind of routinised behaviour observed in Colour Scheme. A quote from his final interview conducted after the May meeting would suggest that this may be true.

Simon "I prefer to take a back seat, especially in Operations because I can only utter words that make the discussion more prolonged. So I just don't say anything"

Alternatively by not contributing Simon may have been wisely avoiding Aden's anger. The most obvious explanation is likely to be a combination of the two.

Reflectivity - Data was available to asses the reflectivity of the contributions each director made to the May management team meeting, based on the views they expressed before and after this meeting. Each director's reflectivity is commented on below.

Table 6.11: A Summary of Directors' Reflectivity in April and May.

Director	Key Theme in April.	Key Theme in May.	Reflectivity During May Meeting
Aden	Concerned with cost, system controls. Frustrated with his TMT	Frustrated with his TMT. Concerned with cost, system controls.	NO he was responsive to others agendas
Malcolm	Concerned with cost, system controls.	Concerned with cost, system controls. Disappointed with the TMT	NO he did a run down of some of the production cells but in the main he was responsive to others agendas
Carl	Intention to be constructive, personal anxiety	Ineffective communication and leadership in operations	PARTIALLY for time 3 NO for time four
Mike	Intention to be constructive	Concerned about lack of leadership in operations	YES for time 3, NO for time 4.
Steve	Poor calibre staff in operations, including Aden and ineffective communications	Highly critical of Malcolm and Aden's management	PARTIALLY for time 3 and YES for time 4
Simon	Positive attitude to progress in operations	Negative about Aden's lack of leadership and the ops staff	NO he hardly contributed

Neither Aden nor Malcolm were reflective of their views as expressed in their April and May interviews. They were never explicit about their overall strategy for the change programme in operations: controlling costs, introducing effective management systems and performance measurement. Again, as previously discussed, both were able to discuss this strategy fluently in their interviews, yet never seemed to have the opportunity to discuss it during management team meetings. Indeed, during the May meeting, Malcolm made a sarcastic comment about the over head projector being too far away from the group saying "is it too strategic for you guys to see". Only he and Aden laughed. Instead of putting their views to the team, Aden and Malcolm appeared to be easily distracted into lengthy discussions of the quality of Operations staff (90mins) and Aden's defensiveness (20mins).

Aden and Malcolm's distraction from their own agendas' is accounted for in different ways. For Aden, it may have been the re-emergence of his desire to not be overridden by other teams members' views, especially when he considered these to be based on an endemic blame culture within Construct Chemicals UK. If he was keen to correct what in his view were the others' mistaken beliefs, this may account for his engaging in discussions that were not relevant to his and Malcolm's overall strategy. A view that Aden held in April, but became more dominant in May, was his frustration and disappointment with his team. This was not explicitly voiced in the meeting, but his keenness argue against possible manifestations the blame culture in the team, would suggest an implicit reflection of at least this element of his views.

For Malcolm, the lack of a close reflection of his views as expressed in interview, may have arisen from his role as a consultant and outsider within the team. For example, Malcolm had no formal power to take control of the meeting and forcibly change the agenda that had emerged. If Aden had attempted this, it is likely that Malcolm would have followed. As Aden was distracted into other discussions, Malcolm may have simply been forced to remain silent. When it was possible, he did intervene and move the meeting on to another subject. But overall, he tended to wait to be asked a direct question before fully engaging in the heated periods of discussion.

Carl, Mike and Steve were partially reflective of the views they had expressed in interview before the meeting. Both Carl and Mike had discussed at length, how supportive they intended to be; to 'stop throwing bricks over the wall'. Many of the contributions they made to the meeting were highly supportive of Aden (although he did not interpret them as such) and Malcolm's efforts; e.g. Carl continually volunteered staff to help. Steve also was selectively reflective of some of the views he had expressed during interview. That is, he raised the topic of Aden's defensiveness and was openly critical of a key member of the Operations management staff.

For Steve there may have been a certain degree of professional responsibility attached to his desire to raise these issues. As HR director, he may have felt it was his place to do so (as already discussed). In addition, Steve had demonstrated a pattern of voicing politically sensitive views. In some way he may have either not cared about being 'mauled' (Carl's description) by the MD or, have naturally expected it. His furious response to Malcolm who joined in Aden's rebuke of Steve would suggest that the former may not have been the case. The information Aden, Carl and Mike volunteered about the way Aden's predecessor (Catharine Anderson) ran meetings (regularly attacking directors who challenged her), would suggest that Steve may have expected to be 'mauled' and consequently saw it as less of an event. Perhaps Steve was operating on an old mental model of how management team meetings in Construct Chemicals were run. However, with no concrete data from the meetings when Catharine Anderson was MD, this is only conjecture

Finally, Simon as usual was not reflective of his views. This may have been due to his overall lack of participation in the discussion which for Simon, was becoming routine behaviour and a pattern that was observed in three of the four meetings; April being the exception.

So at time four the most powerful members, Aden and Malcolm, of the team were not reflective of their views. Mike and Carl demonstrated their support but also their critical opinions of Operations and in so doing, were partially reflective of their views expressed in interview. Steve, risked some political capital by being reflective of his concerns about Aden's defensiveness and Simon, following his established pattern contributed very little and complied with the discussion.

(8) May Interviews.

When the interview transcripts, VCST and *COPE* maps collected in May were analysed, they produced the patterns of overlap shown in figure 6.6 and table 6.12 below.

Figure 6.6 Groups of Overlap in May.

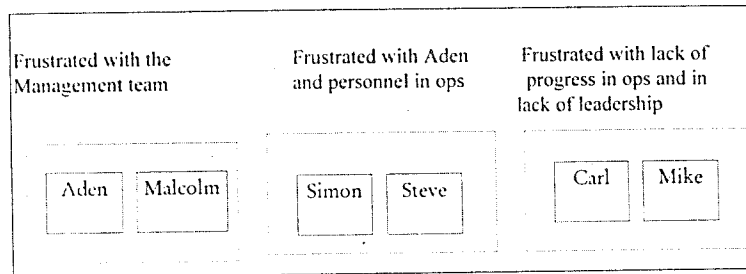


Table 6.12: A Summary of Director's Central Issues in May.

Aden	Malcolm	Simon	Steve	Carl	Mike
Cost control and systems management via measurement of performance in local units as well as a sense of frustration and disappointment with his team	Cost control and systems management via measurement of performance in local units, as well as a of disappointment with the top team	General resentment about the calibre of personnel in operations, specifically about the lack of leadership.	Resentment about Malcolm's involvement in the management of the issue and a real sense of frustration in not having Aden as CEO, closely linked to concern over OD recruitment.	Concern about the lack of cross departmental communication and leadership from the top	Lack of leadership from the helm and its implications throughout Operations and Construct Chemicals as a whole.

A general trend worthy of note at this stage, was the high levels of negative affect that appeared to be present in the team. In this last phase of interviewing, each director seemed to have reached a low point, with feelings of disappointment, frustration and general negativity running high. A phenomena called 'emotional contagion' discussed by authors such as Parkinson (1996) may account for this. Emotional contagion is the "automatic tendency to catch the mood of the person with whom you're interacting" (Parkinson, 1996 p 668). So for the Construct Chemicals team, one person's negative interpretation of their current situation may well have spread through the whole team.

In terms of the key themes identified as central to the way directors made sense of the operations issue, there was some consistency from April and some change. For Aden, the key theme that remained central was performance measurement and the positive effects that would rebound across the whole function because of it. This consistent message emerged as a core theme for Aden across all four time periods, yet was mentioned by no other director (with the exception of Malcolm). A second theme that was present in Aden's interview at this time, was his concern that the management team simply did not communicate with each other frequently enough. This lack of communication had, in Aden's eyes, extremely negative implications.

Aden "Those meetings are pretty stressful and that's bad news. We're waiting all month before we get together and then the meetings themselves are stressful and confrontational and not very productive. We're going to struggle as a company if that's the best the management team can do."

"I'm not sure that the management team act like a team at all. Something drastic has to happen"

In a follow up meeting after formal data collection had ended, Aden stated it was at this time he had begun to feel that Simon had to leave the team and had already made his decision to remove Steve.

Aden "Each day that goes by my risk as MD is less and less, you know it's got to the point where he's (Simon) dispensable"

The lack of communication amongst the top team of Construct Chemicals is likely to have been the root cause for tension in the February and May meetings. That is, the directors were not sharing their true views and feelings with one another. They were relying on attributed versions. In addition, in the light of the limited amount of effective communication, many of these attributions may have been incorrect (misattributed). However, in Aden's case, he did raise his own defensiveness as a problem. He recognised that it seriously limited the information he was using to make sense of situations.

Aden "Well I can be very defensive, the barriers do go up with me when I believe my people are being criticised. So to have them (Operations personnel) criticised or undermined, I will immediately, for whatever reason it is, my defences will go up and that's all I hear."

Aden gave an example of his limited use of information in the May meeting. He explained how he had assumed Mike would be negative, and did not really listen to what Mike was saying. Consequently, he failed to attend to the positive contribution Mike was making. This only served to frustrate both Mike and himself.

Aden "Now interestingly Malcolm didn't hear the same things I did from Mike. Malcolm heard something completely different. Malcolm thought that Mike was being incredibly supportive, he probably genuinely was, and it was my fault. I heard it in a different way but my barriers go up. I didn't even wait to hear what he had to say. It's a cutting example of where my behaviour was clearly not right, you know. I'd not taken the time to hear what somebody was actually saying"

Malcolm the most consistent interviewee throughout, also had comments to make about the conduct of the last management team meeting. In the main though, his discussion was still centred around a run down of performance measures in each of Construct Chemicals' production cells. His extremely task focused and functional approach was entirely consistent with his consultancy role. That is, he had neither the emotional attachment nor the detailed knowledge of the organisation to be distracted from his main

purpose. However, in this his final interview, conducted just before he left the company, his thoughts had shifted to consider the lack of understanding that had emanated from the other directors.

Malcolm "I'm not sure that people (the other directors) believe we (he and Aden) know what the problems are. In fact I'm not at all convinced that THEY understand it ! They just don't believe we're doing everything we can."

He went on to discuss each director in turn. He saw Mike as guardedly believing in him and Aden. He saw Carl as somewhat mischievous and Steve and Simon struggling to understand the process at all. He believed that the team were in great need of development. There was no hint (in either his or Aden's interview) that he suspected that there was any resentment being harboured against him by the other team members, all of whom discussed their negative views of him.

Steve was particularly negative about the role Malcolm had played in the top team's management of the change programme operations. In fact, several of the other directors (Carl, Simon & Mike) each mentioned how irate Steve had been about Malcolm's failure to do the job he'd been paid for. The strength of Steve's feeling can be judged from the following quote.

Steve "I'd have to say my regard for him (Malcolm) is low. He's a consultant who sees us as a very good source of income and, well its like a doctor, if he makes everybody well then there'll be no illness in the world. This guy's a consultant, we paid him £40,000 to sort the problem, he failed miserably so he's got f**k all to do with our company !"

Steve was the most aggressive in his criticism of towards Malcolm, (even insinuating that Malcolm deliberately failed to fix Operations so as to continue to earn fees). But the other three directors harboured a resentment for his presence in their team and felt he had failed them.

Mike "I believe that Malcolm Stanton is not fulfilling the role we required of him. The other thing is I've got a real downer on **** (the consultancy firm) at the moment, they just haven't been value for money"

Carl "What we have is Aden as acting ops directors who doesn't understand operations and freely admits it: and we have Malcolm Stanton who is a consultant and therefore doesn't have the long term ownership and commitment and it bloody well shows. This leads to our frustration, cause they're gliding over the bumps meanwhile Mike is taking all the body blows"

Simon "In my view Malcolm was brought in to move factories and that's ALL he's interested in doing. He's been moved into a pseudo ops role but he's very far from getting to grips with any of the issues."

As well as agreeing about Malcolm's performance as one of their acting Operations Directors, the Construct Chemicals directors also agreed about the basic deterioration in

the group dynamic. Although the idea of some form of group development was discussed in all of their interviews, none of the directors had discussed it within the team environment. This lack of communication had the potential to lead the team into yet more difficulties. Especially as it seemed at least two members had very different views about how team members ought to relate to one another and what form of development should take place.

Mike "We need to know more about each other; we don't know enough about each other."

Interviewer "To know what ? What is the essence of what you'd be striving to know "

Mike "Relationships basically. There's no question if you're closer to someone it changes the basis of the team relationship. Some form of team development is appropriate because people are going to have opinions of me already, if we delve deeper then they can either be confirmed or otherwise. I see the benefits in going out and getting pissed together, there would be value in that because it starts to develop the team.

When, quite independently, Aden discussed his own ideas about team development via socialising, they were quite different.

Aden "It's all a bit superficial that sort of thing. Maybe it's to do with the fact that I make friends slowly, maybe due to the fact that I've changed jobs so regularly, or whatever. It might be natural caution. Maybe it'll happen naturally but for me it takes time."

Moving back to a discussion of each individual's key themes, it emerged that in most cases (with the usual exceptions of Aden & Malcolm as already discussed) a considerable shift had occurred in the attentions of each director to become much more insular and focused on the top team, Aden's performance and the recruitment of a new Operations Director.

Mike's attention was now focused on putting a stop to the "chaos" or "crisis management" that had over taken the operations initiative where everyone was dashing about trying to help and no one at the top was in charge. In Mike's words the company was "showing real signs of lacking someone at the helm."

Simon and Steve expressed similar dominant themes, using up the majority of their interview time discussing the need for guidance from the top and the immediate recruitment of the new Operations Director. Simon shared his view that Operations was "all crumbling down" and this was primarily because Aden didn't have the "skills or the dedication to pull it together". Steve talked about "wanting his boss back", explaining that because Aden had spent all his time on operations, the team felt they had no MD in overall charge.

Carl also spent much of his time discussing the breakdowns in communication both between functions i.e. Sales, Technical and Operations and the breakdowns in communication within the management team. Carl had analysed the lead up to Aden walking out of the last management team meeting and showed an awareness of the misattribution of views that was occurring between himself, Aden and Mike.

Carl "Mike and I were trying to give Aden detail as to why things weren't happening (i.e. from a shop floor perspective why Aden and Malcolm's initiatives were not having an effect) he thought we were going for him. The disconnect continued and kept getting ramped up to the point where Aden took his bat and ball home, metaphorically, and got into defensive mode. That's why he began to lash out verbally and that's when the meeting had to end"

In summary then, in May, the majority of the directors saw the central issues in Operations Management as a lack of leadership, breakdowns in communication and inadequate personnel. And, at the root of these problems was Aden's inappropriate decision to manage Operations himself and his increasing defensiveness when challenged in anyway. So from a position where Mike and Carl at least had begun in February discussing the operations issue from a strategic and global perspective, they ended seeing the issue in terms of poor relations within the team and within broader cross departmental communication in general.

6.5 Summary

In this chapter the *case* of Construct Chemicals was presented. The chapter began by recalling the propositions that had been developed and amended in the second case. The second section of the chapter then presented background information on Construct Chemicals UK, the top management team and the specific strategic issue focused on. The third section explicitly operationalised propositions IIb, IIIb & IVb and the patterns anticipated in this case, as well as fully explaining the methods used to explore them. Finally, the fourth section offered a chronological presentation of the analysed data collected in both interviews and meetings over the four month period of February - May 1996. Inevitably some degree of interpretation appeared in this last section that described the analysed data collected in Construct Chemicals: i.e. the write up of this section would have been considerably more lengthy if some initial connections had not been made. The next chapter offers further *interpretation* of this data in terms of propositions IIb, IIIb & IVb.

CHAPTER SEVEN

Case Study Three: Construct Chemicals Interpretation

7.1 Introduction

This chapter follows on from the previous chapter in that it offers an interpretation of the events described there in terms of propositions IIb, IIIb and IVb. These propositions that were carried forward from the second case: Colour Scheme, are discussed here in separate sections. In addition, data that these propositions could not account for is pulled out and considered in a separate section. Here, the existing propositions are amended and developed. A final section summarises and concludes the entire case.

7.2 Discussion of Proposition IIb

Using all four months of data collected and analysed as presented in Chapter Six, the propositions explored in this case are now considered in turn. Any trends in the data and patterns that could not be accounted for by these propositions are discussed in the next section; 7.5.

Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

The TMT of Construct Chemicals was selected as a potentially *functional* team that would be more likely to converge / agree about their strategic issue. Team members were also expected to gradually develop teamwide overlap over the four month period. At the end of this time it was anticipated that the team could display one of two patterns: (1) tighter overlap based on the agreement developed overtime (Walsh et al. 1988); (2) or a trend of continual dissipation of any teamwide overlap that emerged during meetings over the four month period (Langfield-Smith, 1992). As the data collection was spread over time (four months) it was expected that any incremental development of convergence and cognitive overlap would be relatively enduring. In short the pattern expected if proposition IIb fitted the data would be: dyadic or subgroup overlap at the beginning of the fieldwork, growing agreement based on the most influential team member's overlap, sustained teamwide overlap at the end of the fieldwork period.

Each of the eight separate periods of data collection are now reviewed in terms of this proposition and its specific expectations. It is important to note that this proposition is

not concerned with a *decision*, but rather the team reaching agreement and converging around a general course of action over time: i.e. accepting and supporting Aden and Malcolm's programme of change in Operations.

In Chapter Two, strategy development was operationalised as an everyday (Johnson & Huff, 1998) and emergent process (Eden & Ackerman, 1998). The teams accessed here were not expected to engage in the kind of decision making activity operationalised as selection between options A, B, C etc. as has been assumed in laboratory based decision making research (see Lipshitz, 1993 for a critique). Rather, the strategy to be followed by the organisations studied was expected to develop incrementally and a particularly important environment for this activity was TMT meetings as a forum for discussions and negotiations.

In the first case convergence around a *decision* was reached. In the second case the team did not converge, nor did they make a decision. In spite of this enpasse a course of action was later implemented by Jonathan. In this final case, over the four months of data collection in Construct Chemicals, the team were not required to make a decision per se, but rather to come to an agreement about the best way to bring about change in their Operations function. Moreover, because of the involvement Operations had in all other areas of the business, all the directors were required to agree with and support an overall strategy for change: i.e. converge around a general course of action.

It became apparent over the four months of data collection in Construct Chemicals, that the basic strategy being followed by Aden and Malcolm did not seem to have been clearly espoused to the rest of the management team and was not offered for consultation. Moreover, the remainder of the team had their own clear idea about what ought to be changed in Operations and this was in opposition to Aden and Malcolm's view. The team did not converge and continued to disagree about the program of change in Operations over the entire four month period. A brief summary is given below.

Aden & Malcolm, apparently without consultation, presented the team with a strategy for their program of change in Operations: introducing a philosophy of performance measurement and tight control across all four of their production cells. At the time of data collection this was in its early stages of development; i.e. still introducing measurement systems. Consequently, Operations were not delivering big improvements in productivity, production planning and supply of product on time. At this early stage of their program of change, Aden and Malcolm were unwilling to entertain making important decisions (i.e. personnel decisions) until they had established which areas of Operations were working effectively and which were not. Alternatively, the other directors who had been based in Construct Chemicals for a longer period than either Aden or Malcolm, were convinced that the personnel in Operations were the problem and if key staff were replaced productivity etc. would improve. This fundamental disagreement persisted throughout the fieldwork. Aden and Malcolm saw the other directors as impatient. The other directors saw them as slow to take the tough decisions urgently needed to resolve the difficulties in this area.

(1) February Meeting - There was no overall convergence of views at this rather 'stormy' meeting. In addition, the views of the most influential team members (influential in terms of the change programme in Operations) did not dominate the agenda. That is, Aden and Malcolm were distracted from their agenda by challenges from Mike, Steve and Simon.

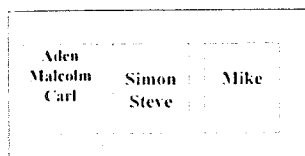
The important questions in terms of developing proposition 11b were *why* did these influential individuals become distracted and *how* did the directors with less influence manage to distract them? In February, it appeared that Aden was especially susceptible to being distracted as he was keen to react to the manifestation of what he believed to be a blaming culture in his team. Alternatively, although Malcolm had influence regarding the specific Operations issue, this did not extend far enough to allow him to take control of the meeting and force his and Aden's views back to the top of the agenda. As mentioned previously, if Aden had tried to regain control of the agenda Malcolm could have supported him, but was unable to initiate such a move himself.

In terms of the other directors, the question was *why* did they wish to exercise control of the agenda? There are several possible explanations for this. Firstly, in the past, the Operations function had been very badly managed. The previous Operations Director was immediately removed from his position upon Aden's arrival as MD. The existing directors were used to an Operations department that was problematic and, as it encroached on all of their own areas, were probably used to having to be relatively proactive and interventionist in its running. If this was the case, then they could have felt compelled to raise issues they saw as problematic during February's meeting. Second, and closely linked, it was argued in the previous chapter that during the February meeting, there may have been differing views of appropriate directorial roles. For example, Mike claimed that in his view, constructive comment and criticism ought to be welcomed and valued. This belief may have led him to voice some of the criticisms of Operations that distracted Aden and Malcolm from their agenda. Finally, in being vocal and critical, Mike, Steve and Simon (recall Carl was relatively quiet during this meeting) may have been finding their voices and establishing a way of interacting with their new MD. As Carl already knew Aden well and he would not have been compelled to be as vocal.

In summary then, during the February meeting, the expectation that there would be some convergence and that this would be based on the views of the most influential directors, was not found to be the case. Instead there was no convergence and Aden and Malcolm were distracted from their agenda.

(2) February Interviews - Overlap was found to occur in two subgroups with one director (Mike) not sharing his key concerns with any other team member. The overlapping groups are shown in figure 7.1 below.

Figure 7.1 Groups of Overlap in February.



Aden, Malcolm and Carl all shared the theme of focusing on controlling costs within the operations function. Simon and Steve were concerned with people issues and Mike was primarily concerned with the need to develop a proper strategy for the change programme.

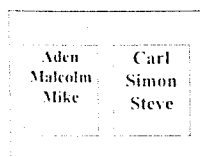
So at this time, proposition 11b partly fitted the data: there were sub groups and dyads of overlap within the team. However, these dyads could not reflect convergence developed in the meeting as, during their February meeting, the team did not converge but rather disagreed.

(3) March Meeting - In this meeting Malcolm, influential in terms of Operations, dominated the airtime and the agenda. The other directors, including Aden, were relatively quiet. This may have been the manifestation of convergence: agreement within the team. For instance, in the phases of the discussion where Malcolm described the plans and progress of their program of change throughout Construct Chemicals' four production cells, there were virtually no interruptions. So in this meeting, the data appeared to fit proposition 11b. That is, the team seemed to be in agreement with the views of the most influential directors: Aden and Malcolm.

However, it was also pointed out in the previous chapter that Carl at least had accounted for his lack of contribution and intervention in Malcolm's presentation in a different way. As quoted previously, he claimed that he had allowed Malcolm to dominate the meeting. This was not because he necessarily agreed with him, but because he felt Malcolm needed to regain some respect after he had been heavily criticised in February's meeting. Other directors may also have shared some element of Carl's sentiment, or have been keen to prevent another confrontation with Aden. Either way, no other director mentioned it in their interviews. Finally, as noted in the description of this meeting, all the team were somewhat subdued. In Aden and Carl's cases at least, they attributed this to the fright the accident in the plant had given them. It is possible that the entire team may have sensed this and been subdued themselves. This effect is described as 'emotional contagion' (Parkinson, 1996) and is picked up in section 7.5 that follows.

(4) March Interviews- Overlap was found to occur in two subgroups. The overlapping groups are shown in figure 7.2 below.

Figure 7.2 Groups of Overlap in March.



Aden and Malcolm shared the theme of focusing on cost control within the Operations function. Whereas Aden and Mike overlapped as they both shared a sense of frustration. Aden was frustrated with his own performance whereas Mike was frustrated with his own battle between contradictory short and long term pressures being inflicted on his department by the change programme in Operations. Simon and Steve were both still concerned with people issues: Steve being more positive than Simon. In addition, at this time Carl was also focused on people issues, primarily the transfer of some of his staff to Operations.

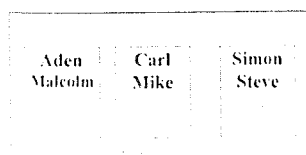
So at this time, proposition IIb, fitted the data in that there were two sub groups of overlap within the team. However, there was no reflection of any convergence or agreement based on the views of the most influential team members. In fact, even Aden and Malcolm demonstrated overlap more loosely than they had before the meeting. This was primarily attributable to Aden's inward focus at this time, as he attempted to resolve the anxiety that the accident at the plant had promoted. The fact that the apparent convergence in March's meeting was not reflected in the interviews that followed, may indicate that some of the suggestions made in the previous sub-section were correct. That is, that there was no genuine convergence in the March meeting and directors were silent for other reasons.

(5) April Meeting - The April management team meeting was somewhat unusual in that only three directors attended: Aden, Mike and Simon. In addition, there was very little discussion of the change programme in Operations. What was discussed was simply a repetition of issues raised by Malcolm in the March meeting. However, both Mike and Simon seemed to be positive and in agreement with the initiative that Aden represented. So in this case, proposition IIb fitted the data in that the view of the most influential team member (Aden) dominated the discussion and that the other directors converged around it.

Again the interesting question in terms of developing proposition IIb was to ask how this was achieved in this meeting. As described in Chapter Six, this meeting was informal, chatty and relaxed. Mike and Simon listened to Aden's points and Aden himself was more confident and less defensive. Consequently as a small group, they were able to be more task than relationally focused. In short proposition IIb's fit with the data at this time was context dependent.

(6) April Interviews - Overlap was found to occur in three subgroups. The overlapping groups are shown in figure 7.3 below.

Figure 7.3 Groups of Overlap in April.



Aden and Malcolm overlapped as they were both happy with the progress of their change programme. However they were also both frustrated by the attitude of other team members. This frustration manifested in shared views about the other team members reticence to co-operate fully with their program. Mike and Carl overlapped as they too shared a sense of frustration. However, their frustration was with the speed of progress in Operations. Nevertheless, in their April interviews both Carl and Mike expressed how supportive they had been and wished to continue to be. Simon and Steve were still focused on people issues, with Simon more positive than Steve at this time.

So at this time, proposition 11b, fitted the data in that there were two sub groups of overlap within the team. However, as three of the directors had not been present at the April meeting, there could be no reflection of convergence or agreement in their views. However, the three who were present at the meeting may have reflected it in their views. In Simon's case, although his criticism of Aden was toned down and he generally voiced more positive support for the change programme, he still made sense of it primarily in terms of people issues. Consequently, the agreement that had been achieved in the meeting had in his case dissipated. Mike overlapped with Aden in the sense that he was keen to help to make Operations work, but was opposed in that he was extremely frustrated by progress where as Aden was pleased.

(7) May Meeting - In this, the final meeting observed there was no evidence of teamwide convergence. In fact there was evidence of the opposite. The team had regressed to the kind of debates they had been having in February. The most influential team members were not dominant but instead were distracted by the people issue argued by Mike, Carl and Steve.

In much the same way as in February, Aden and Malcolm were distracted from their agenda by having to respond to the issues raised by Mike, Carl and Steve. It appeared that Aden was again easily distracted as once more he believed the blame culture to be manifesting itself in his team when there was widespread criticism of John Smith the Supply Chain Manager. In addition, as an outsider, Malcolm had limitations on the interventions he could make to re-prioritise his own agenda.

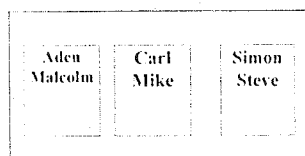
Again, as had been the case with the data collected at the February meeting, asking the question as to *why* these directors wished to override Aden and Malcolm's agenda was important for the development of proposition 11b. Mike and Carl may have felt compelled to comment and be critical of the progress of the change program and in particular John Smith as they were both very involved coping with the knock on effects that Operations getting it wrong was having on a daily basis. Carl had lost a lot of his senior staff to Operations and Mike was fielding daily phone calls from irate customers. This level of involvement may have, in their eyes, made it appropriate for them to be involved and critical in the meeting. In addition, both of these directors were high scoring extroverts. It would therefore follow that they would be more likely to prefer to voice their view, living as they did very much in the external world.

In Steve's case, his level of involvement in the Operations change programme was not as great as Mike and Carl's; neither was his extroversion score. However, during the meeting, he (and Simon) had been increasingly ignored by Aden who lent behind them to talk to and make eye contact with Malcolm. Also, Malcolm had made a couple of jokes at the other directors' expense and Aden had deferred to him on several occasions. Consequently Steve had become angry. It may have been that, as Steve felt he could not directly attack Malcolm Stanton, he tried to transfer some of his negative feelings by projecting them towards John Smith instead. In this way, his compulsion to comment and override the view of the dominant directors could be accounted for. This complex form of psychological manoeuvre is discussed in a sub section of 7.5 that deals with psychodynamics in the boardroom.

In summary, the data collected in the May team meeting did not fit proposition IIb. The most influential directors did not dominate the meeting and the team did not converge. Instead it came to an abrupt halt and when reconvened, bypassed the operations issue altogether.

(8) May Interviews - As at all other times, overlap did occur in pockets in the Construct Chemicals management team, but never spread teamwide. In the final round of interviews there were three dyads of overlap. These remained consistent with those found in April and are shown in figure 7.4 below.

Figure 7.4 Groups of Overlap in May.



The overlap that did emerge within these dyads was not based on convergence at the meeting that preceded it and so proposition IIb only partially fitted the data collected. By the time the final interviews had taken place with each director, each of their key themes had changed from their first interviews in February. In May, Aden and Malcolm were both primarily concerned with the disappointing attitudes they had seen displayed in the team and with the need for team development. Conversely, Carl and Mike were concerned with the lack of leadership, whilst also stressing the need for team development. Finally Simon and Steve remained consistent focusing on the people issues in Operations.

Overall Summary - In terms of the development of collective cognition as overlap, some interesting patterns were found in Construct Chemicals. There was a certain degree of consistency in directors' overlap over all four months. For example, Aden and Malcolm were consistent throughout. Simon and Steve were also consistent with the exception of their March interviews. Finally Carl and Mike overlapped in both April and May. This may have been the beginning of an enduring pattern as appeared to be

the case with Aden and Malcolm and Simon and Steve. However, there was no data available to test this idea.

The overlap that existed between individuals, appeared to differ in terms of how *sustained* the overlap between individuals was and the *consistency* of the themes on which they overlapped. The different combinations are listed and described below. Importantly, each of these combinations had associated with it a different set of precursors. These are also discussed.

i) Thematically Consistent & Sustained Overlap - In this form of overlap, individuals repeatedly converged on certain themes and these themes remained consistent over time. That is, the same people agreed about the same things. Aden and Malcolm overlapped in this way as did Simon and Steve.

It appeared that the precursors for this form of collective cognition were: collective responsibility, trust, respect, and similar circumstances. To clarify this, Aden and Malcolm both had the pressure of ultimate responsibility for the management of Operations. It may be reasonable to assume that this would have focused their minds on a single plan of action to be executed. Consequently, the reappearance of a single and overlapping theme may be expected. In addition, they referred to each other's ability and their mutual trust during interview. It would seem that for them, the sharing and ready acceptance of one another's views, was supported by faith in each other's judgement and that this in turn, lead to sustained agreement over time; i.e. not continually questioned and reshaped.

In Simon and Steve's case, the most obvious precursor to their overlap was their shared circumstance; i.e. on the outside edge of the team with little influence. Simon and Steve shared the same predicament in many ways: they both travelled long distances to work (over 90 minutes each way and often in the same car); they had both been based and isolated, at the run down, and demoralised Acton Plant; and eventually both lost their jobs. Simon and Steve frequently communicated with one another both inside and outside of work time and not surprisingly, their opinions coincided on a whole range of issues. Their personality profiles also converged. On the EPQ measure, they were both introverts.

ii) Thematically Variable but Sustained Overlap - In this form of overlap, although some individuals repeatedly converged, the theme upon which they converged was not necessarily sustained over time; i.e. the same people agreeing about different things. This was the case on two occasions for Carl and Mike. This form of overlap may have been dependent on a generally high propensity to identify with the other person. For example, Mike and Carl communicated regularly inside the work environment, they both had very high extroversion scores and they shared a professional situation of significant pressure on their own departments resulting from the inefficiency in Operations.

However, it is important to recall that in his first interview, Carl stated that he did not trust Mike. Mike made no comments about not trusting or not feeling close to Carl and categorised his relationship with Carl as mutually beneficial. Although Mike and Carl may not have been close per se, they may have both been politically astute enough to hold each other within sight as useful allies.

iii) Thematically Variable and Temporary Overlap - This form of overlap appeared when individuals converged on varied themes but only in one of the months. This form of overlap occurred in Construct Chemicals when an external event, jointly experienced by the individuals who were overlapping, had prompted a sense of shared identity that had not previously been present. For example the accident that occurred in March, united Aden and Carl in a sense of shared responsibility. Their communication increased at this time and consequently their cognitions demonstrated some degree of overlap. So in this instance high levels of communication in the short term sparked by a shared extraordinary experience were precursors to overlapping cognition.

Each type of overlap is represented in figure 7.5 below.

Figure 7.5: Representation of Four Types of Overlap.

		<i>Theme</i>	
		Consistent	Variable
<i>Longevity</i>	Sustained	i	ii
	Temporary	-	iii

Proposition IIb as it was carried forward from the second case, fitted the data in that overlap was found to exist in sub groups or dyads in all four months. However, at no point did this overlap spread teamwide. Regarding the development of proposition IIb, it is important to note that three forms of cognitive overlap were found to exist within the top management team of Construct Chemicals in just four months of observation of one strategic issue. Also, of interest was the fact that individual's displayed the ability to overlap with different individuals and in different ways over time. The precursors that seemed to be related to this overlap included: mutual responsibility, communication level, trust, respect and shared experience of extra ordinary external events. For the sake of clarity, these are listed in table 7.1 below.

Table 7.1 Precursors to the Development of Collective Cognition as Overlap.

Thematically consistent & sustained overlap	Thematically variable but sustained overlap	Thematically variant & temporary overlap
Mutual responsibility Trust Respect Shared situation	Shared situation Similar personality type High level of communication Mutual beneficial relationship	Shared experience of an extraordinary event.

Proposition IIb was amended to take account of these findings. The first part of the new proposition is shown in the box below.

Proposition IIc - part one.

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* in various ways depending on the *consistency* of the theme on which they overlap and how *sustained* the overlap is. The development of each type of overlap that exists between dyads or sub groups within a team, may be dependent on a series of context dependent precursors.

The second part of proposition IIb was concerned with the convergence of the team around the views of the most influential members. That is, in a team meeting, any convergence of views or agreement reached was anticipated to be based on the views of the most influential team members. In Construct Chemicals this part of proposition IIb was found to fit the data half of the time (March & April). In the other two months the team were not able to converge or reach agreement of any kind. In fact, open conflict occurred (February & May). It has been argued above that in March, there was actually no genuine convergence, rather that team members *acquiesced* and allowed Malcolm to dominate the airtime. In April's informal meeting with only three directors present, it was more likely that the agreement between Mike, Simon and Aden was genuine. However, this too dissipated after the meeting.

The more interesting months in terms of developing proposition IIb were February and May, when, for a variety of reasons the most influential directors (in terms of Operations) were *distracted* from their agenda by others. The questions that were explored in the data collected in both of these months were *why* were Aden and Malcolm distracted and *how* were other directors able to distract them. The explanations found generated a list of factors that can mediate the relationship between overlap between influential individuals, their dominance of the team's agenda and the team's ability to converge or agree. Again for the sake of clarity, each of these factors that have already been explained, are listed in table 7.2 below.

Table 7.2: Factors that Mediate the Relationship Between Overlap Between Influential Individuals, Their Dominance of their Team's Agenda and the Team's Ability to Converge or Agree.

How - Aden & Malcolm were distracted	Why - Other directors overrode their influence
<ul style="list-style-type: none"> - Misinterpretation of motive (blame culture). - Lack of formal influence to intervene. - Frustration and lack of confidence forcing defensiveness. 	<ul style="list-style-type: none"> - Beliefs about appropriate directorial role. - Frustration at being sidelined manifesting in critical stance. - Concerns that encroach on own area of responsibility. - Establishing a <i>voice</i> in the group. - Extrovert personality type.

The second part of proposition IIb was amended to take account of these findings. The new version of this entire proposition, IIc is shown in the box below.

Proposition IIc

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* in various ways depending on the *consistency* of the theme they overlap on and how *sustained* the overlap is. The development of each type of overlap that exists between dyads or sub groups with in a team, may be dependent on a series of context dependent precursors. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. However, there are a series of factors that may prevent this occurring. In addition, even if the team does converge, this may dissipate once individual members are left alone to make sense of the agreement reached.

7.3 Discussion of Proposition III

Proposition III was first put forward in case study one to account for data that fell outside the explanation IIb was able to offer. It was then carried forward to case study two where, in its amended form, it was found to offer the best explanation of the data collected. This amended version of proposition III is shown in the box below and has been labelled proposition IIIb.

Proposition IIIb

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level, issue based cognitions, their behaviour and contributions to discussion in team meetings could be the product of their shared social schema of how to interact during team meetings. This distributed network of knowledge may or may not assist in the construction of agreement.

In University Business School and Colour Scheme, there was evidence to suggest that a major influence on Directors' behaviour in important management team meetings, was the routine way of behaving that had become established over time. In University Business School, Bill and Peter had dominated the meeting. Their colleagues had allowed them to do so, even though at least two of them had doubts about the view they were expressing. In Colour Scheme, over 65% of the discussion of their strategic issue was classified as routine. Three routines emerged: locking antlers, parenting and withdrawing. In addition, in the interviews conducted before the team meetings, accurate expectations of the roles that others would play (i.e. an awareness of the routinised behaviour within the team) were expressed. This accurate prediction of roles,

and their subsequent manifestation in 'routinised' behaviour in the meetings observed, suggested that there was in some sense of a shared social schema that each director held to a greater or less extent, of the way their team usually interacted during their meetings.

In University Business School, the routinised behaviour assisted the team, in that they were able to arrive at a decision to which all members agreed. Alternatively, in Colour Scheme, the routines that were prevalent in this team actually hampered their ability to arrive at agreement or even converge in any respect. This suggested that Colour Scheme may not be a functional team.

The TMT of Construct Chemicals' was anticipated to be relatively functional. Any distributed network of knowledge of how to interact effectively as a team was expected to assist in the construction of agreement to a general course of action over the four months of data collection. But, they were in part a new team (Aden had only just arrived as MD, Mike had been on the management team for only seven months and Malcolm who attended his first meeting in February) and the distributed network knowledge of how to interact was not anticipated to be fully developed. The pattern anticipated in the data was: micro level, issue based cognition was expected to be more dominant in the discourse at team meetings and, in line with IIb, the most influential team members were expected to make the greatest impact in these discussions. The analysed data presented in Chapter Six is interpreted here with respect to these predictions.

In section 6.2 of the Construct Chemicals case, background information was given about the company, the informants and the strategic issue. Exemplar quotes were taken from the informant's first interviews where they were asked about their colleagues and their relationships with them. In University Business School and Colour Scheme, informants had discussed role expectations, and the personal characteristics of each of their colleagues at this point. However, in Construct Chemicals, the comments that did address role expectations often contained statements of uncertainty, i.e. "I'm not sure how he'll behave" and in the main, informants tended to focus on their colleagues personal characteristics rather than predicting their behaviour. In this respect at least, the data collected in Construct Chemicals matched what had been anticipated in proposition IIIb. That is, this new team had yet to form concrete role expectations of one another and therefore were not likely to share a social schema of how to interact during their meetings.

The lack of prediction of colleagues' behaviour in team meetings was certainly the case when the first round of interviews were conducted in February. However, over time, evidence began to emerge (from the analysis of both the interviews and meetings), *not* of increased awareness of roles and routines, but of a different manifestation of collective cognition as a distributed network of beliefs. This was *meta cognition*; knowing the location of information, or believing to know what other team members knew and responding accordingly. Meta cognition was introduced in Chapter Two as part of a review of the literature on collective cognition as a distributed phenomenon. Several pieces of research converged upon two common characteristics of 'distributed cognition'. These were a shared social schema of how to interact in the team

environment and meta cognition. The previous two cases had produced evidence of the former. In this case, there was evidence of team members attributing beliefs to their colleagues. However, on the occasions when this attribution (assuming to know what colleagues believed) did occur, informants had generally got it wrong; i.e. they had misattributed.

The sub-sections that follow interpret each of the four meetings observed in terms of both of these aspects of collective cognition as a distributed phenomenon. General patterns and reflectivity were assessed for each meeting, and it is these interpretations that are used here as well as interview data to explore misattributed meta cognition. The general trends found in each meeting were used to look for repeated patterns of behaviour; i.e. routines. The predicted dominance of issue based cognition over and above routinised behaviour was explored using the analysis of reflectivity produced for each meeting. Finally any instances of attribution of others beliefs were extracted from the interviews and the meetings.

(1) February Meeting - The general trends in this meeting in terms of repeated patterns of behaviour are shown in table 7.3 below. Also noted in this table is an assessment of how closely each director reflected the views that they expressed in their February interviews. Neither of these are described in detail as this would simply repeat the previous section.

Table 7.3: Patterns of Behaviour and Reflectiveness in February's Team Meeting

	Pattern of Behaviour	Reflectiveness
Aden	Defensive	×
Carl	Placatory	×
Malcolm	Formal	×
Mike	Challenging	✓
Simon	Challenging then quiet	?
Steve	Challenging	✓

Mike, Steve and Simon were all partially reflective of the views that they had voiced in their interview after the meeting. That is, on at least one occasion, they each offered a critical challenge to the arguments that Aden and Malcolm were making. Aden, distracted by their comments was not reflective and instead was extremely defensive. Malcolm, as explained in the previous section (7.2 (1)) effectively had his hands tied and was unable to intervene to re-state his own agenda. Carl was generally placatory on occasion where Aden had responded aggressively to Mike, Steve or Simon's challenges.

There was evidence of misattributed meta cognition at this time. Recall the illustration of how Aden and Simon had different recollections of the same incident. Moreover, it was argued that each was basing their interpretation of this incident on what they believed to be the other's intent. That is, Aden believed Simon to be motivated by the blame culture that existed in Construct Chemicals. Whereas Simon believed Aden was simply being defensive and aggressive as he wasn't able to cope with managing

Operations and didn't want to admit it. In fact they were both wrong and this was a good example of *misattributed meta cognition*.

(2) March Meeting - The general trends in this meeting in terms of repeated patterns of behaviour and reflectivity of each director are shown in table 7.4 below.

Table 7.4: Patterns of Behaviour and Reflectiveness in March's Team Meeting

	Pattern of Behaviour	Reflectiveness
Aden	Subdued but defensive when challenged	✓ (via Malcolm)
Carl	Quiet	×
Malcolm	Dominant	✓
Mike	Quiet but then challenging in phase 11	<i>semi</i>
Simon	Quiet	×
Steve	Quiet but challenging, taking a political risk in phase 2	<i>semi</i>

At this time, the meeting was rather subdued. In Chapter Six two reasons were suggested for this. First, the accident at the plant had given the team a fright and in Carl's words, made them realise the 'full nakedness of Operations'. Second, and also suggested by Carl, it may have been that the directors were not keen to repeat the conflict that had arisen in their previous meeting. Consequently they had quite deliberately remained quiet and allowed Malcolm the time to regain credibility.

So at this time, there was a subdued seriousness about the meeting. Malcolm was allowed to move through his agenda with little or no interruptions and the team appeared to be task focused and moreover, in agreement with Malcolm and Aden's plans. However, note that on one occasion each, Mike and Steve both continued a pattern of behaviour they had established in the previous meeting. That is, they both challenged Aden and he too repeated his pattern of hostile defensive behaviour.

(3) April Meeting - The general trends in this meeting in terms of repeated patterns of behaviour and reflectivity of each director are shown in table 7.5 below.

Table 7.5: Patterns of Behaviour and Reflectiveness in April's Team Meeting

	Pattern of Behaviour	Reflectiveness
Aden	Relaxed & talkative	✓
Mike	Relaxed & talkative	×
Simon	Relaxed & talkative	×

In this meeting, attended by only half of the management team, any previous trends that may have been becoming established were broken. The atmosphere in the meeting was relaxed, all the directors were talkative and interestingly allowed each other to talk uninterrupted: i.e. they were listening to each other. Aden, the most influential director in terms of the operations issue was reflective and, even though most of his contribution

was a repetition of the points Malcolm had made in the March meeting. Simon and Mike appeared to agree with him.

In interview after the meeting, Simon was very positive and stated that he believed that he, Aden and Mike were all 'equals and of a common mind'. In fact he had misattributed his colleagues beliefs, as neither of them shared his views about people management being at the centre of the change programme in Operations.

(4) May Meeting - The general trends in this meeting in terms of repeated patterns of behaviour and reflectivity of each director are shown in table 7.6 below.

Table 7.6: Patterns of Behaviour and Reflectiveness in May's Team Meeting

	Pattern of Behaviour	Reflectiveness
Aden	Defensive	×
Carl	Challenging	✓
Malcolm	Formal	×
Mike	Challenging	✓
Simon	Quiet	×
Steve	Challenging in a politically risky way.	✓

At this time, as in February, the team were not task focused. They became side tracked into discussing John Smith (their supply chain manager), which caused latent conflict to erupt and end in Aden stopping the meeting. The views of Aden and Malcolm were again sidelined and, for a variety of reasons, Carl, Mike and Steve felt compelled to be reflective.

There was also clear evidence of misattribution at this time. Carl noted how the disconnect between himself Mike and Aden had been getting continually 'ramped up'. Aden recalled in interview how he had been expecting Mike to be critical and so that was what he heard. It was interesting to note that it took the open conflict exposed at the meeting, to make Aden and Carl at least aware of the misattribution that had been occurring. Note these were the closest colleagues on the team and even they had to be forced into conflict before they realised they had been misinterpreting each other's views.

Overall Summary - The interpretation of all four of the meetings observed that in terms of repeated patterns of behaviour, the dominance of issue based discourse and the attribution of meta cognition, that was an important trend. That was, the team's behaviour was highly context dependent. When the team were task focused and functional (in that they listened to each other) for whatever reason (either due to the seriousness of their situation, e.g. March, or the relaxed atmosphere because there were so few of them, e.g. April), issued based discourse was dominant and patterns of behaviour displayed at other times were on the whole suspended. In addition, the team appeared to converge at these times. Alternatively, when the team's behaviour was not as functional and they were more relationally focused, they appeared to be having difficulties with their communication, to revert to patterns of behaviour that were

becoming established and be misattributing each other's beliefs. Aden's retreat into defensive mode was the most startling transformation of all the directors.

The management team of Construct Chemicals did not appear to have established definitive roles that would be played out what ever the script in the way Mangham (1986) suggested with his *Commedia dell Arte* as well as Laurel & Hardy and Morecambe and Wise. However, they were beginning to establish roles that, *in the right context*, were repeated and overrode issue based cognition. In addition, on occasions when the team were not task focused and not communicating effectively with one another, some members showed evidence of the misattribution of other's views. This phenomenon is discussed in more detail in the following chapter.

Although the way the team interacted during the fieldwork period appeared to be dependent on *context*, there are two other possible explanations. First, the team may have been in the early stages of their *development* and in effect were searching for an appropriate way to interact. As part of this search, the patterns of behaviour they adopted in the face of changeable contexts were also changeable. This consistent with models of team development (Tuckman, 1965; Gersick, 1988). Second, the fact that on half of the occasions the team were not task focused, engaged in what may have been becoming routinised behaviour and were unable to agree, may have simply been symptomatic of their being in effect a bad team. Aden, Mike, Malcolm and Carl all mentioned the need for the team to undergo some form of team development intervention in their May interviews. In addition, as mentioned in section 6.2 of the previous chapter, in the year after the fieldwork had ended both Simon and Steve were removed from the team.

Taking all of the above in account, it is possible to amend proposition IIIb to accommodate the findings of all three cases. This revised proposition, IIIc is shown in the box below.

Proposition IIIc

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level, issue based cognitions, their behaviour and contributions to discussion in team meetings could be the product a distributed network of knowledge. This network may be manifest in the form of a shared social schema, or attributed meta cognition, depending on the context in which the team is operating, the stage of its development and how effectively team members communicate. This distributed network of knowledge may or may not assist in the construction of agreement within the team.

7.4 Discussion of Proposition IVb

Proposition IV was generated and then amended to account for the pattern of behaviour displayed by one informant in each of the previous cases. These two informants displayed behaviour that was neither to do with collective cognition as micro issue based cognitive overlap, nor collective cognition as a distributed network of knowledge. Instead their behaviour was motivated by their own personal and professional needs at

that time. For instance, in University Business School, Lesley the new team member's main objective was to fit into the team and her behaviour was described as political. In Colour Scheme, Clive's non-routine behaviour was attributed to his anxious state at the time of data collection.

Proposition IVb

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns e.g. political motivation or personal circumstances, that are motivating team members' behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it.

It was anticipated before data collection began, that this team may have a high propensity to achieve a convergence of views during the fieldwork period and reach agreement regarding their important programme of change in their Operations function. This was suggested as the team had a new 'high flyer' MD, a management consultant as part of the team, the professionalism and support of their parent organisation, and an existing acceptance of major change in their organisation (Mike's Operation Mayflower, see section 6.2). It was predicted that all of these factors would combine to produce a task focused team in which micro level, issue based cognitions would be closely reflected in the contributions directors made to management team meetings.

However, this team was in part at least a new team, and the possibility that they were still in the early stages of development (forming & norming, Tuckman, 1965) was not ignored. If the team were still establishing roles and ways of working together, proposition IVb may fit the data better than IIIb. In this scenario, more of the team could be expected to be demonstrating the kind of behaviour in team meetings that betrayed 'relational', as opposed to 'task' based concerns; i.e. matching some of the behaviours that Lesley and Clive had displayed in University Business School and Colour Scheme respectively. Consequently, the pattern in the data collected in Construct Chemicals regarding proposition IVb was: a generally high degree of contributions to team meetings that closely reflect directors' micro level, issue based cognition, but the possibility of some 'relational' based effects as the team may still be in the early stages of development.

The analysed data presented in the previous chapter that is relevant to this proposition, has already been reviewed in the response to proposition IIIb. That is, it was shown that for half of the fieldwork period, the team did appear to be focused on relational issues. Whilst for the other half of the time, they were task focused. It was argued, that as the team's context changed (i.e. from periods of intense pressure to relative calm and back to pressure again), they adopted different ways of interacting with one another as opposed to acting in a uniformly routine fashion. It was suggested that they team's mode of interacting changed in this way as they were still in the midst of developing as a team. Consequently, standardised, expected and repeated patterns of behaviour had not become established in the same way that it was suspected they had in University Business School and Colour Scheme.

Important to the development of proposition IVb were the times when neither the overlap in micro issue based nor, as they were still developing, shared social schema or distributed network (i.e. attributing beliefs to one another), were able to account for the team's interaction. On these occasions (February & May's team meetings, detailed in section 7.2 where proposition IIb was discussed) two questions were asked: (1) why did informants behave in the ways they did; (2) how were they able to behave as they did when it meant they usually overrode the views of the most influential team members (Aden and Malcolm). The responses to these questions contribute to the development of proposition IVb as they add to the factors that can motivate individual behaviour within the team environment over and above any form of issue based or collective cognition. These factors are summarised in table 7.7 below.

Table 7.7: A List of Factors that Mediated the Relationship Between Cognition and Behaviour in Construct Chemicals UK's February and May Management Team Meetings.

Why informants chose to behave as they did: i.e. their motivation.	How informants were able to override both the views of their influential colleagues.
<ul style="list-style-type: none"> - Beliefs about appropriate directorial role. - Frustration at being sidelined manifesting in critical stance. - Concerns that encroach on own area of responsibility. - Establishing a voice in the group. - Extrovert personality type. 	<ul style="list-style-type: none"> - Misinterpretation of motive assuming a blame culture. - Lack of formal influence to intervene and re-prioritise. - Frustration and lack of confidence forcing defensiveness.

So, in response to proposition IV, in Construct Chemicals, it appeared that half of the time, there was evidence that during team meetings, members may have been compelled to behave in the way they did according to a range of broader concerns. These included their self image as a director, i.e. what was appropriate behaviour in the boardroom, the desire to establish a voice within the developing group, an incorrect assumption of other's motives and on a deeper level, a reaction to feelings of isolation, rejection or lack of confidence. However, in terms of the development of this proposition, it is interesting to note that when the team was 'task focused' i.e. in March and April, these factors played less of a part in the construction of events. Therefore it would seem that contexts that promote such task focus are also an important factor in the relationship between cognition and behaviour in the boardroom. Proposition IVb was amended to take account of these findings.

Proposition IVc

Micro level, issue based cognition, established social schema and \ or the attribution of other's beliefs to form a distributed network of knowledge, can be overridden by other broader concerns. These include a variety of factors that range from political motivation to personality type. These factors can motivate team members' behaviour and contributions to discussions in team meetings, if other team members behaviour accommodates it and if the context in which the team is currently operating supports it.

7.5 Emergent Patterns not Accounted for by Existing Propositions

This thesis has been structured around the development of propositions from I through to IVc. However, the data analysis also produced a series of emergent findings that are now reviewed. Two major issues arose and, although in part they have been recognised in the amended 'c' versions of propositions II, III & IV, they extend beyond the initial scope of these propositions. However, they are included here as they perform an important role in the development of a full cognitive explanation of this case.

The two issues were: (1) directorial identity; (2) personal identity; and the conflict between them. A discussion of each follows.

Directorial Identity - The role of director per se, and appropriate directorial behaviour, appeared to be a concept around which diverse views were held in Construct Chemicals management team. However, the more interesting point is that each of them had a view that they delivered at some stage during their four interviews unprompted.

It emerged that some directors believed that the management team meetings ought to be *strategic*, focusing on key performance measures within the business and future actions to be taken in light of these. Mike, Malcolm and Simon all argued this. Carl seemed to think that the meetings were about making colleagues defend their decisions, whether strategic or not. For Steve, his role as a director was to be clear about what Aden wanted and implement it. Finally, Aden was the least clear. He was certain that the team needed to establish what director's roles should be but he had not spent time thinking about it. The following quotes reflect these views.

Aden "What I've noticed is that there appears to be a real difference in the way people in this team contribute to meetings. In some cases, well in Steve's case at least, its like he wants to contribute but he doesn't know what. That's what I put it down to anyway. It's also 'cause in a company like this, to have the HR function represented at that board is kind of funny. We've talked about this before and you know my view is that we don't need it. It should be my job really. All the guys are good guys and they all contribute differently. Whether we've got the right people for the phase we're about to enter is completely different issue and I haven't got my mind round it yet. I don't even want to think about it to be honest.

As far as the meetings are concerned, all I can say is that we're struggling at those meetings. I can change agendas and things we ought to be discussing all I like but we still seem to have a problem. I'm hoping it'll be easier when the new ops director's on board 'cause now I just can't chair the meeting when ops is discussed. I'm defendant and judge really. Those meetings ought to be a powerful vehicle for strategic change in this business but they're not. Maybe we should just can them (laughing). Seriously though, we do certainly need to spend time thinking about what we want from them"

Carl "The funny thing about those meetings is that for those few hours I'm a director, you know trying to be involved in all aspects of the business, but at the end of the meeting you go back to your office and get on with things. But in terms of the

purpose of the meetings, well, as far as I'm concerned, it's to subject the decisions that have been made about the business to critical scrutiny, and if that means colleagues get stuck in and tear lumps out of each other well so be it. I expect to be questioned in some depth about my decisions, there is no question at all that I shouldn't be asked of anyone.

But I will tell you what we need and that's proper chairing so people aren't stealing time wondering and waffling about. I mean people should be closed down, even if they are the MD. I think Aden finds it hard to terminate circular discussions, he needs to learn how to shut things down earlier than perhaps people won't take their bat and ball home so often."

Mike "Let me start by saying what I think people shouldn't do or think the meetings are about. I don't think it should be a talking shop, you know bringing people up to speed with all of the things that are going on in the business. I think it is a review of key performance measures and a policy setting forum. The problem is, and you must have seen this, is that people do think its open forum for catching up with what's going on and wanting to know everything; to be involved in everything. I mean I walk around a lot to try and make sure I'm not in that situation; so does Aden and so does Carl; but the others, well I don't know. But then I've said to you before, we're not a team, we're not behaving like a team and we do need some help."

Simon "The business is always going to be busy, and we will get together in twos or threes or a group in order to move forward specific issues. But we do need to come together as a group who have joint responsibility for the whole business. We should have an agenda that is mainly to do with tactics. But instead people have used these meetings to get together just to talk about things. We haven't done strategy for months; we've just been coping with change and short term stuff. We do need to be more practical in the next months and make sure it becomes a strategy meeting again.

As for myself, I see my role as an integrator. There is a group of marketing people, there's a group of sales people, a groups of finance people and I think, if you put a circle around each one, where they overlap, that's what I should be concerned with as a director of this company. I'm not sure if every one else believes that's legitimate."

Steve "My role as a director is to speak to everybody in the company and about getting them to do what the business requires of them. Aden has to decide what we wants, I can help him decide, but my job is to make sure people do what he's decided he wants. In the meetings, the problem is that Aden doesn't chair them when it comes to Operations. Its a bit like he's instead of being the chairman and getting the consensus of the meeting, he's in an operational role and not listening to our views."

Malcolm "The purpose of these guys meetings should be about reviewing current issues; what's happened, what's being worked on and then the bulk of the time should be sharing what you will be doing for the next month; what will be the big issues.

Right now people are focusing far too much on today and not enough time projecting. One of them is defending this, another defending that and that's just not helping their business at all. Frankly I think they've always been like that. Some of them say 'oh we used to talk about this and that' but I think they've always been unstructured and that leads to these free for all's they keep having. They need more structure; just numbers and figures and focusing on the future, that's what they need. Have you noticed they never complete an agenda, they're a good bunch of guys but they really are unstructured."

It became apparent whilst finding ways to interpret the data collected in Construct Chemicals, that the informants' image of what their role ought to be as a director could be an extremely powerful motivator that may transcend micro level cognition and developing team dynamics or at the very least, would be carried in to meeting with them.

The role and responsibilities of directorship have been discussed in the corporate governance and TMT literatures. In spite of the fact that directors are confronted with an environment that is extremely complex and follows no predictable pattern, they are given no formal training in how to handle the various dilemmas that confront them, or indeed how to manage the mindset switch required to shift from specialised functional management into general and strategic management (Weight, 1997). Some authors have gone as far as to suggest that Directors should become licensed to practice (Mileham, 1995), but currently this group of individuals are charged with a messy and uncertain, responsibility and given no route map. Directors and senior managers also face several paradoxes that combine to create an organisational world faced by them but not other employees (IOD, 1995; Garratt, 1996). These include the need to simultaneously maintain both an internal and external perspective, the need to be entrepreneurial and controlling, the need to be sensitive to the short term without suffering from short termism.

In addition, at the corporate level, directors have a legal responsibility in their role as the representatives of the shareholders of an organisation. At the level of the TMT senior managers have responsibilities to their parent organisation (in effect a substitute shareholder) their employees, and the local community around them. Recall the accident in Construct Chemicals where Aden and Carl were legally responsible for health and safety in the plant. According to Donaldson (1990a & 1990b) and Kay & Silberston (1995), this level of responsibility should stimulate a kind of stewardship behaviour (being a good steward of the organisation's resources); a mantle of responsibility. It is suggested here that the title *director* can bring with it a particular sense of identity stimulated by this responsibility. What is *not* argued here is that all directors share the same *image* of being a director, but rather that they will each *have* an identity as a director: a directorial identity. It is argued that separate from any issue, or team specific cognition, this particular manifestation of 'identity' is carried with directors into their team or board meetings.

Social identity theory would support this argument. Tajfel, (1981) argues that individuals have many identities that they maintain to greater or lesser extents during

their lives: e.g. woman; wife; daughter; friend; Psychologist; dog owner; bird watcher etc. These *identities* combine to define who we are. If explicitly asked, a company director may well include director in their list of *identities*.

As individuals progress through their lives various of their identities become more important to them and in turn they become more attached to it. This commonly leads people to accentuate the similarities between themselves and other members of that category: i.e. a new mother feels especially attached to other mothers and this *identity* may become paramount. This *accentuation effect* (Tajfel & Wilkes, 1963; Mc Garty & Penny, 1988) may also apply to the directorial identity. An individual coping with the level of responsibility that directorship can bring (legal and moral) may find that this particular identity is accentuated over and above others. So it is argued here that not only do *directorial identities* exist, but they are likely to be reasonably pronounced and will, along with micro issue based cognition and other forms of team centred distributed cognition, be carried into all TMT interactions.

Personal Identity - As described above, individuals can have multiple identities. It has been argued that one such identity that emerged from the data analysis was a directorial identity. However, there was also evidence to suggest that the informants in this case were carrying other, more personal identities, with them into their management team meetings. This argument is made on two grounds, both of which emerged from the data analysis. First, the influence of affect on director's cognition and behaviour. Second, on a psychodynamic level, their desire and active attempts to cope with anxiety they may have been feeling.

In Chapter Six, several references were made to the extent to which directors in Construct Chemicals had become frustrated and were suffering under intense pressure. For example, in the interview data, recall Carl's comments about crying at his desk, and Aden's obvious distress at being unable to cope with the demands of his job. In addition, during their meetings, there were times the team as a whole seemed either depressed (March) or suffering from factionalism and open conflict (February & May).

Parkinson (1996) argues that there are distinct clusters of affect, comprising positive affect and negative affect. These clusters have also been linked to goal achievement. (Oatley & Johnson-Larid, 1987; Carver & Scheier, 1990). That is, the extent to which an individual's current goals are being achieved or frustrated can produce a predictable affective response. Consequently if an individual's affective state can be ascertained, the status of their goal fulfilment may also be guessed at. For instance, if a person is displaying positive affect (happiness), in some way their goals have been achieved. If they are neutral it may mean they have no particular goal at that time. If they are anxious or unhappy there may be threats to their goals or their goals may have been frustrated altogether. Note that the *intensity* of an emotion is suggested to reveal both the *importance* of a goal and the progress of a goal i.e. the *extent* to which it is being frustrated.

It is argued here, that the changing levels of affect apparent within the team over time may have revealed the frustration of goals on some level. For instance, if being capable in all aspects of his job was important to Aden, the frustration of this may have stimulated negative feelings. The important question in terms of personal identity, would have been what goals were important to each informant. This can not easily be attributed to each director retrospectively. However, some instances that were especially noticeable are discussed here.

First was Aden's loss of confidence during March. In interview, he was open about how challenging he was finding his position at that time, in this sense his goals were being frustrated. He was at the time of this interview in his own words 'very low' and visibly unhappy. During the March management team meeting these feelings had been manifest in his subdued demeanour and lack of contribution to the meeting. Only when directly challenged by Mike who accused he and Malcolm of misinterpreting a decision the team had made about the location of a new depot, did Aden defend himself.

Another interesting instance of goal achievement related to affect was Simon's positive state of mind in his April interview. Recall that during the April team meeting, as so few directors were present, Simon had fully participated in the meeting and had been engaged in relaxed exchanges with Aden and Mike. It was argued earlier that this may have indicated that one of Simon's goals was to be included in the group. Indeed, Schien (1980) points out that two of the psychological functions of groups are to fulfil our need to be included and to maintain a positive self image. For Simon, being included and the maintenance of his image as a director, prompted a positive outlook that was evident in not only his demeanour but also his comments in interview: i.e. the way he had re-appraised the Operations issue.

Tajfel's social identity theory notes that individuals who feel their identity or goals are under threat, can find the experience extremely threatening thus promoting considerable anxiety. Steve's emotional outburst in the May management team meeting could be interpreted as a graphic manifestation of such threat. Recall that Steve had been isolated from the discussion at this meeting as Aden had lent behind him to address Malcolm. In addition Aden had deferred to Malcolm on several occasions. It appeared at the time and in interview later that this had been an extremely threatening experience for Steve on two levels. One, his identity as a director was being challenged: his earlier quote shows he believed his role to be very focused on Aden, if he was being ignored by Aden, then this way directly challenging his own particular directorial identity. Two, his goal of being included in the team had also been thwarted. When the meeting broke Steve was furious and, as confirmed by his colleagues, took a considerable length of time to calm down. Interestingly, Steve's anger was directed not towards Aden, but towards Malcolm who had not courted Aden's attention.

This leads on to an additional next aspect of *personal identity* uncovered in the data analysis. That is, the different ways the directors had of coping with threat, anxiety, uncertainty and general negative affect. Steve had coped with his own sense of threat and the anxiety in the May management team meeting by transferring it, i.e. projecting

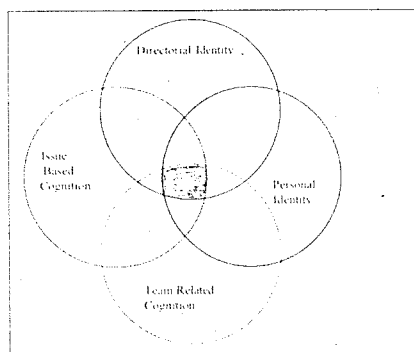
it on to someone else. For example, Steve had been generally ignored by Aden in this meeting and when he did comment, Aden responded aggressively. However, when the meeting broke down and still in his interview conducted a couple of days after the meeting, he was angry with Malcolm not Aden. It may have been that for Steve to recognise that Aden had not included him and to explore why that may have been, would have been too threatening. Instead he created a scenario in which he could project his anxiety on to Malcolm. This form of activity is concerned with psychoanalytic principles and revolves around the principle of social defence (Hirschhorn, 1988). That is, the ways in which individuals seek to protect themselves from anxiety, uncertainty and generally negative feelings about themselves. *Projection* is one form of activity that is commonly employed by people to, in effect, stabilise their inner lives (Klein, 1975). The other two being *splitting* yourself from an action and *introjection* generating scenarios (fantasising) that justify anxiety reducing activities. Hirschhorn and other Tavistock theorists argue that close observations of managers reveals how the workplace can easily inflict the kind of psychological injuries that force people into one of the reparatory behaviours shown above. Incidentally, the ability to carry out such repairs is not considered dysfunctional; in fact is argued by object relations school of psychoanalysis to be at the cornerstone of human life (Klein, 1977).

Other examples of protective behaviour (protecting emotional identity) also occurred during the four months of fieldwork. For example, Aden was keen to project the manifestation of a blame culture onto his team rather than accept that his abilities were failing him in the management of Operations. In addition, in his final interview he spoke of how when John Smith was being attacked by Mike, Carl and Steve, he had felt a strong sense of being attacked himself. There is a complex message in that statement that there is neither the time nor the data to unpick at this stage.

In summary, it has been argued here that in addition to directorial identity, individual directors will have their own identity of who they are. This is likely to be wrapped up in deeply held desires and goals. The frustration of these goals can lead to an emotional response, the appropriateness of this response may in turn be related to the psychological defences they are employing. In short this is a complex area and one which has been dealt with extremely superficially here. But it is maintained that along with their micro level issue base cognitions, team related cognitions and directorial identities, the informants in Construct Chemicals also carried their own personal identities with them into their team meetings.

Overall Summary - The important aspect about each of these patterns found in the data is that they do not work against the propositions that have been incrementally established throughout this research. Indeed they complement them. Propositions II and III can be very loosely described as being concerned with *micro level, issue based cognition* and *team related cognition* (i.e. shared social schema and attributed meta cognition). It has been shown that the directors in Construct Chemicals carried each of these aspects into their management team meetings. In this section it has been argued that they also carry with them their *directorial identity* and their own *personal identity*. Figure 7.6 below represents this relationship.

Figure 7.6: A Representation of the Various Factors that Affected Behaviour in Construct Chemicals Team Meetings.



The pattern of events that actually emerges in team meetings is suggested to be a complex mix of all of these factors. Which factor dominates is likely to be entirely context dependent on both the situation and the individual concerned.

7.6 Summary

In this chapter, the analysed data presented in Chapter Six has been interpreted. It has been argued that, in their amended forms, propositions IIc, IIIc and IVc were able to fit the data collected.

However, additional trends that emerged from the analysis helped construct a rounded picture of the relationship between thinking and behaviour in Construct Chemicals team meetings over a four month period. It has been argued that not only are micro level issue base cognitions and team related cognitions important to understanding behaviour in a team meeting, but directorial and personal identities also have a part to play. The notion a whole complete individual, warts and all, sitting in a boardroom taking part in important strategic discussions has been evoked here.

CHAPTER EIGHT

Summary & Discussion

8.1 Introduction

This chapter draws together the findings of all three case studies, in order to present the contribution this research makes to extant knowledge and in so doing proposes a series of recommendations for future research.

Section 8.2 examines all of the propositions explored in this research and shows how they have been developed through each of the three cases. At the end of this discussion an overall response to the research questions presented in Chapter Two is given using a model to offer a clear summary. Section 8.3 revisits the literature reviewed in Chapter Two. It focuses on the key relationships shown in the model presented in the previous section. It is in this section that the research's contribution to knowledge is presented. Finally section 8.4 acts as an overall summary of this chapter.

8.2 Findings from Three Cases

Proposition 1 was introduced in Chapter Two and was the starting point of this research; that is the position from which I first engaged with the MOC literature. Proposition 1 is shown in the box below.

Proposition 1

Individuals in a team may hold different views about an important strategic issue before a team meeting. However, once agreement is reached in that meeting, team members can be expected to hold the same view of that agreement when interviewed after the meeting.

This starting point was described earlier (Chapters Two, Three and Four) as a naïve assumption, specifically referring to its simplistic interpretation of cognition and behaviour in teams. Evidence of its widespread application in the MOC, TMT and other literatures was presented in Chapter Two. However, there was evidence from psychology research to suggest that during group encounters, individuals will focus on the sections of information that are common to them. Hinsz (1990) and Edwards & Middleton (1986) both argue that pieces of information common to all members of a group will be discussed at the expense of the diverse ideas. These common ideas can subsequently be mutually re-enforced and eventually replace the diversity between group members. It was argued in Chapter Two, that these ideas were reminiscent of Janis' (1982) notion of *groupthink* and in many ways, seemed to make intuitive sense. That is, people may recognise the powerful sense of being of one mind with someone else. The research was designed to test proposition one with the objective of demonstrating its simplicity for two reasons; (1) to make a response to the MOC field showing in what respects the notion of cognitive homogeneity can be an unhelpful concept, (2) to use as a platform for the development of more complex propositions.

The case of University Business School demonstrated that, even though the team arrived at agreement, when interviewed after their team meeting, individual members had diverse views of the agreement reached and the implementation of it. Proposition I did not fit the data and collective cognition, manifest in agreement, could not be accounted for as issue based cognitive homogeneity.

Instead, the actual pattern found in the data collected in University Business School had been: dyadic overlap in team members views of their strategic issue, enthusiastic agreement based on the overlap of the most influential team members, followed by a return to dyadic overlap after the meeting. Two pieces of MOC research had previously explored the notion of collective cognition manifest as agreement as *overlap* in key areas of team members views. Langfield-Smith (1992) operationalised this idea as a ven diagram with collective cognition as the shaded area where all the circles overlap. Whilst Walsh, et al (1998) demonstrated that the *realised consensus* achieved in a team would be the product of the overlapping views of the most influential team members. These two pieces of research were used to construct proposition II that operationalised collective cognition, manifest in agreement during team meetings as an overlapping of views. Proposition II is shown in the box below.

Proposition II

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Individual team members will share an overlapping view of the agreement reached: overlap will have spread teamwide.

However, this proposition was also unable to account for the data collected in University Business School as after the meeting, team members displayed no evidence of issue based teamwide overlap. Although it was never tested empirically, Langfield-Smith (1992) suggested that the overlap that is generated during a team meeting is likely to dissipate once individual team members are left alone to make sense of the agreement they reached. This argument was incorporated in proposition II. The amended form of proposition II generated during the first pilot case is shown in the box below.

Proposition IIb

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* before an important meeting. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. Other team members may adapt their own views to reflect those of the most influential in their team. Alternatively, the manifestation of teamwide overlap (agreement in the meeting) may dissipate once individual members are left alone to make sense of the agreement reached.

Although this revised proposition was able to account for some of the data collected in University Business School, patterns emerged during analysis that fell outside its remit. These patterns were incorporated into two further propositions (III & IV) that, together with proposition IIb, concluded the first case.

Proposition III was concerned with a different operationalisation of the notion of collective cognition and was initially concerned with the role expectations that had been discussed unprompted during the informants' first interviews. Bill and Peter were expected to dominate the meeting. Sara and Lesley were expected to remain quiet and Malcolm to try to control but fail. During the team meeting, the accuracy with which these roles were played out raised a new possibility. That is, the behaviour that had been exhibited during the meeting may not have been the manifestation of issue based cognitive convergence. Instead it may have been a form of routinised, expected, predictable and repeated means of interacting. If this were the case, agreement would be expected to happen if Bill and Peter dominated. In addition, this agreement would not be expected to be apparent in other team member's interviews: i.e. they may have agreed as a matter of routine as opposed to an issue based cognitive conversion.

Several literatures were explored to account for this pattern of behaviour. The notion of collective cognition as a distributed phenomenon was found to be repeated in several diverse fields (cognitive science, MOC, social cognition and cockpit ergonomics). Several of these operationalised collective cognition as being based on a shared social schema. That is, knowledge of how the team ought to interact with one another: established patterns of behaviour. It was suggested that this form of knowledge could transcend issue based cognition and form the basis of agreement. (Fiol, 1994). Proposition III, was generated using these literatures to account for the possibility that issue based collective cognition had not emerged in University Business School, but instead, the team had been enacting a their shared and mutually re-enforced view of how to behave in their team. This proposition is shown in the box below.

Base Proposition III

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level issue based cognitions, their behaviour and contributions to discussion could be the product of their shared social schema of how to interact during team meetings. This distributed knowledge allowing the team to work as a cohesive unit that is able to reach agreement.

Over and above the data that had been accounted for by propositions IIb & III, there remained a final pattern in the data collected in this pilot case that required further exploration. This pattern concerned Lesley, the new team member. She did not agree with the decision the team reached either before (in terms of the principles that underpinned it) or after the meeting. In addition, as a new member, she would have been unlikely to have shared the team's social schema, yet she did not voice her discontent. It emerged during her second interview that she had been deliberately silent to safeguard her political capital. That is, as the 'new girl' (her description) she needed to be careful to make friends not enemies. Consequently, her motivation for behaving in the manner she did during the team's meeting, was related to neither issue based cognition, nor any form of distributed cognition in the form of a shared social schema (team based cognition). In fact her primary concern was much broader. It became apparent from only briefly reviewing several literatures, that many reasons could be suggested for the dominance of *broader* motives over issue based or team based cognition political motivation being just one of these: e.g. affect dominating

behaviour; group dynamics; stage of development; velocity of external environment. So in a sense, this fourth proposition to be introduced into the research was a *catch all* covering many aspects of human behaviour. As the research progressed the aim was to establish at least some of these factors that could mediate the relationship between thinking and behaving. Proposition IV in its basic form is shown in the box below.

Base Proposition IV

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns that are motivating team members behaviour and contributions to discussions in team meetings; e.g. political motivation.

Propositions IIb, III and IV were carried forward to the second case Colour Scheme. Considering how central the teams actual agreement had been to the generation of each of these propositions, a top team that was likely to be able to reach agreement was selected. Colour Scheme, a small and close knit family business with a board of directors that had retained the same membership for over five years was chosen.

In fact, none of the patterns that would have been expected if proposition IIb fitted the data collected, emerged from the analysis of this second case study. There was sub group and dyadic issue based overlap before the board meeting. However, the board were not able to come to agreement during the meeting and the views of the most influential group of directors did not dominate the discussion. Instead the least influential directors dominated the discussion, forcing the board to revisit old arguments. Consequently, at the end of their discussions, the board agreed to disagree. Finally, there was no evidence of teamwide overlap after the meeting.

The other two propositions constructed at the end of the first case were used to make sense of the events in Colour Scheme. First, in terms of team based cognition or collective cognition operationalised as some form of distributed phenomenon as evoked in proposition III. As in the previous case, there was clear evidence in Colour Scheme of the operation of routinised patterns of interaction in this team. Three highly visible routines were described as: (1) locking antlers; (2) parenting; (3) withdrawing. However, an important difference between this case and its predecessor was the impact the team's routines had on their ability to reach agreement. In University Business School they had facilitated it, where as in Colour Scheme they had effectively blocked it. So although proposition III was found to fit the data collected in Colour Scheme, it was slightly amended to take account of the varied impact that collective cognition in the form of team based cognition (shared social schema i.e. routine behaviour) can have on a team's ability to agree. The amended proposition IIIb is shown in the box below.

Proposition IIIb

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level, issue based cognitions, their behaviour and contributions to discussion in team meetings could be the product of their shared social schema of how to interact during team meetings. This distributed network of knowledge may or may not assist in the construction of agreement.

The visible routines that had become established in Colour Scheme over the years were found to dominate issue based cognition in the majority of cases. The anomaly was the case of Clive Grantly. It was argued that his usual routine was to withdraw. When the program of strategic change was discussed Clive was extremely vocal, and closely reflected the views he had expressed during interview. The exploration of the reasons for his changed behaviour regarding this particular issue contributed a further element to the developing proposition IV. Clive's motivation to be vocal against the prevailing opinion amongst the influential team members, appeared to be related to the sense of threat and vulnerability he was feeling at that time. Chapter Five gives a fuller explanation of his specific circumstances, suffice to state here that he may have been aware of Jonathan's plans to remove him from the board, and was consequently anxious, defensive and driven to comment. Once again, proposition IV was slightly amended to accommodate this finding and the new version (IVb) is shown in the box below.

Proposition IVb

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns e.g. political motivation or personal circumstances, that are motivating team members behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it.

Propositions IIb, IIIb and IVb were carried forward to a third and final case. Although proposition IIb did not fit the data collected in Colour Scheme, it was carried forward to be explored in the final case for two reasons. First, proposition IIb was able to account for the data in the University Business School case and therefore could not be rejected. Second, the Colour Scheme board failed to agree and this could be central to the notion of overlap. Consequently it was important to further explore proposition IIb in a context where agreement may be likely. In addition, a context that was *different* from Colour Scheme's family business atmosphere was required to comment on the applicability of trends established there to other TMTs. Construct Chemicals, part of a major multinational organisation, had a relatively new management team with a higher flyer MD and a consultant on board were chosen. The team was already engaged in one programme of major change and were not expected to have problems with the notion of change per se, as had been the case for some individuals in Colour Scheme.

The analysed data collected during four months of fieldwork in the company revealed several important patterns. First, with regard to proposition IIb, over the four months collective cognition was manifest in that the team did display dyadic and subgroup overlap. There appeared to be a certain degree of both consistency and longevity in the overlapping key themes shared by Aden & Malcolm and Simon & Steve. On the other hand Carl and Mike overlapped in April and in May but the key themes had changed. So although a trend of a longevity of overlap may have been emerging between these two, the themes they overlapped on were not as consistent as the other two dyads. Three types of overlap were presented in Chapter Seven. These were dependent on the longevity of the overlap and on the degree of consistency in the theme shared. These types are shown in figure 8.1 below. Note that in Construct Chemicals, the most common form of dyadic overlap was *thematically consistent* &

sustained overlap, there was also evidence of *thematically variable but consistent overlap* and on one occasion evidence of *thematically variable & temporary overlap*. There was no evidence for *thematically consistent but temporary overlap*.

Figure 8.1: Overlap at Construct Chemicals.

		<i>Theme</i>	
		Consistent	Variable
<i>Longevity</i>	Sustained	2 dyads: Thematically consistent & sustained overlap.	1 dyad: Thematically variable but sustained overlap.
	Temporary	1 dyad: Thematically consistent but temporary overlap.	No evidence: Thematically variable and temporary overlap.

Overlap did not spread teamwide at any point during the four month fieldwork period. In this respect, proposition IIb that anticipated an incremental convergence of the team did not fit the data. In addition, taking the complete data set, it appeared that the team failed to converge when discussing the programme of change in their operations function during their team meetings. That is, they were in a situation of unresolved conflict at the start and at the end of the fieldwork. So in this respect also, proposition IIb did not fit the data: i.e. the team did not agree.

During the February and May meeting when the team failed to agree, the most influential team members also failed to dominate the agenda. For a variety of reasons, the most influential directors in terms of operations (Aden & Malcolm), were *distracted* from their agenda by others. In this case, *why* Aden and Malcolm were distracted and *how* the other directors able to distract them, was explained. The explanations found generated a list of factors that can mediate the relationship between overlap between influential individuals, their dominance of the team's agenda and the team's ability to converge or agree. These are listed in table 8.1 below.

Table 8.1: Factors that Mediate the Relationship Between Overlap Between Influential Individuals, Their Dominance of their Team's Agenda and the Team's Ability to Converge or Agree.

<i>How</i> - Aden & Malcolm were distracted	<i>Why</i> - Other directors overrode their influence
<ul style="list-style-type: none"> - Misinterpretation of motive (blame culture). - Lack of formal influence to intervene. - Frustration and lack of confidence forcing defensiveness. 	<ul style="list-style-type: none"> - Beliefs about appropriate directorial role. - Frustration at being sidelined manifested in critical stance. - Concerns that issue encroached on own area of responsibility. - Interest in establishing a <i>voice</i> in the group. - Extrovert personality type.

However, on two occasions, the team *appeared* to agree in the same way as the University Business School team had. That is, in the March and April meetings, the

plans that Aden and Malcolm put forward were accepted unchallenged. This appeared to be the manifestation of convergence within the team in line with the views of the most influential team members: i.e. proposition IIb fitted the data on these occasions. The team *appeared to agree* is used quite deliberately here because as was the case in the University Business School team, there was no evidence of teamwide overlap after these meetings. This indicated one of two things: (1) that the team did agree but this quickly dissipated after the meeting (Langfield-Smith, 1992) or (2) the team was not in agreement and other factors were overriding the expression of the less influential member's issue based views. Propositions IIIb and IVb were used to explore the data further, but the amended version of proposition II is shown below.

Proposition IIc

Members of a decision making team's ideas, opinions and views about a strategic issue can *overlap* in various ways depending on the *consistency* of the theme on which they overlap and how *sustained* the overlap is. The development of each type of overlap that exists between dyads or sub groups within a team, may be dependent on a series of context dependent precursors. The overlap between the most influential team members may form the basis of agreement reached in the team meeting. However, there are a series of factors that may prevent this occurring. In addition, even if the team does converge, this may dissipate once individual members are left alone to make sense of the agreement reached.

Proposition IIIb was concerned with what was described earlier as *team based* cognition i.e. concerned with team interaction. That is, collective cognition operationalised as a distributed phenomenon, where *issue based overlap* is not a prerequisite for convergent behaviour: i.e. agreement in the team. In the first two cases, team based cognition was manifest in terms of accurate role expectancy and routine behaviour during team meetings. Arguments were made in both of these cases but especially powerfully in the second case (Colour Scheme). The form of collective cognition proposed in IIIb overrode issue based cognition in the construction of behaviour in team meetings: individuals were playing out roles irrespective of the issue being discussed.

As Construct Chemicals were in part a new team, their team based knowledge of roles and routine ways of interacting was not anticipated to be fully developed. That is, issue based cognition was expected to be more closely linked to behaviour in management team meetings. However, the exploration of proposition IIb demonstrated that for the most influential team members and for half of the time at least, (February & March) this was not the case. On these occasions, the behaviour of influential individuals was not motivated by issue based cognition but by *other* factors. Alternatively, on the other two occasions when the most influential team member's issue based views did dominate the agenda and the team appeared to converge, there was no teamwide overlap to re-enforce convergence. This indicated that the other team members' behaviour had not been based on their issue based cognition but may have been motivated by *other* factors. It was shown in Chapters Six and Seven that these factors had included those shown in table 8.1.

The context of broader events in the company also had an impact on the way individuals chose to behave in meetings. That is, when the company was in a difficult

situation, e.g. after the accident at the plant, team members appeared to be willing to suspend personal views in the team meetings if not their private interviews, to allow the team to reach an agreement. This may have been easier because there was little evidence of established roles or patterns of behaviour in Construct Chemicals, i.e. the manifestation of team based cognition. For instance the overall atmosphere of the team meetings was not consistent, they appeared to be beginning to follow a cycle of conflictual, calm, calm and conflictual. Team members' behaviour changed according to these contexts and not overall enduring roles or routines appeared to have been established. It was argued that the Construct Chemicals team was still in the process of establishing an equilibrium, i.e. developing as a team.

The concept of meta cognition: knowing the location of knowledge and opinions within the group, was evoked by many of the authors cited in the discussion of a *distributed* approach to collective cognition in Chapter Two. It was suggested in Chapter Six that in the team developing at Construct Chemicals, there would be little evidence of meta cognition operating successfully within the group. What was in fact established was that there was some evidence of the opposite effect: i.e. misattributed meta cognition. With specific reference to meta cognition, this effect was described as the *Abilene Paradox*¹ by Orasanu et al (1995) and noted for its potentially disastrous effects in the cockpit. In Construct Chemicals, several examples of misattributed meta cognition were found: a good example was the breakdown in communication between Aden and Mike & Carl in the May management team meeting (see Chapter Six for a full description). The team appeared on several occasions to be constrained by their natural tendency to attribute causation to behaviour observed combined with a lack of correct meta cognitive awareness which had yet to develop within their team. Consequently, team members were *misattributing* meta cognition and attributing motives that did not exist. This led on at least two occasions (February & May team meetings) to confusion and open conflict.

All of these findings were used to amend proposition IIIb in the following way.

Proposition IIIc

Irrespective of homogeneity, heterogeneity or overlap in team members' micro level, issue based cognitions, behaviour and contributions to discussion in team meetings could be the product of a distributed network of knowledge that may be manifest in the form of a shared social schema, or attributed meta cognition, depending on the context in which the team is operating, the stage of its development and how effectively team members communicate. This distributed network of knowledge may or may not assist in the construction of agreement within the team.

Proposition IIc which focused on collective cognition manifested as issued based overlap, only *partially* fitted the data collected in Construct Chemicals. In addition, proposition IIIc not fit the data, so neither team nor issue based cognition offered the *best* account of events in Construct Chemicals. Consequently, proposition IV the

¹ The *Abilene Paradox* is a proverbial story about a Texan family sitting outside on a hot afternoon. One family member suggests a trip to Abilene and although none of them want to go, they all end up going because everyone thinks that all the others want to go. The result is that whole family gets even hotter and dustier and for no good reason (Eisenhardt, Kahwajy, Bourgeois, 1997).

synthetic *catch all* proposition, became important in the interpretation of this last case. This proposition explored possible mediators in the relationship between cognition and behaviour in TMT interaction.

Proposition IVb

Micro level, issue based cognition and established social schema (distributed knowledge), can be overridden by other broader concerns e.g. political motivation or personal circumstances, that are motivating team members' behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it.

In fact, the factors that had mediated the relationship between cognition and behaviour in TMT interaction had already been established in the exploration of proposition IIb (see table 8.1) and these were used to slightly amend proposition IV. The amended version is shown in the box below.

Proposition IVc

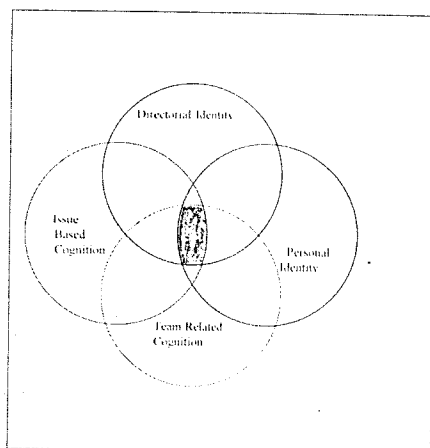
Micro level, issue based cognition, established social schema and or the attribution of other's beliefs to form a distributed network of knowledge, can be overridden by other broader concerns. These include a variety of factors that range from political motivation to personality type. These factors can motivating team members' behaviour and contributions to discussions in team meetings if other team members behaviour accommodates it and if the context in which the team is currently operating supports it.

Over and above the propositions that were developed through all three cases, some patterns and ideas began to emerge from the analysis of this final case alone. These arose because of the longitudinal nature of the case and the proximity to the informants and their situations. These ideas were not at the same stage of development as the propositions already discussed and appeared as part of the interpretation of the final case in more speculative form. Nevertheless they lead to a holistic representation that summarises the findings of these cases. This framework introduces two ideas: directorial identity and personal identity, to the discussion.

Directorial identity is concerned with the ideas and beliefs that members of the Construct Chemicals management team appeared to have about the role and responsibilities of directorship. It was argued that the sense of *stewardship* that a directorial appointment may evoke could account for some of the behaviour exhibited in management team meetings. Closely associated with this idea is the notion of personal identity. Opposed to being related to a particular role or position, personal identity was argued to be based on the goals that an individual director either overtly or more tacitly, considers important. The manifestation of these goals and their achievement or frustration was apparent in the changed levels of positive and negative affect displayed by each director along with their mechanisms of social defence.

Combining issue based cognition, team based cognition, directorial identity and personal identity produces the representation shown below. It was argued in Chapter Seven that making sense of behaviour and cognition in Construct Chemicals, required the consideration of all four of the elements shown. That is, the behaviour observed and recorded appeared to result from the intersect of many context dependent factors.

Figure 8.2: A Representation of the Various Factors that Affected Behaviour in Construct Chemicals Team Meetings.



Response to the Research Questions - The past nine pages have presented a summary of the findings of all three cases. All the propositions that have been explored and developed throughout the research have been discussed. Some less concrete ideas that arose during the analysis of the final case have been summarised in figure 8.2. This section concludes with a response to the two research questions presented at the end of chapter two.

The first research question asked *what is the nature of collective cognition?* Proposition I operationalised collective cognition as cognitive homogeneity. This was found not to be the case in any of the teams researched. Proposition IIc argued that collective cognition is the product of the overlap of key themes in individual's otherwise diverse issue based cognition. Support was found for this view. However, three different forms of overlap were found to exist. Proposition IIIc operationalised collective cognition as team based shared knowledge. This was manifest in either shared views of roles and routine behaviour or as awareness of other team members views; i.e. the correct attribution of meta knowledge. There was strong evidence of shared knowledge of roles and routines in the first two cases but less in the third. This was attributed to the different stages of development of the teams at the time of data collection; i.e. Construct Chemicals were a new team and had not established a consistent mode of interacting. The overall conclusion of this research is that collective cognition can exist as either issue based cognitive overlap or team based cognition and, according to context, the two need not be mutually exclusive.

The second research question asked *What is its relationship to convergent behaviour and what context dependent issues mediate the relationship between collective cognition and convergent behaviour that is part of the strategy development process in TMT's?* As no evidence was found to support proposition I, it is disregarded in response to this question. Proposition IIc, that operationalised collective as issue based overlap, argued that cognition may be closely reflected in individual's

behaviour during team meetings in certain circumstances. In addition, proposition IIIc operationalised collective cognition as a team based phenomenon which may have a close relationship to behaviour in team meetings in certain circumstances. Various factors mediated these relationships:

- The distribution of influence within the team.
As predicted by Walsh et al (1988), the extent to which individuals' issue based cognition (collective or otherwise) was closely reflected in the contributions they made to meetings could be affected by the extent of their influence within the team. For example, in University Business School the less influential team members had little opportunity to comment and vice versa.
- The normal routine of the team.
The team's routine way of interacting may influence the extent to which any of the team's issue based cognition is closely reflected in the contributions they make to the discussion of their strategic issue during team meetings. For example, in Colour Scheme the board had a series of routines that tended to distract them from the topic under discussion. The result was that no team members used issue based cognition for noticeable periods of time.
- The context the company was operating in at the time of the meeting.
If the team's normal routine was to NOT accept the dominance of the most influential members, an extraordinary situation (either good or bad), could sufficiently distract the team and enable issue based cognition to become the major influence on team behaviour. For example, the accident at Construct Chemicals focused director attention and encouraged a compliance with the views of Malcolm and Aden, the most influential team members.
- The stage of the team's development.
If the team has yet to establish routines ways of interacting, behaviour may be motivated by members search to find a voice (a role), rather than their issue based cognition. For example in Construct Chemicals, a team with three relatively new members, experienced two periods of open conflict as the team was moving through their development. During this time, as team members asserted themselves, they may have been more reflective of their issue based cognition than at other times or indeed vice versa.
- Various factors that encourage the expression of issue based cognition.
A variety of factors that were more applicable on an individual level than those above, appeared to encourage individuals to closely reflect their issue based views in team interactions. These factors are listed below.
 - **Personality type** - the high scoring extroverts in Construct Chemicals (Carl and Mike) appeared to be more likely to express their issue based views than Simon an introvert.
 - **Personal Circumstances** - if an individual was in an unusual or difficult position, their motivation to closely reflect their issued based views may become heightened. For example in Colour Scheme, Clive was under considerable pressure at the time of data collection and feeling under threat may have felt compelled to voice his views when his normal role in the team (along with Jackson and Robin) was to be withdrawn.
 - **Frustration of Goals** - if goals of either a personal or professional nature are being frustrated, an individual may feel compelled to voice their views. On a professional level,

Carl and Mike's departments were both repeatedly affected by the decisions made in the operations department. Consequently they felt compelled to volunteer criticism. In terms of personal goals, inclusion in the team and volunteering close support to Aden seemed to be important goals for Steve. These were frustrated when Aden ignored Steve in the May team meeting. Steve's subsequent sense of anger may have compelled him to voice some of his criticisms of personnel in operations even though Aden was clearly beginning to become aggressive and defensive. Directorial identity and personal identity fall under this category.

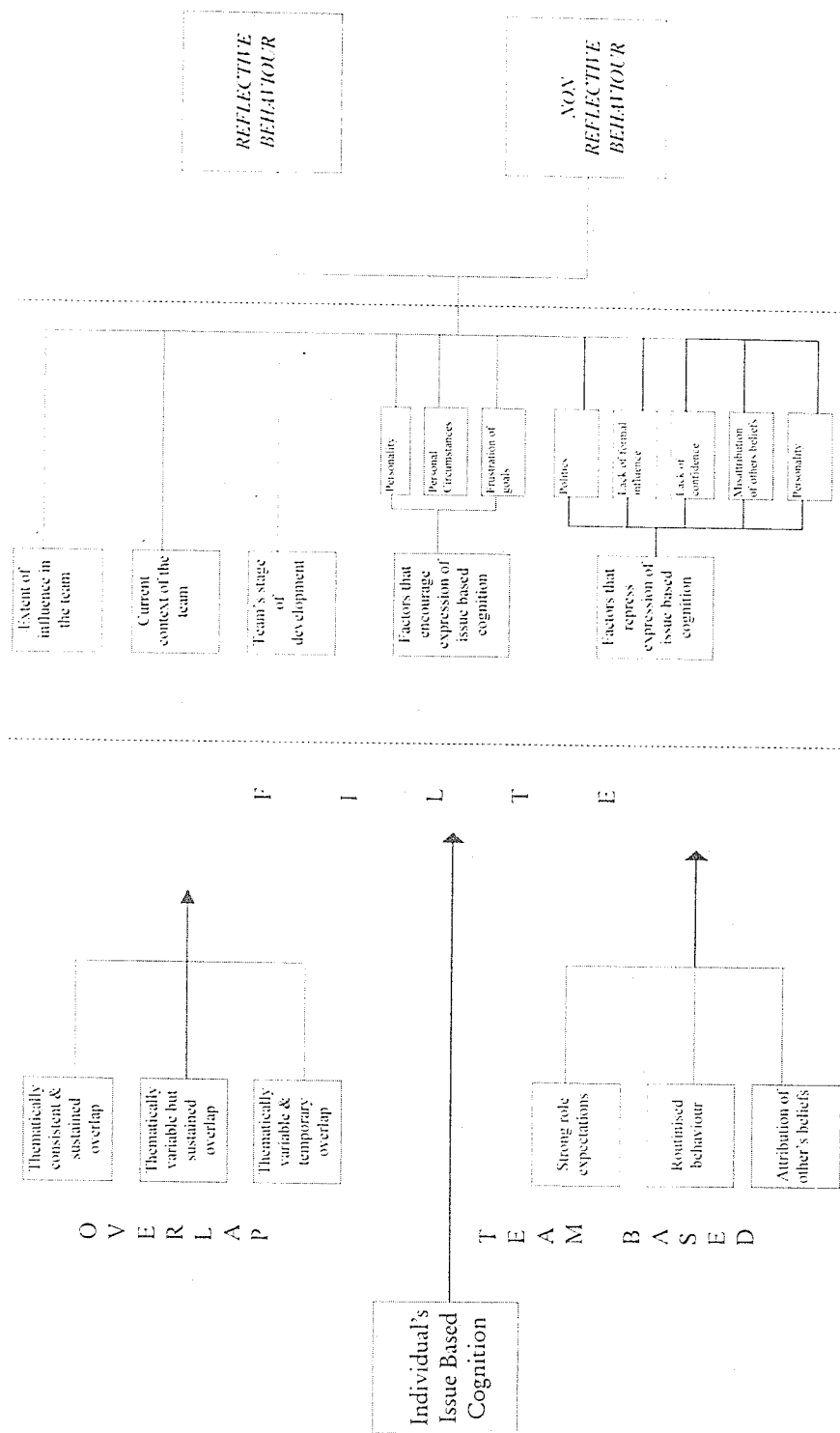
- Various factors that repress the expression of issue based cognition.
 - **Politics** - if a team member had a broad political objective that superseded the current issue under discussion that may be damaged by commenting during the discussion of the teams strategic issue, then their views were likely to be repressed. For example Lesley in University Business School was keen to be accepted by the team and therefore repressed her disagreement with the decision that was made.
 - **Lack of formal influence** - even a team member with considerable influence regarding the specific strategic issue under discussion may not have sufficient influence to intervene. Consequently their views may be repressed, this was the case with Malcolm, the consultant in Construct Chemicals February and May meetings.
 - **Lack of confidence** - if a team member is under pressure and loses confidence in their ability, their need to protect themselves from criticism may distract them from their issue based views as they become primarily concerned with affecting other's opinions. This was the case with Aden during the May management team meeting.
 - **Misattribution of other's beliefs** - if a team member has misinterpreted another's motive based on the misattribution of their beliefs, then they may be distracted from their own issue based views and engage with that team member in terms of their agenda. For example, in Construct Chemicals, Aden believed Mike, Carl, Simon and Steve were using a 'blame culture'. When they expressed their issue based views about John Smith the supply chain manager, Aden became distracted into a prolonged discussion that was not reflective of but contradictory to his issue based views.
 - **Personality** - introverts appeared to be less likely to express their issue based views than extroverts.

To summarise, in response to the basic research questions this thesis has proposed, there are several fundamental points to be made. First, that collective cognition can be based on overlap in key areas of individual's issue based cognition and this overlap itself can emerge in one of three forms. Alternatively collective cognition can be based on various manifestations of team based cognition shared within the team. Role expectation, routine behaviour and the attribution of other's views are three examples found in this research. Second, the relationship between individual or collective cognition and contributions made to team meetings appeared to be mediated by a variety of factors. These included: the distribution of influence, the team's current context, the normal routines of the team, the stage of the team's development as well as several individual level factors that either encouraged or repressed the expression of issue based views. The model shown in figure 8.3 attempts to summarise the relationships that emerged and demonstrates the central argument of the thesis that: **collective cognition and its relationship to behaviour in the team**

environment is *not* able to be explained in a unitary, context independent fashion in the cases studied.

The model shown in figure 8.3 begins on the left with an individual's issue based cognition: their views about their strategic issue. Moving across to the right, the potential for some form of collective or shared cognition is recognised in two forms: issue based overlap and team based overlap. These forms of collective cognition are suggested to co-exist alongside individually held issue based cognition. The model then represents a *filter* through which issue or team based cognition must pass in order to be reflected in behaviour in the team environment and eventual agreement or convergence. This filter is made up of the factors that have been found to mediate the relationship between cognition and behaviour in the three case studies carried out as part of this research.

Figure 8.3: A Model of the Relationships Between Cognition & Behaviour that Emerged from Three Cases Studies.



8.3 Revisiting the Literature & Contribution to Knowledge.

The findings of the previous section and the literature introduced in Chapter Two are used to build the concluding argument of the thesis in relation to extant literature on the collective cognition and its relationship to convergent behaviour.

In the previous section, the findings from all three case studies were summarised and amalgamated into an overall model that described the nature of collective cognition and its relationship to behaviour in the specific TMT environments explored. This model demonstrated that collective cognition can be operationalised in several ways, that these are not mutually exclusive, and that their relationship to behaviour in the team environment is *not* able to be explained in a unitary, context independent fashion. It highlighted that there are a whole raft of variables that act as filters and intervene in the relationships amongst individual cognition, collective cognition and team behaviour. Moreover, it indicates that these variables seem to be of a much more *personal* and detailed nature than those that contingency models of group behaviour have considered in the past e.g. not just based on simple demographics as suggested by Hambrick & Mason (1984).

The central argument that this section builds is that the relationship between cognition (collective or otherwise) and behaviour in teams is far more complex than previous research has accounted for. Second, that the contingent variables that intervene in this relationship are therefore more important in the explanation of team behaviour than MOC work has previously considered. Third, that cognition, operationalised at the issue level, may not be as useful a concept as has been suggested in the past. The amount of 'variance' it is able to explain in team behaviour when considered in isolation could be minimal. In summary, the claim made here is that the time may have arrived for the MOC field to move away from issue based or micro level cognition and for cognitive research in general to become more aware of the context dependencies.

The findings summarised in figure 8.3 can be used to re-examine some of the literature presented in Chapter Two and support the central argument of the thesis as shown above.

Cognition in Strategy Development Research - Chapter two began by introducing the idea that understanding cognition may in turn, achieve a better understanding of the strategy development process: specifically a top management team's ability to converge and act in a co-ordinated fashion. This idea can be found in strategy process work that concludes cognition is important, but fails to establish in any great detail why this is the case (Spender, 1980; Bartunek, 1984; Johnson, 1988). Early cognition work also explores this idea (Eden, Jones & Sims, 1979; Gioia & Sims, 1986; Huff, 1989). The MOC field grew as cognition and its relationship to organisational processes became a popular subject. The Academy of Management formed an *Interest Group* devoted to it, the Journal of Management Studies published two MOC special editions (Eden 1992; Hodgkinson & Thomas, 1997) and recently two edited texts have been published (Meindl, Stubbart & Porac, 1996; Eden & Spender, 1998). In 1995, Walsh's review of the MOC field concluded that future work ought to begin to

focus on complex notions such as collective cognition and move back to its behavioural origins and away from exploring cognition for cognition's sake i.e. as in cognitive science. In 1997, Huff repeated this call.

Collective Cognition - Klimoski & Mohammed (1994) pointed out that even though collective cognition is an increasingly popular concept, it is not at all certain what it is and how it influences organisation processes, e.g. TMT decision making and team performance. They argued that although unclear, it is important for management research to persist with the development of this concept for several reasons. First, a full understanding of cognitive processes is necessary in the exploration of individual functioning (Gioia, 1986). Second they point to the increasing importance of group work in modern organisational life (Cummings, 1981). Finally they argue that combining these two factors produces a need to understand those cognitive processes that appear to transcend the individual. More specifically, they suggest that as the 'torch' of group research specifically concerned with cognition appears to have been passed from social psychology to organisational psychology (Levine & Moreland, 1990), research that seeks to define and explore the concept of collective cognition is vital.

A review of the MOC and broader TMT literatures concerned with collective cognition in teams has been carried out during this research. However, a complete review of this literature was provided at the outset of the thesis to enhance the readability and clarity of the whole document. The various literatures reviewed were organised under four themes that, during the development of the research gained the solidity of the propositions that have been progressively explored and developed. Each of these themes will be revisited here and the contribution of the thesis made explicit.

Collective Cognition as Homogeneity - The first theme addressed in Chapter Two was concerned with the notion of collective cognition as homogeneity between team members and the claim that it is this homogeneity which enables teams to agree. It was argued in Chapter Two that although not necessarily explicit, this assumption could be found in some MOC work as well as in the broader TMT consensus literature. Poole, Gioia & Gray's (1989) model of schema change was used as an example. Initially, the concept of collective cognition as homogeneity was rejected. Resnick (1993) for example points out that individuals construct their knowledge independently of one another and consequently can not share the *same* knowledge: e.g. experts make sense of information in very different ways from novices (Lurgio & Carroll, 1985; Day & Lord, 1992; King, 1995). MOC research that has explored homogeneity in groups of managers mental models of their competition demonstrate diversity based on nationality (Calori, Johnson and Sarnin, 1994), function (Daniels, De Chernatony & Johnson, 1995) and management level (Johnson, Daniels & Asch 1998).

However, there were several reasons why it was considered worthwhile to explore this idea further. First, in order to make a powerful argument against research that has operationalised collective cognition in a very basic fashion I had to be able to make empirical comment that clearly showed how it may be naïve and / or inappropriate.

Second, there was evidence from psychology research to suggest that during group encounters, individuals will focus on the sections of information that is common to them. Stasser & Titus (1985) and Edwards & Middleton (1986) argue that pieces of information common to all members of a group will be discussed at the expense of diverse ideas. Common ideas can subsequently be mutually re-enforced and eventually replace the diversity between group members. Finally, it was argued in Chapter Two that these ideas were reminiscent of Janis' (1982) notion of *groupthink* and in many ways seemed to make intuitive sense. That is, in some cases, people appear to recognise the powerful sense of *being of one mind* with someone else.

There was no evidence of collective cognition as homogeneity in any of the three cases. It is however, not argued here that the notion of cognitive homogeneity should be completely rejected. This work focused on the micro level i.e. issue specific cognition. If collective cognition was explored at a meso or macro level there may be evidence to support the notion of homogeneity. Porac & Thomas (1990) suggested that groups could share knowledge relatively homogeneously at a super-ordinate level (Mervis & Rosch, 1978). For example a group of individuals may not agree how to get from A to B but they do all agree that they want to get to B. In addition, the potential for homogeneity at higher levels was also proposed by Spender (1998). In his recent discussion of the 'the dynamics of individual and organisational knowledge', he comments that shared knowledge can exist at the group or organisational level in the form of: *heedful interaction* (Weick & Roberts, 1993); or *taken for granted aspects of working life* (Schutz, 1972). His views about shared cognition appear to reside in group activity and seem to be associated with concepts that are concerned with meso and macro phenomena. Along similar lines, others have argued that shared assumptions or ideational culture, could be an appropriate way of conceiving of such collectivity (Schein, 1985; Sathe, 1985). There is, perhaps, an implication here that individual differences in cognitions may exist within an overarching commonality of ideational culture. Johnson (1987) presents evidence of such shared knowledge in the 'cultural webs' of many organisations. He demonstrates that there appear to be some *core assumptions* held in common in organisations at the macro level and although these may be relatively few and very generalised, they could arguably be fundamental for the co-ordination of behaviour in those organisations.

It is certainly an avenue that future research should continue to explore. In particular the shared knowledge associated with artefacts and symbols that can tacitly direct and perpetuate organisational life is a promising area for additional inquiry. A recent piece of consultancy I participated in re-enforced these ideas. A core competency mapping exercise carried out in large multinational organisation, revealed basic but similar competencies emerging in Australia, Japan, India, South Africa, Austria, Italy, UK and USA. The interesting question in that work was how did the same message and basic set of 'taken for granted' assumptions spread across this organisation's multinational network. Further research is currently being carried out at Cranfield to explore this. In terms of this thesis, it is simply the existence of such macro level similarity that is interesting.

In summary then, this work explored the notion of collective cognition as homogeneity at the micro level focusing on issue specific cognition. It has

demonstrated that this concept is not especially helpful when operationalised at this level. It is argued that at the micro or issue based level, collective cognition is a more complex phenomenon than that evoked by the notion of homogeneity.

Collective Cognition as Overlap -The second theme discussed in Chapter Two was concerned with collective cognition as overlap between individuals. This theme was taken from two pieces of MOC research that had previously explored the notion of collective cognition manifest as agreement as *overlap* in key areas of team members views: Walsh, et al. 1988; Langfield-Smith, 1992.

In the earlier of the two, Walsh, et al's (1988) experimental work used a surrogate context to build on previous work (Walsh & Fahey, 1986) and gained further empirical support in a re-test conducted some six years later (Houghton, Zeithaml & Bateman, 1994). They argued that individual's views can become aggregated to produce a group level product (realised consensus) and that this is a partial representation of what would have been constructed (potential consensus) if all group members had contributed equally (potential coverage) to the group debate. Instead, the biggest contribution to the shared element in the group level product comes from the most influential members. Walsh et al did not make it clear if less influential group members own views were replaced by those of their dominant colleagues (as Poole et al (1989) went on to suggest in their model of schema change) or indeed if the realised consensus achieved by the group would be lasting and motivate individual behaviour.

Langfield-Smith's later work (1992) produced a clearer picture. She too recognised overlap in her laboratory based studies of collective cognition. However, her experiences collecting and analysing data, led her to postulate that the overlap she uncovered could be a fragile phenomenon that may dissipate when a group ceases to interact. Individuals left on their own recall and re-construct (from their own unique way of seeing the world) what happened in the group or if appropriate, what was agreed, will do so differently. So, outside of the group arena, individual difference could be paramount. It is important to note that Langfield-Smith never tested these ideas. Her findings simply reaffirmed the development of an overlapped collective product within a group environment. Nevertheless this work indicated that the next stage in collective cognition research would be to test this longitudinally.

It was pointed out in Chapter Two that although the concept of overlap was interesting, it had not been tested in a real management context or with a genuine team. Both of the studies discussed above were laboratory based and used surrogate teams. Consequently, many of the complexities of interaction between individuals who are familiar with one another, as well as a range of context dependent effects could not have been accounted for in that work (Lipshitz, 1993; Lipshitz & Strauss, 1997). For that reason alone, it was suggested that the notion of overlap be re-tested in a real environment. However, there was a second reason for re-examining collective cognition as overlap. That was that the relationship that seemed to be being reported by these studies: *that overlap in a team, especially between powerful team members would lead to agreement and that would be perpetuated in teamwide overlap*, seemed to be dangerously simplistic. A whole series of research into group dynamics had

shown that even factors as broad as age, and tenure (Gladstein, 1984; Hambrick & Mason, 1984) in the team also affect the ability to reach agreement.

In this research there was considerable support for collective cognition as an overlapping phenomenon. In fact, evidence of sub group or dyadic overlap was found in all three cases at each round of interviewing. However, at no time and in none of the cases, did this overlap spread teamwide². And, as anticipated by Langfield-Smith, even when the teams did agree during their meeting (e.g. in University Business School and in Construct Chemical's March and April meetings), this convergence was not perpetuated in the form of teamwide overlap. This meant that the basic relationship presented in italics above did not hold.

Three possible reasons for the patterns found in this research were considered. First, a purely cognitive explanation that the agreement the teams reached may have simply faded as individuals were left alone to make sense of their discussions. That is, each team member would have constructed a different memory and when interviewed after their meeting, their recollections would mix that memory with their current and future considerations of the issue under discussion. There was some evidence to suggest that this was the case in University Business School, as both Bill and Peter (who brokered the agreement in the team), moderated their views in relation to those verbalised in the meeting and quite reasonably, were much more concerned with its implementation. The second reason put forward for the dissipation of overlap after agreement, was the simple explanation that genuine agreement had not been reached in the meeting and consequently teamwide overlap would not be expected after the meeting. The third reason, which is represented in the overall model of the research (figure 8.3), is that there were a whole raft of factors that appeared to act as a filter through which cognition (individual and collective) have to pass to be reflected in behaviour. This must operate equally in reverse, i.e. before behaviour (agreement in a meeting) can be reflected back into individual cognition. Although this seems to be a basic argument i.e. common sense, it is one that has not appeared in the ideas put forward by Langfield-Smith, Walsh et al, nor in any MOC work that offers a simplistic operationalisation of the relationship between cognition and behaviour. Again this point adds weight to the overall argument of the thesis that collective cognition is not an easily defined concept and that its relationship to behaviour in the team environment can not to be explained in a unitary, context independent fashion as there appears to be the potential for a whole range of variables to have an impact, intervene in

Moving on, three of the six meetings attended during the entire fieldwork period *did not* result in agreement or convergence but instead in open conflict (Construct Chemicals February & May meetings) or in a decision to postpone agreement i.e. agree to disagree (Colour Scheme). These outcomes occurred in spite of the presence of sub groups of overlap before the meetings and more specifically with influential members in close agreement. It became apparent that dyadic and sub group overlap did not necessarily facilitate agreement as argued by Gioia & Sims, (1986). Moreover,

² The discussion of level that appeared on the previous page may be equally applicable here. That is, teamwide overlap may have existed at higher levels.

on the occasions when agreement was not reached, it was found that the views of the most influential team members did *not* dominate discussions of the strategic issue: i.e. influence had not been the primary mediator of the link between individual cognition and behaviour as predicted by Walsh, et al (1988) and Houghton et al (1994). It emerged that for a variety of reasons, the most influential team members were distracted from their agendas by those less influential than themselves who in turn for some reason were encouraged or compelled to express their views. This was found to be the case in Colour Scheme's board meeting as well as in Construct Chemicals' February and May meetings.

This is an important finding in many respects but primarily because it demonstrated the context dependency of power and influence. That is, although power is able to account for many behavioural patterns in organisations (Russell suggested that 'the fundamental concept in social science is power in the same sense energy is the fundamental concept in physics': 1938 p.12), its influence is not automatically exerted in all contexts and with all individuals. French & Raven (1959) were amongst the first to suggest that A only has influence over B if B recognises it and that recognition can vary according to context. Others have empirically shown that this is the case in the boardroom. Pettigrew & Mc Nulty, (1995) noted how non executive directors had to pull on both *will and skill* to bring their formal influence to bear. Similarly, Brass & Burkhardt (1993) found that use of power in TMTs was dependent not only on position power but its skilled application.

In this work it has been shown that Jonathan in Colour Scheme did not bring the full pressure of his influence to bear in the boardroom but instead worked behind the scenes to achieve his own goals: recall his description of himself as a "benign dictator". Alternatively as a new MD, Aden may have been still in the process of developing his *skills* of influencing his team, although in Pettigrew and Mc Nulty's (1995) terms the *will* was certainly there. At one point in their discussion of strategic decision making, Milliken & Vollrath (1991) argue that the strategy development process may be less about formal influence and rationality and more to do with intuition and being an effective people person in order to manipulate influence. There is some evidence in this case to suggest that this is true. In addition Jonathan's *behind the scenes* style of control, as opposed to using the boardroom as a stage for his influence, is also supported in the governance literature where the impotency of the boardroom is raised (Lorsch & Mc Iver, 1989; Garratt, 1996).

A series of factors contributed to the lack of influence of powerful team members. Several of these lead the less influential team members to feel encouraged or compelled to express their views and in so doing effectively repress or distract the more influential team members. These factors have been extensively discussed (see previous section) and are not repeated here. However, they do build on literature that has noted context dependent factors that effect TMT decision making e.g. Gladstein (1984); Hambrick & Mason, 1984; Priem, (1990); Haleblain & Finkelstein (1993); Hart & Quinn, (1993); Hambrick, Seung Cho & Chen (1996) Knight, Pearce, Smith & Flood (1995). To my knowledge there is not a paper that summarises all the factors that have been shown to impinge on TMT behaviour. Amason & Schweiger (1992) presented something approximating this showing that the majority of TMT work fitted

into three streams: TMT characteristics, processes of TMT interaction and consensus in the TMT. However, research that has discussed these contingencies (Gladstein, 1984; Corner, Kinicki & Keats, 1994) has tended to focus very much on the kind of demographic variables used by Hambrick & Mason (1984). The factors uncovered as especially important in the relationship between cognition and behaviour in the three teams studied here were much more personal in nature and concerned the psychological functioning of team members on quite an intimate level, e.g. personal frustration, lack of confidence, personality type. In uncovering the influence that this type of variable can have on behaviour in top teams, this research has lent support to the arguments of Lawrence, (1997) and Marckozy (1997) who both suggest that opening the 'black box' of individual TMT members thoughts and motivations can produce more useful results than a those achieved by the reliance on demographic surrogates. Once again, social interaction in top teams may be more complex than our earlier expectations have suggested.

A further development to the notion of collective cognition as overlap that emerged from the final case alone was the finding that overlap could emerge in one of three possible forms: thematically consistent & sustained, thematically variable but sustained and thematically variable & temporary overlap. The most common form of overlap in Construct Chemicals was the first: thematically consistent & sustained.

When they first evoked the description of collective cognition as *overlap*, Klimoski & Mohammed (1994) were explicit about the problems that a lack of clarity around this concept could raise for future research. They pointed out that although shared knowledge and overlap were accepted by many researchers as a basic assumption (Isabella, 1990), it was unclear what was meant to share cognition; what was meant by overlap and to what extent individuals would have to overlap and on what kinds of issues before a kind of consensuality, and co-ordinated action could be assumed to be promoted within the team. They showed how it had been assumed across many literatures that collective cognition type notions are associated, not only with team dynamics, but also with their ability to interact in a co-ordinated and convergent manner i.e. improve performance (Bettenhausen & Murnighan, 1985; Mitchell, 1986; Cannon-Bowers & Salas, 1990; Orasanu, 1990). Klimoski & Mohammed questioned these connections on the grounds that the nature of collective cognition in teams had yet to be properly explored and established. This research has contributed to that exploration in three ways. First it has established that overlap at the issue based level may be more likely to exist in sub groups than teamwide. Second it has shown that there are different forms of overlap that can emerge within teams. Finally it has shown that issue based cognition, especially the overlap shared by influential team members, may be the catalyst for agreement in the team, (Walsh et al, 1988), however this can be mediated by a range of factors. Consequently, the relationship between issue based cognitive overlap and the consensuality of a team is, as Klimoski & Mohammed suspected, far from simple.

Collective Cognition as Distribution - The third theme discussed in Chapter Two was concerned with the operationalisation of collective cognition as a distributed phenomena. It was suggested that individuals can hold different views, but between them, they can understand one another and interact in a way that promotes co-

ordinated behaviour and convergence within the team. This proposition grew from several different literatures: cognitive science, social cognition, managerial & organisational cognition and cockpit ergonomics that all converged on the notion of a *shared social schema* (commonly understood ways of behaving). The general argument common to all is that individual team members could hold different views (e.g. at the issue level), but this would be overcome if the group agreed upon and all shared a view of how they should communicate with one another and work together. Fiol (1994) referred to this as shared framing. Weick & Roberts (1993) included it within what they broadly defined as heedful interaction; whereas Larson & Christensen (1993) talked about social decision schemas. In social psychology this form of knowledge is referred to as a social schema (Augoustinos & Walker, 1995) which is a cognitive structure that contains knowledge about the social world. Fiske (1982) argued that social schemas are automatically triggered more often than other schemas and, when triggered, the affect stored in these schema is also recalled.

In the first case; University Business School, there was evidence to suggest that the group may have shared a view of a normal way of interacting in their group meetings, i.e. for Bill and Peter automatically to dominate and for other team members to make only minimal contributions to any agreement reached. At the meeting that was attended, this established routine appeared to facilitate agreement in the team.

In the second case, Colour Scheme, this long established group also displayed evidence of a shared schema of interaction in the team environment. Several *routines* were uncovered. However, in this case, the shared expectation of normal behaviour in the team environment seemed to block as opposed to facilitate the kind of convergence and consensuality predicted by Orasanu (1990) amongst others. This was an important finding as previously, the existence of a shared social schema (Larson & Christensen, 1993) or frame (Fiol, 1994) had been discussed in terms of its positive implications for the team's performance. For example, Orasanu 1990 showed how cockpit teams who had built various shared models for the interpretation of events in their working environment, were more effective in a simulated emergency situation. Those teams which did not have a shared schema were less successful. Fiol (1994) showed how, in spite of diverse views, a group of managers involved in a change programme could converge and co-ordinate their behaviour based on a shared frame of their overall agenda. These researchers associated group norms (Feldman, 1984) or role expectations with high performance. However, recalling Janis' (1982) *groupthink* research, this may not always be the case. Teams may have extremely strong, established and shared schema of how to interact together, but this in itself may be the source of their dysfunctionality. This certainly appeared to be true of the Colour Scheme board at the time of data collection.

In the third case, the Construct Chemicals management team presented evidence that suggested they had yet to establish routines and a shared social schema of appropriate interaction in their team environment. In fact, they appeared to still be engaged in the process of establishing such norms. There were several reasons why this would have been the case in Construct Chemicals. First, and on a general level, there is a tendency for schema to remain stable. Equilibration, the Piagetian theory of cognitive development (Piaget, 1978); demonstrates that people can *assimilate* (absorb some

new elements into existing schemata) and *accommodate* (replace old new schemata to cope with a cognisance of a new reality), but much prefer to do the former. Similarly, Rumelhart & Norman (1978) identified three stages of schema change: *accretion*, learning facts; *tuning*, refining existing schemas and *restructuring*, creating new schemas. They argued that with completely new information, people find the accretion stage relatively easy, but once facts become established tuning drops off and where ever possible, restructuring is avoided. Festinger's dissonance theory (1957) demonstrated that our ability to reject information that does not fit with our predefined view of the world is immense and consequently, once a social schema is established, it becomes difficult to remove.

In Construct Chemicals, the management team had only been working together for some four months. Bearing in mind the resilience of pre-existing social schemas, it would be unlikely that the schema each team member already held for appropriate behaviour in management team meetings i.e. related to a previous incarnation of the management team, would have been replaced or significantly altered. This concurs with empirical evidence from Bettenhausen (1991) who showed that that new members of existing groups (or indeed all members of a completely new group) base their actions on the norms they held when they were members of a previous group. Reger & Palmer (1997) found a similar trend in their empirical work. Rentsch (1993) found that an individual's application of their old social schema to new situations could have positive effects on the performance and consensuality of an entire team. In this case, the possible application of team members' old schema to their new team environment may not have been so positive. At times, in terms of my own interpretation of the data, it appeared that there were some direct contradictions between Aden's schema of appropriate directorial behaviour; in particular appropriate interventions during discussions and those held by his team. That is, Aden believed his team ought to trust his judgement. Mike and Carl at least believed questioning and constructive criticism to be important parts of their roles as directors. So in this last case at least, it was certainly possible that team members were still employing their previous mental models of appropriate behaviour to their new context.

A second reason that may account for the less developed social schema apparent in Construct Chemicals is also linked to the early stage of the team's development. Irrespective of whether the team members were employing previous schema as argued above, they were also still engaged in the process of developing a way of working together and learning to understand one another. Various authors have demonstrated that groups move through universal stages of development (Tuckman, 1965; Mc Grath, 1984; Gersick, 1988) during which the focus of their activities change. In the early phases of development, groups tend to be focused on relational as opposed to task based issues. Tuckman describes this as three stages of 'forming, norming and storming' before the group eventually beings to 'perform'. Similarly, Mc Grath describes groups moving through phases of orienting, clarifying and testing. Whilst Gersick demonstrated that when groups reach the half way stage in their development, a revolution may occur and they begin the whole process once more. All of the above authors suggest that during early phases of development, groups tend to be exploring ways of interacting and looking for consistency in others in order to establish predictable patterns of behaviour which they can trust and rely upon. In this way rules

and commonly shared ways of working together as a team begin to develop. The eventual end product for well developed teams being a sense of belongingness, affection; a regard for other team members.

Weick & Roberts (1993) argued at the end of their paper that undeveloped groups are unlikely to interact heedfully. Instead they display behaviours that could be classified as '*heedless*' interaction which they describe as the tendency for individuals to be focused on their own local situation rather than the joint situation of the team, lacking a kind of team centred altruism. Kidwell (1995) agreed with this. He suggested that if a group has not 'bonded' they can not be expected to display a high propensity for consensuality as members tend to withhold their effort. Weick & Roberts suggest that the combinations of developed and undeveloped groups who may or may not have developed the kind of heedful interaction required to promote their concept of group mind, fit within a matrix. This is shown in figure 8.4 below.

Figure 8.4: A Matrix of Combinations of Group Development and Group Mind Development.

		Group Development	
		Lo	Hi
Group Mind Development	Hi	Short term project teams	Military
	Lo	?	Cults Groupthink

Weick & Roberts point out that new groups don't *necessarily* suffer from a lack of group mind. They speculated that short term project teams may quickly develop a sense of shared roles, specialisms, the location of knowledge and appropriate ways to interact. Conversely, groups that have been together for a considerable length of time will not necessarily have developed a form of heedful interaction. They suggest that over time groups can in fact 'lose their mind', the evidence from Case Two would certainly suggest this had occurred in the board of Colour Scheme.

Interestingly Weick and Roberts give no example for an undeveloped group with no sense of group mind. In an extreme interpretation of this matrix, a completely undeveloped group with a complete absence of sense of rules or shared and standardised ways of behaving is almost impossible to conceive of. For instance, even a group of strangers coming together to kick a football around in a park have a sense of certain rules to be adhered to e.g. not to pick up the ball and run away with it. However, if a less stringent interpretation of terminology is used, i.e. accepting that teams do share many basic rules, the Construct Chemicals management team may fit

into this box as they displayed little evidence of Weick's heedful interaction and were in many ways an undeveloped group.

This presents a challenge in the interpretation of this work. That is, at least one of the teams accessed (Colour Scheme) could be considered to have developed unhelpful ways of interacting i.e. to be acting in a heedless fashion, whereas another team (Construct Chemicals) could be seen to be an undeveloped team still to establish a sense of heedful interaction. Consequently, neither of these contexts would have been good environments to explore the relationship between collective cognition and co-ordinated or consensual behaviour. Therefore the types of overlap seen and the range of factors that mediated its relationship to consensuality may have been a function of the basic dysfunctionality of these teams i.e. a sampling artefact.

This may have been the case. However, there are a number of arguments that can be presented to balance this view. First, even if this was the case, i.e. that these were dysfunctional teams in which collective cognition would be unlikely to exist much less promote consensuality, the fact that this has been established empirically is important in itself. Linking cognitive compatibility or incompatibility to the functionality of groups has already been addressed by Eden & Vangen (1995) and has proven to be of practical use in the prediction of success in collaborative ventures between organisations, as well as developing theory in the field of research into 'collaboratives' (Eden, Huxham & Vangen, 1996). In addition this finding also supports one of the central arguments of the thesis, namely that to operationalise cognition in a unitary fashion and out of context, as has been the case in much MOC work, is a dangerous exercise.

Second, the presence of collective cognition in the form of a shared social schema that is linked to co-ordinated behaviour, consensuality and high performance that is evoked by Weick & Roberts (1993) and Orasanu (1990) and in Roberts later work (Roberts, Stout & Halpern, 1994) may also be something of a sampling artefact. That is, their results may have been the result of more than the functionality and stage of development of the team. For instance, Weick & Roberts & Roberts et al. found that on their aircraft carriers, the team acted with heed and had a well developed group mind. Orasanu's (1990) cockpit crews also had accurate knowledge of one another's responsibilities, specialised roles and the correct ways of behaving in the cockpit and performed well in a simulated emergency. Discounting University Business School that provided a limited set of data to work with, neither of these conditions were found in this research. However, the fundamental difference which existed between the Weick, Roberts and Orasanu research sites and those accessed in this work was their drilled routinisation. The environments that they studied were high velocity (Perrow, 1984) i.e. highly routinised, high risk with well drilled routines a part of the way of life. These environments would have been expected to be standardised with extensive training and the de-personalisation of roles. In such an environment, heedful interaction may be considered as a necessity rather than unusual. Until this piece of doctoral research, the relationship between collective cognition (as shared social schema) and consensual behaviour had not been explored in a 'low velocity', TMT environment. Consequently, it is difficult to state definitively if it was in fact dysfunctionality or a lack of *drilled* routine that was the major factor in the production

of the findings established here. What this research has helped to clarify is that it may be a general lack of team development that comprises the existence of collective cognition and moreover its relationship to consensuality in top teams. However, future research would need to be conducted in a team that was high performing, well developed and 'functional' but operating in a 'low velocity' - non routinised environment, before a complete interpretation of this phenomenon could be offered. This gap for future research is represented in figure 8.5 below.

Figure 8.5: A Summary of Explored and Unexplored Research Contexts.

		<i>Quality of Team</i>	
		Hi	Lo
<i>Routinisation of work Environment</i>	Hi	ORASANU & SALAS (1993) WEICK & ROBERTS (1993)	SOME COCKPIT EVIDENCE NTSB REPORTS of AIR INCIDENTS (Kendal, 1996)
	Lo	GAP	THIS WORK

Third and finally, the notion that a top management team can be *as* functional as other teams (e.g. the aircraft carrier crew) has been argued to be an unrealistic expectation. In their interviews with over one hundred non executive directors, Lorsch & MacIver (1989) discovered that: (1) directors were rarely openly critical during meetings (2) CEOs controlled agendas and meeting formats to follow certain formulas and therefore did not allow others to comment and that (3) directors preferred to confront issues outside of the boardroom, leaving the boardroom itself as an impotent environment. They also note that the general undiscussability that is present in boardrooms is in itself not able to be discussed. This in effect makes a certain lack of functionality a self fulfilling prophecy in the top team environment. Recently the notion of the top management *team*, sharing such developed characteristics as group mind capable of promoting consensuality, has been challenged. Katzenbach (1997) argued that the demands at the top of the organisation mean that senior managers simply do not have enough time together to become a team as opposed to a group of departmental heads. He also argues that the *non teams* at the top of organisations fit the power structure i.e. high achievers are often not happy working collaboratively but would rather exercise control and in that mode of operating make faster, better decisions. Other pieces of recent research also point out how difficult it may be for top teams to be *as* well developed as those lower down the organisational hierarchy: (Garratt, 1996; Quinn, 1996; Eisenhardt, Kahwajy & Bourgeois III, 1997a & 1997b). More specifically, it has been argued that top teams in particular find it extremely

difficult to distinguish between affective and cognitive conflict and so either avoid conflict altogether, or engage in inappropriately high levels of *affective* conflict (Amason, 1997).

In summary then, it is suggested here that top teams in general may not be effective breeding grounds for collective cognition and consensuality. Again, further research would be needed in order to make a fuller comment on this. The aim might be to choose a top team from a high performing organisation and establish if they too failed to behave as an effective team i.e. making use of their capacity to develop *group mind* in the production of *heedful interaction*.

In addition to *shared social schema*, Chapter Two pointed out that the notion of *meta cognition*; knowing the location of knowledge and opinions within a group, was an important part of a team's ability to interact successfully and work as a distributed network with potentially diverse cognition. Although in the first two cases there was evidence of correctly attributed meta cognition on one level (see the above discussion of shared social schema: i.e. attributing roles and predicting behaviour in the team meetings), in the third case, there was evidence that suggested that team members were *misattributing* their fellow team members' cognition. Described by Orasanu & Salas (1993) and in the previous chapter as the Abilene Paradox, the misattribution that occurred within the Construct Chemicals management team, contributed to the breakdown in communication at both the February and May team meetings.

The propensity for misattribution (described as attribution error by Augoustinos & Walker, 1995) as part of everyday activity is suggested to be greater than the propensity for correct attribution. Ross (1977) described attribution error as incorrectly attributing the cause (s) of another's behaviour based on your expectations of them or their situation. The *fundamental* error in attribution is suggested to be:

"the tendency to over attribute another person's behaviour to dispositional characteristics of the person, rather than to situational or contextual factors"

Ross (1977 p.183)

This general propensity to misattribute is suggested to arise from the dominance of individualism in western society (Farr & Anderson, 1983; Moscovici & Hewstone, 1983) which promotes such interpretations of other's behaviour. That is, it has been argued that there is a focus on internal motivation and on the social actor which, when compared to situational factors and the 'collective' environment as an explanation of other's behaviour, is relatively pallid (Fiske & Taylor, 1991). The same fundamental attribution error is not commonly found in eastern cultures (Miller, 1984). In terms of the interpretation of our own behaviour, the *actor observer effect* (Jones & Nisbett, 1972) which describes a failure to be aware that one's own actions are internally and not situationally driven, accounts for the tendency to misattribute even our own motivations to behave in certain ways.

These patterns of *misattribution* were, to a limited extent, recognised in the final case. For example, Aden believed his team to be motivated in part by a desire to *blame* (an

internal motivation) rather than a response to the knock on effects Operations was having in their departments (situational motivation). Whereas the team interpreted Aden's reticence to discuss major personnel change as defensiveness about his own failings as acting Operations Director and not a deliberate decision to not change personnel until he felt a full performance review of operations had been completed (situational motivation). It is anticipated that the team's early stage of development may have exacerbated the tendency to misattribute and that this, combined with a natural tendency to misattribute, would have in part accounted for the open conflict in the team in their February and May meetings.

Behaviour Dominated by Other Factors - The fourth and final theme introduced in Chapter Two was concerned with the idea that there can be a marked difference between what people think and what they say and do in a group context. Argyris (1992), has argued this point. He suggested that there can be important differences between what people say when they espouse their views and what they do when they act them out. Moreover, he claimed that people can be unaware of these differences and the most effective way to demonstrate them is to observe people in action and infer the meaning and purpose that may be embedded in their actions.

This research was able to do this in part by using the breadth of data collected to attribute motivation and intentionality where possible. But in a sense, the proposition that addressed the idea that it is not issue based cognition that best accounts for behaviour in top management teams, was something of a catch all proposition. That is, it was developed at the end of the first pilot case and then throughout the other cases to account for data that fell outside of the cognitive explanation as operationalised here. At the outset of the research there was a belief that the relationship between cognition and behaviour in a top team context could prove to be somewhat complex. Consequently a range of data: personality data, career histories, influence relationships, fieldwork journal, were collected. But actually during the analysis of all three cases it emerged that the range of variables that can confound the association between cognition and action was even broader than initially anticipated. That is not to suggest that those variables initially selected as potentially important did not have an affect, but rather that their affect was not as major a contributor to an account of behaviour in top teams as first anticipated. For example, the personality data collected across all three cases was useful to build a general picture of each informant. However, when engaged in unpicking the minutiae of individual behaviour in context and over time, the generalised images of informants offered by the personality data was not detailed enough to offer a full explanation in itself. This is discussed in greater detail in Chapter Nine where methodological issues are presented. The important point to be made here, is that not only did the factors that were initially highlighted during research design have an impact on the relationship between cognition and behaviour, but also several important factors *emerged* from the analysis. And, as suggested by Argyris (1992) these emerged from close observation of the informants over a period of time.

Two significant factors that clearly emerged from the analysis of the Construct Chemicals case were directorial and personal identity. These are discussed in Chapter Seven and that discussion is not repeated here. Nevertheless, there are two important

points to be made on the basis of these findings. First, that these factors both drawn from social identity theory (Tajfel & Turner, 1986) have not previously appeared as considerations in the MOC literature. Although authors interested in individual and group behaviour throughout the organisation (Kakabadse, Ludlow & Vinnicombe, 1988; Hayes, 1997) have recognised the importance of social identity in the explanation of behaviour. In the strategy literature, *Organisational identity*: an individual's set of constructs about what is enduring and distinctive about their organisation (Albert & Whetten, 1985), has been shown to affect behaviour (Golden-Biddle & Rao, 1997). In particular, how an individual's response to threats to that identity (Dutton & Dukerich, 1991; Elsbach & Kramer, 1996) can produce emotional reactions. However, much of the North American tradition of TMT research as summarised by Amason (1997), has yet to consider identity. Returning to a point made earlier in this section, there may be an argument for the 'black box' of human psychological functioning to be opened (Lawrence, 1997) in order to move fields such as the consensus - performance literature away from their repeated findings of equivocality (Dess & Origer, 1987; Woolridge & Floyd, 1989; Dess & Priem, 1995).

The second point is more important in terms of the overall argument of this thesis. Namely, in uncovering a whole range of factors that can impinge on the relationship between cognition and behaviour in top management teams, this research has again demonstrated that a unitary, or single lens explanation of a complex social and psychological phenomenon is not the most useful approach. This argument bears out what others have said (Barnard, 1938; Deetz, 1996; Tranfield & Starkey, 1998) and shown empirically (Mintzberg, 1979; Pettigrew, 1985; Johnson, 1987).

Even as far back as Barnard (1938), the argument against unitary explanations was clearly made. He wrote that there was a need for research to be concerned with the doing of management, action orientated and pulling on several theories and disciplines. *"Always it seemed to me, the social scientists from whatever side they approached it just reached the edge of organization as I experienced it and then retreated"* (p.xxix) He described the dominant approach at that time (which it could be argued still prevails in the North American tradition today) resulting in work that is *"oblivious to the arts of organizing and not perceiving the significant elements. They miss the structure of the symphony because they can not hear the tones"* (xxiv).

Much more recently, authors have noted that management science could achieve a useful forward momentum by supporting work that is detailed, draws from real time, real life management contexts and explores difficult, causally ambiguous phenomena. This clearly calls for research that uses multiple explanations. For example Deetz (1996) argues that it is the extent to which researchers chose to engage with their research subjects this the key characteristic in differentiating research programs. Gibbons, Limoges, Nowotony, Schwartzman, Scott & Trow (1994) present a strong argument for the prioritisation of research that begins with a practical problem or issue and uses multiple lenses to understand it in a localised context. (they call this *mode 2* research). As opposed to a standard and linear protocol of extracting theoretical gaps in extant knowledge to *set* a problem, and use unitary theory to *solve* it in a reductionist and often artificial context (they call this *mode 1* research). Whereas Gibbons et al are talking about the entire spectrum of social science research.

Tranfield & Starkey's recent paper (1998) focused specifically on management science and also supports this argument.

Giddens' structuration theory (1984) also evokes a multiple lens philosophy. He argues that in explaining social phenomena the *tension* between individual realities and socially constructed realities should be addressed. Giddens discusses the production of behaviour i.e. how the exchange between the individual and their social setting constructs behaviour. Similarly, Weick's theory of enactment (1979) argues that individual behaviour is produced by and produces their social context. Indeed, neo institutional theory may also be viewed as a multiple lens approach to organisational enquiry. Neo Institutionalists (Scott, 1995) recognise the institution at several levels. This is illustrated in the following definition of institution.

"Institutions consist of cognitive, normative and regulative structures and activities that provide stability and meaning to social behaviour. Institutions are transported by various carriers - cultures, structures, and routines - and they operate at *multiple* levels of jurisdiction."

Scott (1995 p.33)

In summary, the argument presented here is that based on the findings of all three cases, it has been shown that cognition alone can not account for behaviour in top management teams. This is not to suggest that understanding cognition can not make a substantial contribution to our understanding of specific organisational activities such as the strategy development process. But rather that its contribution is best made when supported by an appreciation of other important factors that may also impinge of that activity. In this research two such factors emerged; directorial and personal identity.

The most important overall point to be made here is, as represented in figure 8.3 that models the findings of this research, that understanding behaviour in top teams requires a multiple lens approach. The cognitive perspective offers a significant contribution but it has been clearly shown that it is not operating in isolation. The interesting question in terms of concluding this thesis is, with hindsight, would I have re-designed this work. This point is discussed in the next Chapter.

8.4 Summary & Overall Conclusions

This chapter has presented a discussion of the complete findings from all three cases in section 8.2. It gradually built a explanation of the development of all the propositions explored in this research i.e. from proposition I to proposition IVc. A model that represented the incremental development of these propositions was presented. The next section (8.3) built up an overall argument that acts as the main conclusion of the research. That is, that not only is collective cognition a complex phenomenon in itself, but also that its relationship to behaviour can be affected by a whole series of factors. Consequently, if TMT behaviour and other organisational processes are to be understood from a cognitive perspective, supplementary lenses must also be used in order to arrive at a complete understanding.

In addition to this overall argument, several other important points were made. These are summarised here. First, it was argued that, although there was no evidence for collective cognition as homogeneity at issue level, this notion may not be redundant, just more usefully applied at more macro levels. Consequently it was suggested that future research interested in micro or issue specific cognition should use an alternative operationalisation of collective cognition.

The second theme discussed here was the notion of collective cognition as overlap and its relationship to consensuality in TMTs. Firstly collective cognition as overlap was shown to exist in three forms with potential for a fourth. Second, the relationship between overlap and consensuality was questioned on several grounds: (1) it would appear that overlap does *not* automatically lead to consensus, (2) consensus does *not* automatically lead to overlap, (3) the presence of two or more powerful individuals overlapping does not automatically lead to their dominance of the meeting and (4) that a whole range of context dependent variables intervene in these relationships.

The third theme explored the findings of the research in relation to collective cognition as a shared social schema, i.e. that team members could share an understanding of how to interact and this could promote co-ordinated behaviour e.g. heedful interaction. In the first case this was found to fit the data collected. In the second case the team appeared to share a schema, this did not facilitate but instead inhibited consensuality. The third and final team showed only limited evidence of sharing an understanding of how to interact to promote consensuality. The point was made that two of the three teams could be described as dysfunctional in some way and therefore not appropriate contexts in which to explore collective cognition and its relationship to consensuality. Several arguments were made to balance this view. The most important of these was that in comparison to previous research, a definitive comment about the affect that the functionality of these teams had on the outcome of the analysis can not be made. It is yet to be established if it is *functionality* or *drilled routine*, that produced Weick & Roberts (1993) heedful interaction. It was argued that the gap for future research is for research to be conducted with high performing teams in low velocity environments.

The fourth and final theme was concerned with the 'catch all' notion that, irrespective of individual or collective issue or team based cognition, other factors motivate behaviour in the team environment; i.e. there can be a vast difference between what people say and what they do. Several factors that were introduced in Chapter Two were found to have an impact, however, other factors that emerged from the analysis were directorial identity and personal identity. Both draw from Tajfel & Turner's (1986) social identity theory. Two important arguments were made based on this finding. First that this type of variable, dealing with psychological functioning at a deep and complex level has not been previously considered in the MOC literature even though literatures that deal with affect, identity, psychoanalysis etc. all recognise and discuss the impact of cognition. This perhaps indicates a need for MOC research to reappraise the individual in terms of the full range of deeply complex psychological functions. Second it was argued that the exploration of this last theme clearly showed that collective cognition and its relationship to behaviour in the top team environment is not a *unitary* phenomenon. In fact, if sensible links are to be made between

cognition and organisational processes, the possibility of multiple factors having an affect can not be dismissed. And, although complex, TMT behaviour and cognition can be understood by combining several factors as has been shown in this research.

The next chapter moves on to discuss several implications of this work both in terms of the important lessons that I have gained from the research process and the practical insights that were offered to those who participated in it.

CHAPTER NINE

Implications & Conclusion

9.1 Introduction

This chapter concludes the thesis by offering a final comment on several important issues. The first of these, covered in section 9.2 is a brief reiteration of the contribution that the thesis has made to extant knowledge and consideration of the implications for future research. The next section 9.3, discusses the limitations of this research. Section 9.4 discusses the implications that this research has for the managers that participated in it as well as considering some broader implications for TMT's in general. Finally section 9.5 discusses some personal aspects of learning that occurred as part of the PhD process.

9.2 Reiteration of the Major Contribution of the Research.

The previous chapter put forward an argument suggesting that not only is collective cognition a complex phenomenon in itself, but also that its relationship to behaviour can be affected by a range of factors. Consequently, if TMT behaviour and other organisational processes are to be understood from a cognitive perspective, other lenses must also be used in order to arrive at a sensible understanding. Several more detailed points were also made:

- That future research interested in micro or issue specific cognition should not operationalise collective cognition as homogeneity but rather use an alternative. A number of alternatives were examined.
- Collective cognition as overlap was shown to exist in three forms with potential for a fourth
- The relationship between overlap and consensuality was questioned on several grounds:
 - overlap does not automatically lead to consensus
 - consensus does not automatically lead to overlap
 - the presence of two powerful individuals overlapping does not automatically lead to their dominance of the meeting
 - that a whole range of context dependent variables intervene in these relationships.
- There was evidence to operationalise collective cognition as shared understanding of how to interact in the team environment, but this would not necessarily promote consensuality.
- When there was only limited evidence of sharing an understanding of how to interact to promote consensuality, the relationship which emerged may have been the result of a sampling artefact, i.e. dysfunctional teams.
- Definitive comment about the effect that the functionality of these teams had on the outcome of the analysis cannot be made, as it is yet to be established if it is functionality or well drilled routine that promotes heedful interaction.
- Future research should be conducted with high performing teams in low velocity environments.

- Irrespective of individual or collective issue based or team based cognition, other factors motivate behaviour in the team environment: political motivation, personal circumstances, directorial identity and personal identity.
- There is a need for MOC research to reappraise the individual in terms of the full range of deeply complex psychological functions i.e. in terms of goals, affect and identities.

Implications for Future Research - The above contributions, combined with the major argument of the thesis: *collective cognition and its relationship to behaviour in the top team environment is not a unitary phenomenon. If sensible links are to be made between cognition and organisational processes the possibility of multiple factors having an effect can not be dismissed*, have several implications for future research. First, there are several quite specific points.

The most obvious of these was explicitly argued in the previous chapter and concerns sampling. A clear research gap was identified in terms of both the functionality and the routinisation of a future research sample. This work looked at teams that were not functional in environments that were not required to be highly routinised. Whilst others (e.g. Weick & Roberts, 1993) have looked at functional teams in highly routinised environments. Future research may wish to target the gap which has become apparent; functional teams operating in a non routinised environment i.e. successful TMTs. In this way it can be established which contextual factor *functionality* or *routinisation* has the major impact on the strength of the relationship between collective cognition and consensuality in teams.

The second of the specific implications for future research to arise as a result of this study, is concerned with the mapping method used. It became apparent that the VCST method had several difficulties associated with its use in the interpretation of rich and complex issues. This important point is discussed in the next section where limitations of this work are discussed. The lessons learned as part of this research would imply that in future, research that is designed to cope with complex issues ought to employ a mapping method that matches and mirrors that complexity. Using the interview protocol published by Eden & Ackerman (1998) in conjunction with DECISION EXPLORER could be a more appropriate choice.

Leaving specific implications for future research aside, the central argument of the thesis (shown in bold italics above) stressed that one of the most important issues raised in this work has been the complexity of the relationship between thinking and behaving. Recognition of this complexity presents future research with the problematic task of finding a route through it. This is a potentially difficult task for several reasons. To illustrate; if a piece of future research was interested in exploring the relationship between collective cognition and behaviour in a functional, non routinised TMT, then in line of the argument presented above, it would be important to establish what factors may possibly mediate that relationship. Presumably it would also be useful to be able to establish these before fieldwork began so relevant data can be collected in an appropriate fashion. In the case of this research a clear assessment of team members own goals, personal identities and levels of positive and negative affect at the time of each interview may have been useful. However, these factors are likely to vary according to context. Consequently, research design may have to begin

with the context, establish what the mediating factors may be, focus on these and together with cognitive and behavioural data then construct an explanation. This approach is the reverse of standard protocols; i.e. research contexts are often made sense of in terms of predetermined expectations. Such a context dependent approach also implies that researchers need to have some level of *multi-disciplinary* skill in order to be responsive to the demands of specific contexts. This issue is discussed in more detail in section 9.4 where important personal lessons learned during the PhD process are presented.

Finally, the findings of this research have implications for future MOC work in that the some of the arguments put forward by Walsh (1995) in his review of the MOC field have been supported. In particular his implicit message that cognition ought to be operationalised in a sophisticated way if it is to make a contribution to understanding organisational processes. This means including broader considerations such as affect and social context. The demand to employ a broader conceptualisation of cognition again places pressure on researchers to begin their *cognitive* exploration of organisational processes from the platform of a reasonably advanced appreciation of what cognitive functioning can mean; i.e. a general background in psychology. As with the previous point, this implies that to some extent, there may be a need for researchers to be multi-disciplinary and have a basic awareness of the fundamental principles and issues in several fields of research or indeed core disciplines. Again this issue is discussed in greater detail in the penultimate section of this chapter.

9.3 Limitations of the Research

This research took a specific approach to the exploration of cognition and behaviour in top teams and in so doing presented a limited account. That is, the nature of the research questions argued in Chapter Two, pre-determined the research design of the work; i.e. exploratory, case based and interested in depth as opposed to breadth. Consequently, the findings of this work may not be generalisable and applicable to all TMTs. There are two explicit reasons for this. First, even if the surrogate context of the first pilot case is included (a middle as opposed to top management team), only three teams were observed and interviewed; clearly a limited sample. Second, of the teams accessed, at least two could have been described as dysfunctional in some way. It has already been suggested that the results discussed in the previous chapter may have been a sampling artefact and applied only to less functional top teams. An argument was presented to balance this view in Chapter Eight. Nonetheless, this work would have benefited from access to a functional team. An agenda for future research would certainly be to continue to access a range of top teams, in particular high performing teams that operate in a non-routine or 'low velocity' environment.

A second limitation in this research is the difficulty encountered with the cognitive mapping method selected for use in all three cases. An account of the research methods employed has been given in several of the previous chapters and is not repeated here. However, it is important to note that the VCST was found to offer an inadequate representation of informants' cognition, especially in the last longitudinal and complex case. The data collection in this last case had been fully collected before the analysis that really began to reveal the vulnerabilities of the VCST had begun on

Colour Scheme. Even though VCST had been used to collect the cognitive representations in the last case, the full interview transcripts were still available for further analysis and in this respect COPE was employed as a useful data management tool. The end product of this analysis was a full and insightful interpretation of the data collected in this last case. Nevertheless, the problems with the VCST remain as a limitation in this work. In future research that is interested in in-depth accounts of cognition and behaviour, it is doubtful if the VCST would be used. The likely alternative would be use the kind of interview protocol described by Eden & Ackerman (1998) and therefore DECISION EXPLORER.

A third and final limitation of this work concerns an argument raised in the previous chapter. Namely that this work began with a unitary framework to explore cognition and behaviour in top teams i.e. MOC perspective. Even during the analysis of the pilot case it became clear that this approach would be insufficient to cope with the complexity of the subject matter. This issue was addressed by returning to the literature on several occasions and choosing to employ a progressive case design that was capable of incorporating important findings into each successive case. This was a great strength of the research design in that it did not persist with a unitary framework that could have seriously limited the contribution the research could have made. However, it also presents an important limitation of the work, namely that many of the literatures that were built into the research incrementally as it progressed were inevitably dealt with in a more cursory fashion than would have been ideal: a trade off between detail (breadth) Vs integration (depth) had to be made. In spite of this limitation, the research has managed to offer a broad ranging account of cognition and behaviour in top teams pulling in and highlighting many literatures that are not normally incorporated within the MOC field. This issue is picked up as one of the key lessons of this research process and is discussed in greater detail there.

The final limitation of this and of all cognitive work is the unavoidably partial account that was constructed of an extremely complex phenomenon. There are many aspects of human psychological functioning that can be considered in an account of behaviour. This work has been able to capture only some of these aspects. It must be stressed that in the last case in particular, the proximity to the context and the informants that I was able to build over four months of close contact greatly enhanced the interpretation I was able to offer. Nevertheless, as in all qualitative research, this was only *one* of the many other interpretations that could have been taken from the data collected.

9.4 Practical Implications

One of the demands that management and social science research in general, is increasingly having placed upon it, is to be of some relevance practice: to have a voice that can speak to the management community. The problem with this demand is that the contributions a thesis makes on a theoretical level may not always seem that great when applied to practice. However, their usefulness may be somewhat more apparent if applied to the context from which they were drawn.

In the spirit of this argument, this section that discusses the practical implications of this work, spends time discussing the implications that this work had for the teams who participated in it. This is in addition to a broader discussion of the implications for top teams in general.

At the end of the fieldwork period of this research, I was given the opportunity to present some of the findings of this research to the teams who had participated. In University Business School and in Colour Scheme one to one and short group sessions were conducted to feedback some general findings. In Construct Chemicals, I benefited from a longer term relationship. After a full day session at Cranfield and one to one sessions with each director, I was given the opportunity to work with the team to produce a set of recommendations and monitor their implementation: a top team coach. This relationship lasted some six months and finally ended in January 1997.

As the analysis of this case demonstrated, this team suffered as they did not *share* a model of appropriate behaviour in the team environment, moreover as a consequence of this there appeared to be a prevalence of affective conflict linked to the misattribution of motive. After this initial interpretation of the data had been shared with the team, they were able to work towards establishing a way of working together that where possible, went some way to helping them make correct attributions of each other's views as well as being prepared to engage in cognitive as opposed to affective conflict and finally, to promote full and frank discussion of future decisions that they were faced with as opposed to engaging in 'posturing' behaviour.

To achieve this, and with the consent of all the directors, the team shared some revealing aspects of their own goals, their own needs and preferred ways of behaving. A useful mechanism to move the group into this kind of discussion that can quickly become threatening, was to use 'concrete data' i.e. personality data and inconsistencies in interpretations from the interviews. If properly and sensitively facilitated, this kind of session can greatly enhance the team members understanding of one another's motivations. Once this had been established, the team were helped to introduce several helpful *routines* that could develop their ability to have a full frank discussion of important issues in their organisation. There were two aspects to this intervention: first a new infrastructure was put in place and second the team's ability to work within that structure was monitored in meetings.

The new infrastructure was designed to legitimise constructive criticism, cognitive conflict and promote consensuality via open debate. This included as a central element a virtual agenda and temporarily highly structured board papers. The virtual agenda was a constantly rolling agenda on the company's 'intra net' to which all directors had immediate access. Agenda items could be placed on the appropriate page for the appropriate month's meeting. The agenda for any month's meeting was pulled off the intra net *two weeks* prior to the meeting. In this way individual directors were all contributing their voice to the meeting and fulfilling their goals to be involved.

For the virtual agenda to work properly each director needed to commit to presenting a board paper to correspond to any item they placed on the agenda. This was to be done in good time for the meeting. For example, if they have placed an item on the

rolling agenda for June they had to work on that document in the months preceding and have it ready for circulation when the agenda went live two weeks before the meeting. To promote *effective* discussion and to prevent an *overburdening* of directors with too much reading, a format was followed for all board papers. Papers should offer a presentation of relevant background information to an issue, this should be condensed into a summary of one page with an appendix attached for further reading when necessary. The paper should then present the critical issues and more importantly a discussion of possible solutions and their associated advantages and disadvantages. The debate in the boardroom should be about the *possible solutions* and not stray into a discussion of non relevant issues.

A further requirement introduced in this team who appeared to have diverse views about their role as directors, was the *strategy section* at the end of each board paper. The author of a report was required to comment on how the issue they had explored and its potential resolution contributed to, or incrementally changed, the strategy of the organisation. This kept the concept of strategy top of the mind and developed the skill of strategic thinking in each of the directors. This helpful routine was especially helpful to the Construct Chemicals team for the following reasons: (1) they did not have an established routine and were still in the process of developing one, this artificial and temporary routine helped to encourage positive and constructive behaviours that may become part of the team's normal mode of interaction; (2) in the absence of routine and a lack of familiarity with one another, the team were misattributing motives to one another, the board paper format that made views explicit, removed some of the tendency towards fundamental attribution errors; (3) having access to virtual agenda and board papers, enabled the directors to form their own considered opinions ahead of meetings and so made them less reliant on their immediate and often affective responses to information, or opinions they were hearing for the first time in meetings.

The rather rigid format for the presentation of board papers was designed to be a temporary measure, in place for under a year until the team began to find a less threatening and more consensual way of interacting with one another that was acceptable to all. The team were 'coached' in so much as I was present at six months of meetings to assess the incremental development of an accepted way of interacting. By the end of this period the group had moved away from the board papers and were working *more* successfully as a team. At this point my contact with them ended. This was almost a year from when fieldwork had first begun (Jan 1996 - Jan 1997).

However, over and above the implications that were specific to Construct Chemicals, there were and are important contributions that this work can make to management practice in general and these stem from the central argument of this thesis : namely the context dependency of the relationship between collective cognition and behaviour in top management teams. On the surface, to suggest to managers that they ought to be very aware of how multiple factors impinge on their interaction as a team could be viewed as telling them to do what is for them common sense. It could conceivably be argued strategy makers are more likely to accept multi-faceted explanations of their complex reality than academics who may crave unitary explanations. The more important issue is, can individuals who are deeply embedded in their own situations

clearly see the multi faceted nuances of what they may be more or less successfully managing day to day; possibly not. One of the key roles that the kind of intervention I was able to undertake with Construct Chemicals was not to make the obvious statement that many things impinged on their interaction as a top team, but rather to help them see what those things were, to understand them and take action to make a better job of managing them. This process clearly follows Egan's (1994) model of counselling where individuals are taken through process of exploration, understanding and action. The important point about the counselling process in terms of this analogy is that during counselling, individuals are very rarely *told* or shown anything about themselves that they did not know. Through skilled reflection, the counsellor can help their client make sense of issues that on some level they were previously aware of (Woolfe, 1996).

To begin with the uniqueness of a team and their own context dependent factors that impinge on their ability to work together and sculpt the direction of their organisation, is *not* a usual approach to adopt in relation to strategy development. The dominant approach that can be traced throughout theories of strategy development takes the opposite view, i.e. offers prescriptive theories about what organisations ought to do as opposed to working from the specifics of context and establishing what an organisation is already doing and moreover capable of doing. Eden & Ackerman (1998 p.4) describe the context dependent approach as 'emergent strategizing' and point out how limited its application is within the field of strategy as a whole.

The central argument of this thesis which also prioritises context, has several implications for *the way in which* many theories of decision making that, however implicitly, make cognitive assumptions in the design of their prescriptive solutions for strategy development, are used in practice. For instance, the school of thought that prioritises strategic planning offers the implicit assumption that if enough analysis is done, and objectives are clear enough then everyone will eventually come to see the world in one way and strategy will simply *happen* (e.g. Porter's (1980) five forces). This implies that various processes of planning will facilitate cognitive homogeneity and that this will drive strategy. An alternative school of thought that prioritises devils advocacy and dialectical enquiry as effective mechanisms for achieving effective strategy development (Schwenk, 1982) seems to assume that via challenging debate, differences in views can be resolved. This implies that managers who may share some views (overlapping) but not others can employ devils advocacy to surface these views, debate differences and eventually find solutions, construct consensus and assume they can avoid affective conflict. The important point to illustrate here is that underneath all of these schools of thought, whose prescriptions have had major impacts on management practice, there are implicit cognitive assumptions and it is not immediately evident if any of them appear to recognise the context dependency of this phenomenon. The argument that I am making here is that in order to intervene in strategy development in organisations, there ought not to be a *prescriptive* approach i.e. it is not appropriate to apply a recipe without first exploring the context, but rather a process of exploring and understanding the context should take place before working out a course of appropriate action. This would seem a simple point to argue, however it is one which is rarely employed.

9.5 Learning as Part of the PhD Process.

In this section some of the most significant lessons I learned during the PhD process are discussed. Inevitably some of these issues have already been discussed in the limitations of the research. However, this section is designed to offer a personalised account of the journey through the PhD process and specifically address those issues that have emerged with the benefit of hindsight. This section is an important part of this thesis as it tries to offer some degree of insight to fellow students who may wish to embark on a similar journey. Also, by making explicit some important lessons I have learned during this process, it is possible that I too may remain cognisant of them in the future. The inclusion of this section was initially prompted by an anthropologist's honest account of his first fieldwork experience with the Dowayo tribe of Cameroon: Barley (1986). He demonstrated to others that followed him some of the pitfalls and great joys he had experienced along the way. He achieved this by determining at the outset to show his fieldwork as it was, 'warts and all' and in so doing perhaps alleviated some aspect of the struggle that others, working without the benefit of hindsight, faced.

Perhaps the most difficult issue that became apparent during the research was concerned with unitary and or multiple approaches as introduced above. The approach taken here started with a unitary explanation and turned to multiple theories and literatures to account for the complexity uncovered. In the previous chapter the question 'would I take this approach if faced with the same PhD process again' was introduced. The response, based on the experience of the past five years and an awareness of a current debate within management science is 'maybe'.

As has been repeated many times in this chapter already, this work began with a unitary perspective which in Gibbons et al's (1994) terms is classified as *mode one* research. However, I moved into *mode two* i.e. using multiple lenses, to account for cognition and behaviour in top teams. In making this shift, I was aware of some of the problems I would be creating. Gibbons et al discuss this issue and describe it as the demand on the researcher to be 'trans-disciplinary'. For inexperienced researchers such as myself, to learn concurrently about research *per se* and become competent in disciplines outside of their original core discipline is extremely demanding. The obvious risk is that the student deals with many disciplines superficially; none are considered in depth and the contribution to knowledge becomes lost along the way. I spent a long period of time in between my first pilot case (University Business School) and the two that followed struggling with these risks and demands but believe that the phenomenon observed could not have been explained through a unitary lens and that explanations finally offered benefit from a multiple lens approach.

The question remains, if starting this research again would I with a multiple frame (bottom up) and spend long periods of time iterating between the field and literature to build an emergent explanation. The answer in terms of doctoral research in which there are several other demands, would be no. However, at this point in time with potential new projects about to begin, the answer would be yes. The debate of the relative merits of modes one and two is still continuing within management science

(Tranfield & Starkey, 1997) and will not be resolved here. However, it is my belief that just by trying to take the mode two route have I managed to understand some of the rich and complex events witnessed in three organisations. In Barnard's (1938) terms I understood some of the tones and at least captured one melody, to have persisted with mode one I may have heard only a collection of single notes.

Another important lesson learned during this work has been about the frequency with which a kind of *satisficing* decision has to be made. That is, in spite of what seems to be careful design of a research programme, experience in the field can force the reappraisal of those decisions when it is often too late to reverse a decision. In particular, the choice of method to achieve a representation of informants' cognition and of the research sites accessed presented problems in the interpretation of this work. Too late it emerged that the VCST was not a sophisticated enough method to deliver the kind of detail needed. Linked to this lack of manoeuvrability was the insufficient space between the last two cases. As made clear in Chapter One, it was difficult to gain the kind of access to TMTs that this work required. Consequently, when access to two organisations arrived at the same time, neither was turned down. However, this removed the opportunity to make important amendments to the data collection protocol in between cases. Again with the benefit of hindsight, this was a decision that satisfied one need (to gain access) but not another (to reappraise theory and method in-between cases). It is not suggested here that the wrong decision was made: access was clearly the more pressing need. The lesson to be stressed here is my increased awareness of the difficulties of conducting case based qualitative research. Although all eventualities can not be accounted for ahead of time, the experience of conducting this work has broadened my appreciation of the potential pitfalls of such satisficing decisions.

One final and overall comment that I would make concerning important lessons learned during this process has been the great frustration that qualitative work can bring with it. Specifically, the inconsistency of standards available to guide fundamental decisions. In an effort to conduct rigorous yet insightful and 'artful' (Wolcott, 1995) qualitative work, I looked for benchmarks and exemplars throughout published work and to get greater detail, successful PhD theses. The level of detail about and the legitimacy of different analytical methods adopted by different researchers was hugely varied.

This was the case in the work taken from top rated journals, some gave virtually no detail of method at all (e.g. Weick & Roberts, 1993) others gave huge amounts of detail that at times seemed somewhat laborious and overly concerned with meeting standards belonging to quantitative / positivistic work (Gioia et al. 1994). Within the examined PhD theses read, the inconsistency of standards was even greater leading to more confusion. This lack of standardisation seems to be endemic in qualitative work at this time. It was an issue that I had a genuine struggle with. In finding a way through this difficulty I have learned a great deal about the interpretation of complex data. An anecdote of Malinowski's (referred to in Wolcott, 1995 p.69) seemed to be frighteningly close to the truth at times: he commented that the wealth of data that confronted him in the field was startling; if only he could find some way of documenting and making sense of all of it he might be really on to something !

One of the *most* important lessons learned in this research has been finding a way through qualitative analysis and learning to have confidence in the insight gained from being in the field. Much of that confidence began with Wolcott's (1995) book that described fieldwork as art. When making important interpretations of the data I collected e.g. choosing to focus on key themes in each informant's views expressed in interview, a passage in this book seemed to fill in the gaps that the inconsistencies in published research had left.

"This is not unlike a story attributed to Michaelangelo. When asked to describe how he carved the magnificent David, his explanation was "I took a block of stone and chipped away everything that was not David"

Wolcott (1995 p.27)

This analogy is not presented here to suggest genius in my work ! Rather, it is used to illustrate how I found a way through difficult periods of qualitative analysis by chipping away at the data that did not resonate with what I had seen happen in these organisations.

9.6 Summary.

This chapter was designed to act as a conclusion to the thesis in several ways. The first was to re-iterate the findings of the research in terms of both the overall and more specific arguments developed. Second, the limitations of the research were highlighted and in so doing comments about future research were also made. Third, the implications that this work had for those who participated in it as well as the broader management community were discussed. Finally, personal lessons learned during the PhD process were made explicit and many important issues that had arisen during the research were reviewed with the benefit of hindsight.

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APPENDICIES

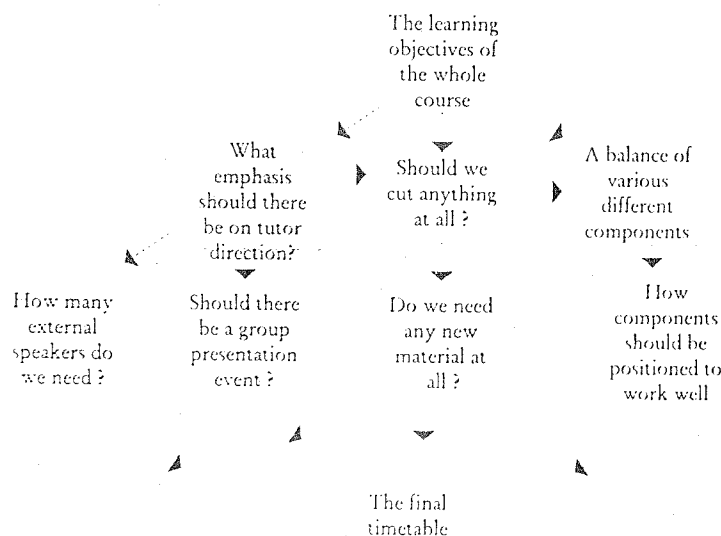
APPENDICES TO CHAPTER FOUR

4.1: An Example of the Reduction of a Map to Key Themes

This appendix is designed to show how a complete map was reduced to the key themes that were then used in further analysis of this case. In distilling the key themes from this (and all the other maps collected from University Business School), three characteristics of the map and interview transcript were considered. These were: (1) the centrality of each construct to the others in the map, how linked it was; (2) the primacy of recall; (3) repetition of the construct; (4) how the construct was expressed during interview, i.e. the emotion, enthusiasm, commitment, interest etc., used in the verbalisation of each construct. Note, that if several constructs could all be collapsed under one heading and this was central to or dominant in the map, then this would be distilled as the informant's key theme.

Peter Hall's complete map, constructed during his interview before the team meeting, is shown below. In his interview Peter had written 'The Learning Objectives' on his first card. He then proceeded to place this at the apex of the map that he then produced. He continually referred back to this construct showing how others relied upon it. For example he explained that once the objectives of the course had been clearly defined, the amount of time students needed to spend with their tutor could be decided and based on this decision, the number of external speakers needed to fill time slots could also be judged. In Peter's map, the repetition, direct linkages and associated linkages of this construct led to its selection as his key theme that best reflected his view of the changes to be made to the Summer School before the team meeting had been held.

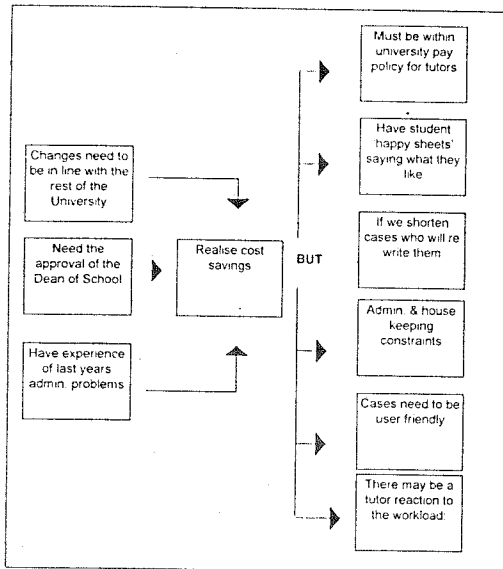
Figure A1: Peter's Complete Map Produced Before the Team Meeting.



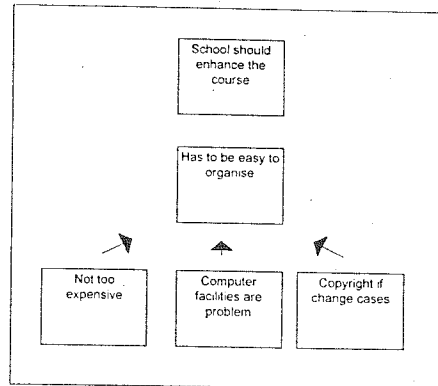
4.2: University Business School's Team's Maps.

Maps Collected Before the Team Meeting

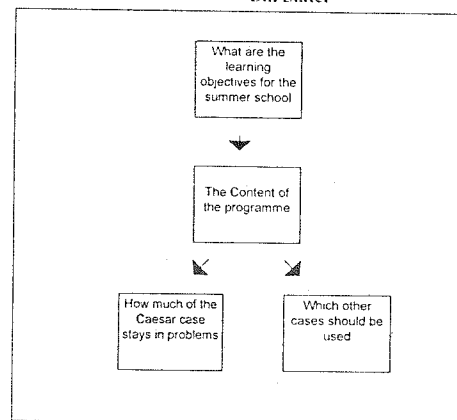
Malcolm Shorthouse



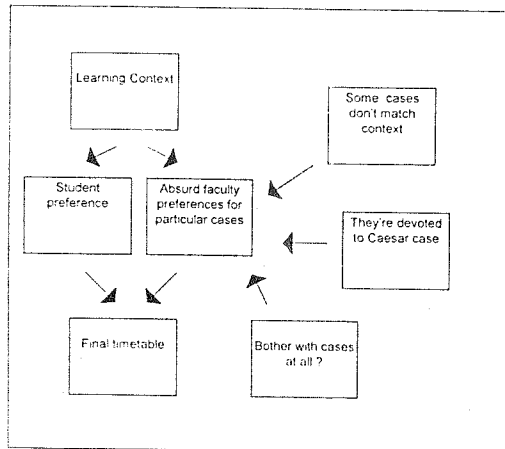
Sara Cullis



Bill Slater

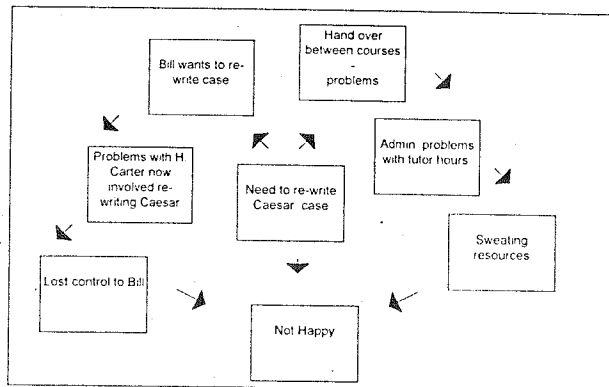
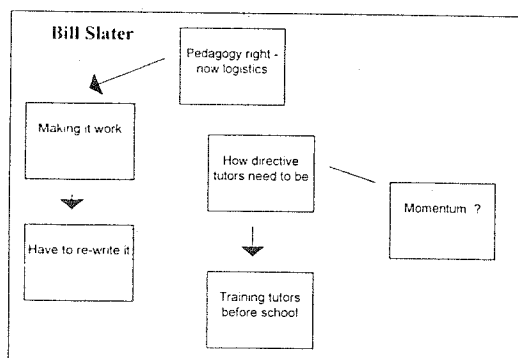
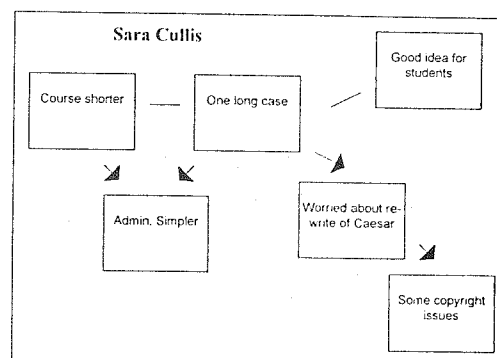
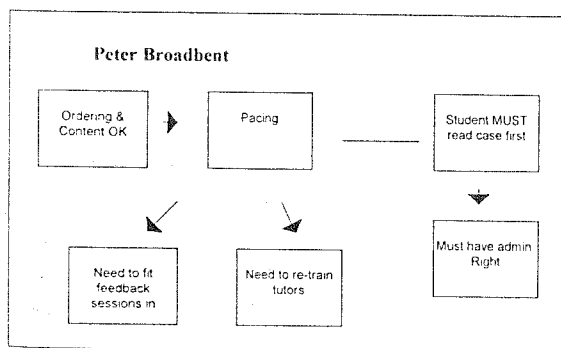
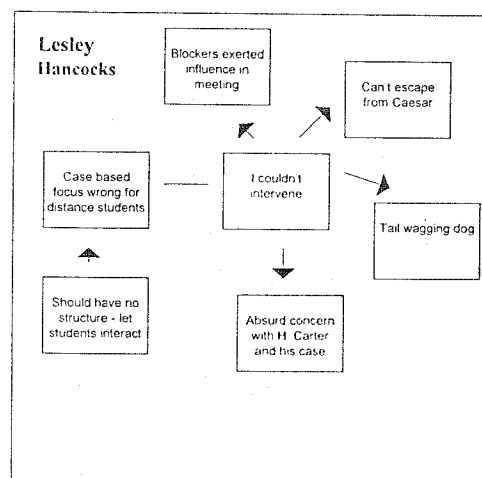


Lesley Hancocks



Maps Collected After the Team Meeting

Malcolm Shorthouse



APPENDICES TO CHAPTER FIVE

5.1: An Example of the Reduction of a Map to Key Themes

This appendix is designed to show how a complete map was reduced to the key themes that were then used in further analysis of this case. In distilling the key themes from this (and all the other maps collected from Colour Scheme), five characteristics of the map and interview transcript were considered. These were: (1) the centrality of each construct to the others in the map, how linked it was; (2) the primacy of recall; (3) repetition of the construct; (4) how the construct was expressed during interview, i.e. the emotion, enthusiasm, commitment, interest etc., used in the verbalisation of each construct; (5) if several constructs could all be collapsed under one heading and this was central to or dominant in the map, then this would be distilled as the informant's key theme.

The map that Alun Harris, Colour Scheme's Finance Director, produced during interview after the board meeting is used to illustrate this distillation process. The discussion of the strategic change program in the board meeting had resulted in something of a stale mate. The team had agreed to disagree, and what had appeared to be a basic principle (that 40% of the company's business would be derived from its five major customer inside five years) that had been agreed to at the outset of the work, had been a source of unresolved conflict in the meeting. The less influential team members had introduced this theme and dominated the meeting.

At the time of his second interview Alun was frustrated at the lack of progress; as were Jonathan and Jackson, but his key theme (s) at this time were twofold: (1) the urgency with which changes to the organisational structure (specifically the TMT; removing Clive & Adrian) needed to be made, (2) the extent to which the board are polarised. These two issues were closely linked themselves (i.e. 2 justifies 1) and were between them the starting point for all the other constructs that emerged. In addition Alun return to them on several occasions during his interview to reiterate their importance. For these reasons, these two themes were considered central to his view of the strategic change program at that time; these are shown in boxes with dotted lines.


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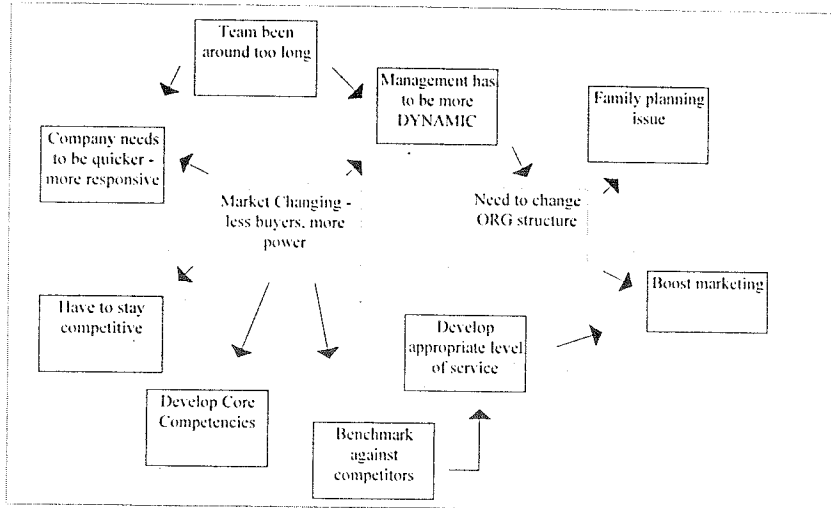
graph TD
    A[Some of us have a vision] --> B[Change Organisational Structure]
    B --> C[Must move on to next change stage]
    C --> D[We can do nothing - status quo]
    C --> E[We can fudge it - half measures]
    C --> F[We can do it properly]
    F --> G[Adrian should lose sales and marketing]
    F --> H[Clive should retire early]
    G --> I[Need marketing director]
    H --> I
    I --> J[OUR meeting didn't change a thing]
    D --> K[Conflict likely at next meeting]
    E --> K
    K --> L[Outsider running next meeting]
    K --> M[The board is POLARISED]
    L --> N[OUR meeting didn't change a thing]
    M --> O[All need to SEE need for CHANGE]
    M --> P[Some demanding change]
    O --> Q[Me., Jonathan & Jackson]
    P --> R[Clive & Adrian]
    S[Some don't see need for it] --> J
    T[Couldn't get discussion going] --> J
    U[Needed proper battle - not enough heat] --> J
    V["Don't confuse me with the facts" attitude] --> J

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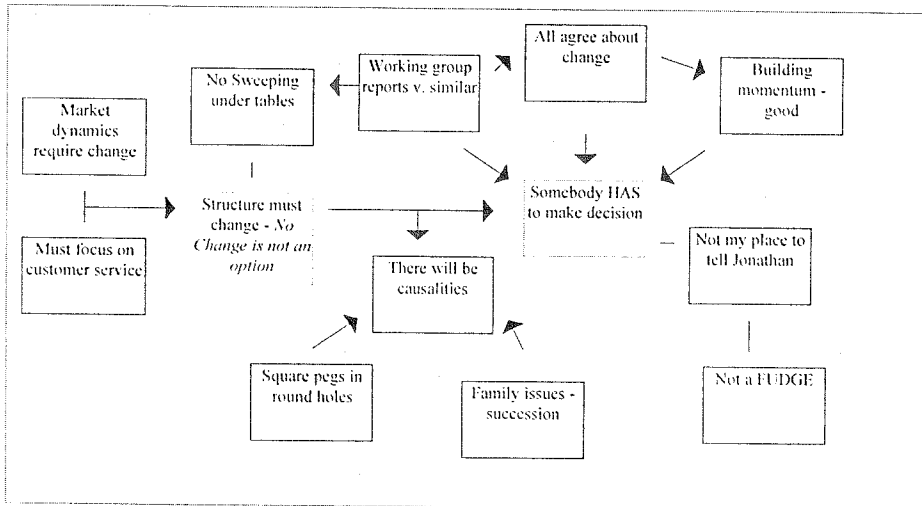
5.2: Colour Scheme's Maps.

Maps Collected Before the Board Meeting

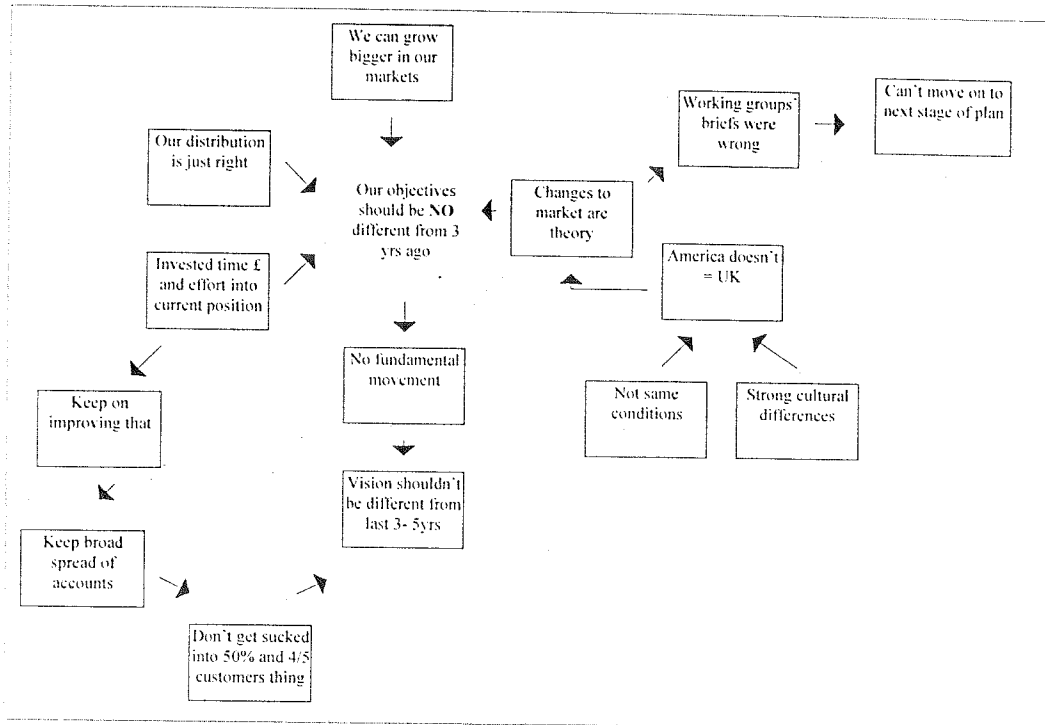
Jonathan Davies - CEO & Chairman



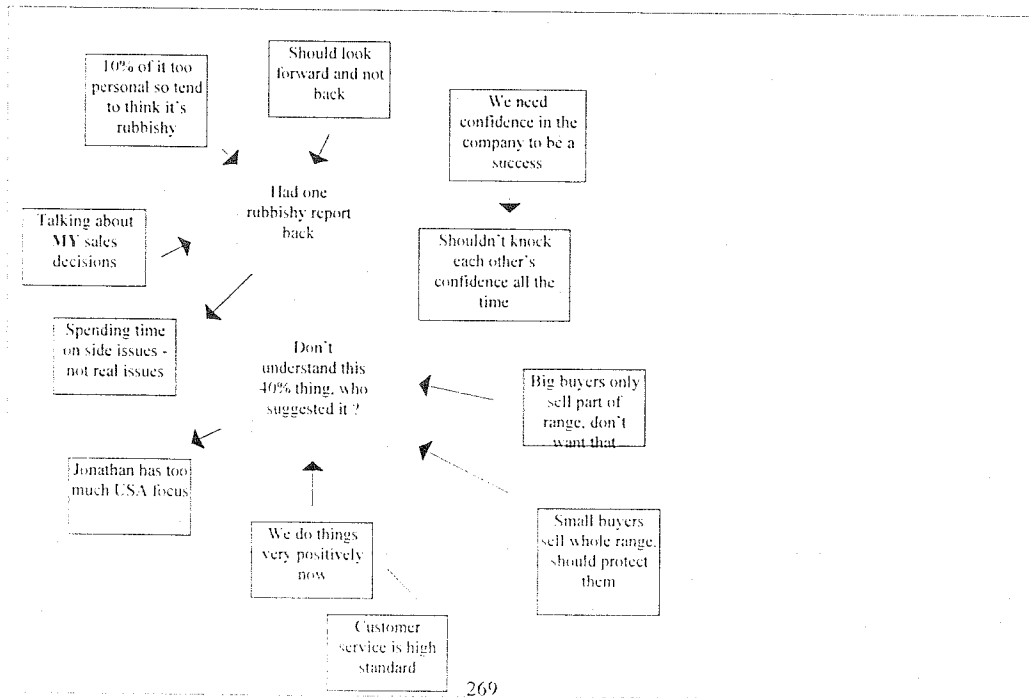
Jackson Smythe - European Director



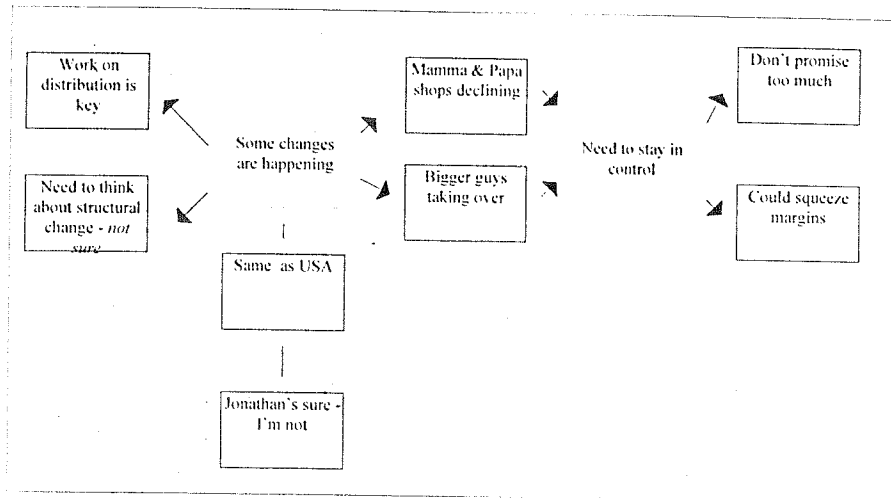
Adrian Fisher - UK Director



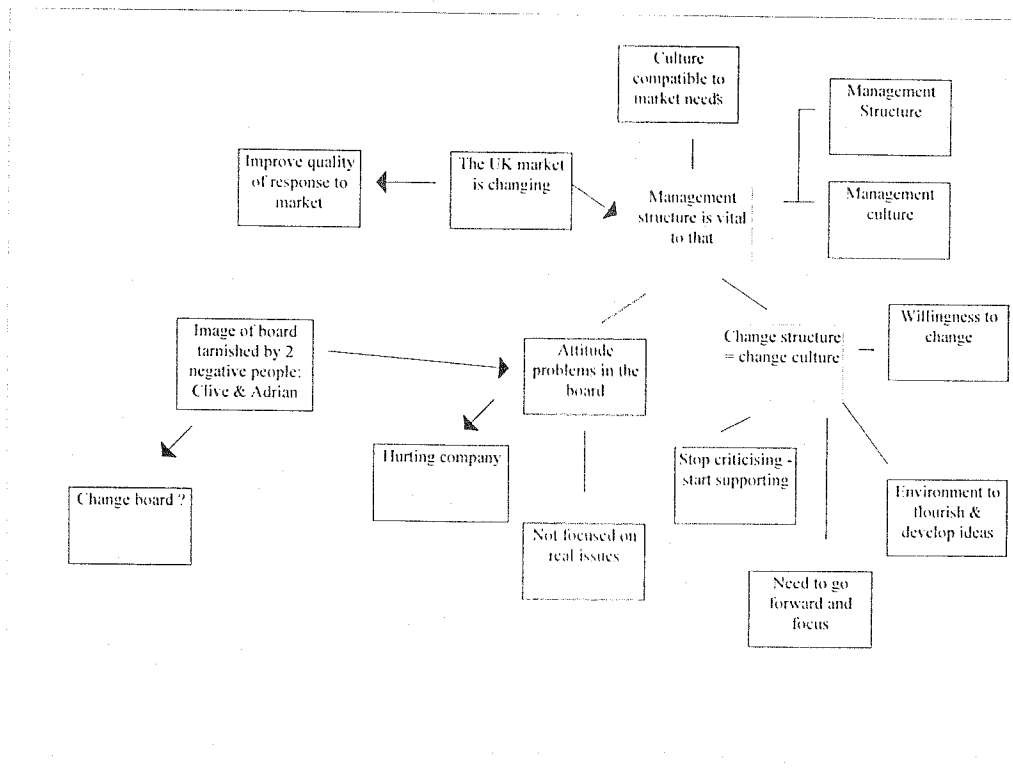
Clive Grantly - UK Sales Director



Robin Weeks - UK Manufacturing Director

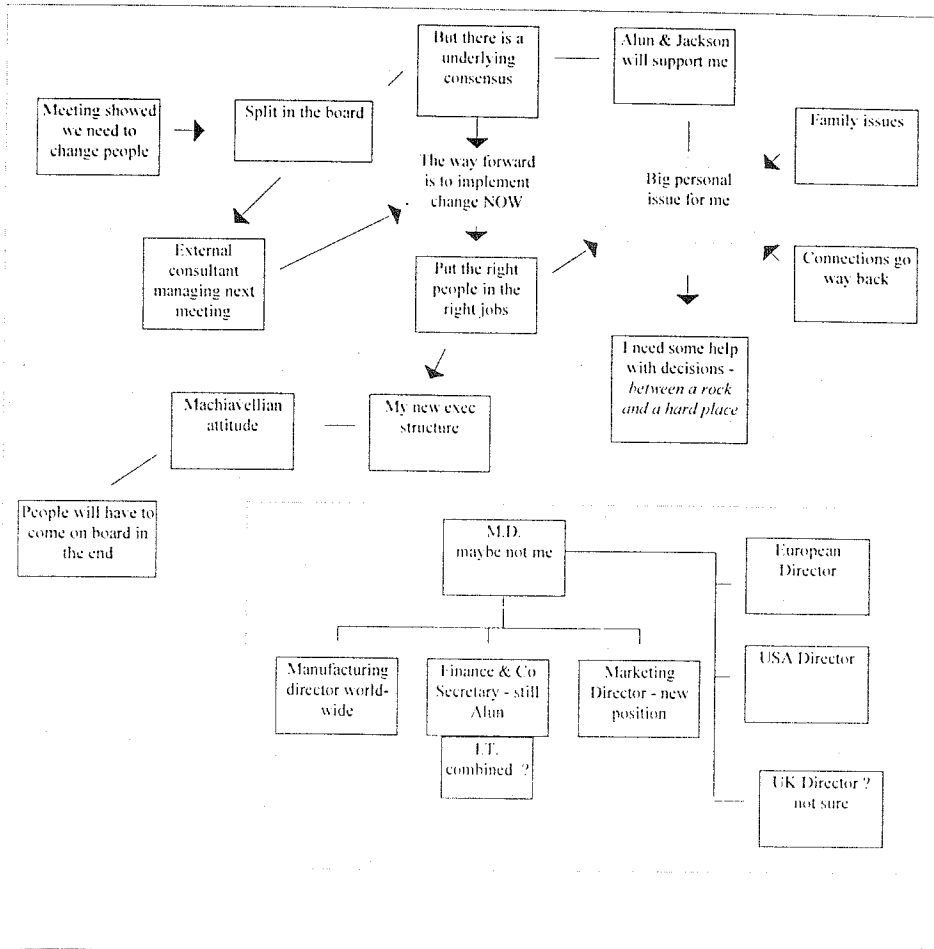


Alun Harris - Finance & I.T. Director

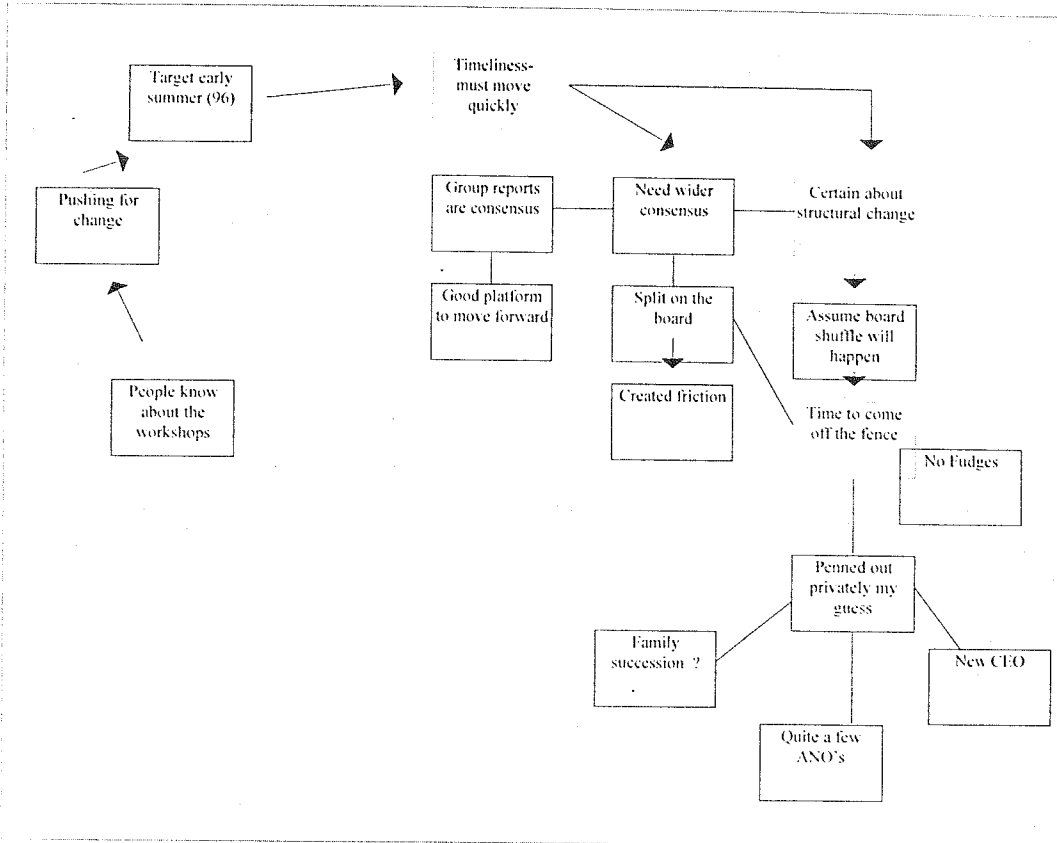


Maps Collected After the Board Meeting

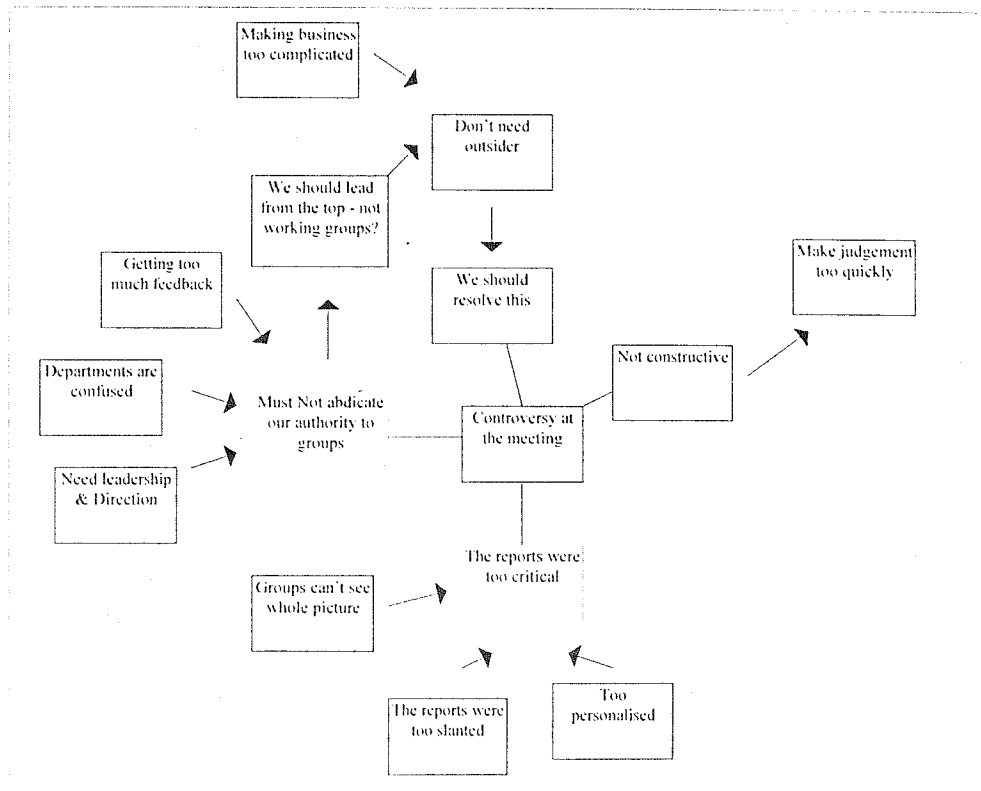
Jonathan Davies - CEO & Chairman



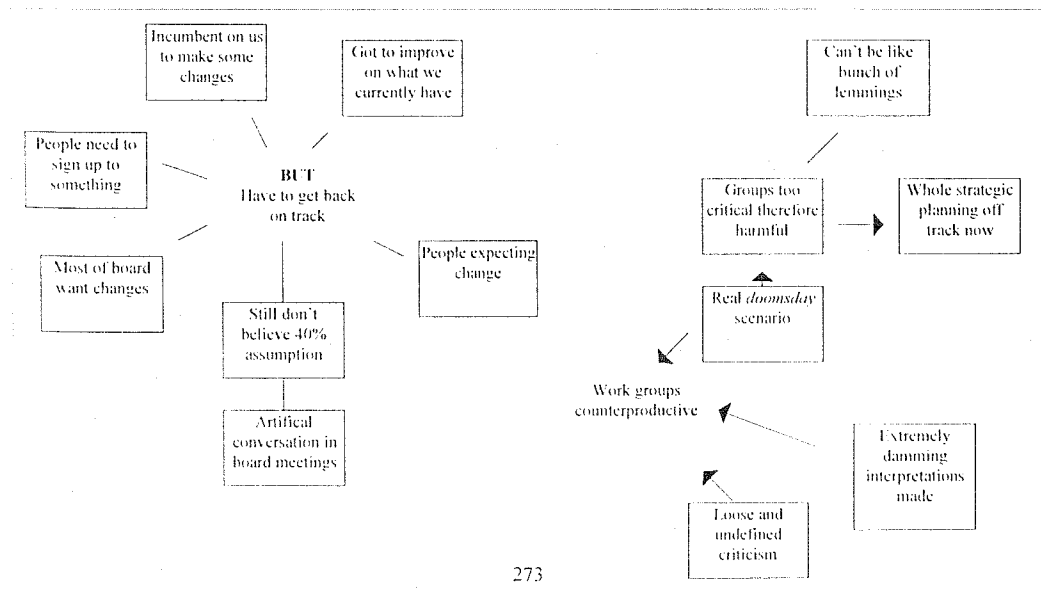
Jackson Smythe - European Director.



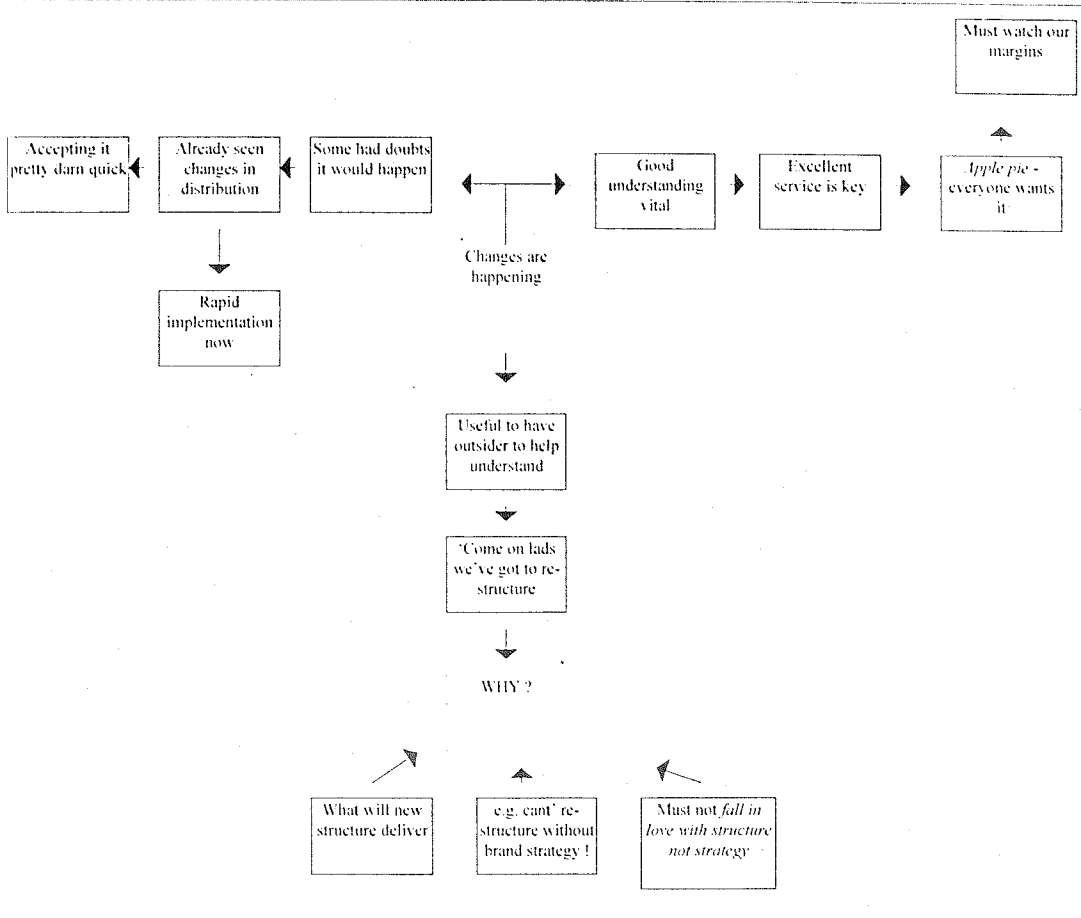
Clive Grantly - UK Sales Director.



Adrian Fisher - UK Director



Robin Weeks - UK Manufacturing Director.



APPENIDX SIX

Construction of Maps in Construct Chemicals

In this case, the VCST maps alone were judged to be not as adequate in reflecting the complexity and rich detail in directors' views of their program of change in their operations function, as the interview transcripts. That is, in some of the VCST maps, important themes that had been discussed during interview were missing from the maps. In particular this occurred when key themes had arisen in the latter part of an interview and the informant had already completed a mapping and to go back and ask them to re-map would have disrupted the flow of the discourse between interviewer and interviewee. To overcome this difficulty, the interview transcripts were used to construct a map of each directors' views in which key themes *not* present in the VCST were woven into a map that displayed the themes that informants were paying attention to at the time of interview and the associations between them. The basic VCST maps were used as important guides in this process. COPE was used to represent these newly constructed maps; i.e. basic additions to VCST maps.

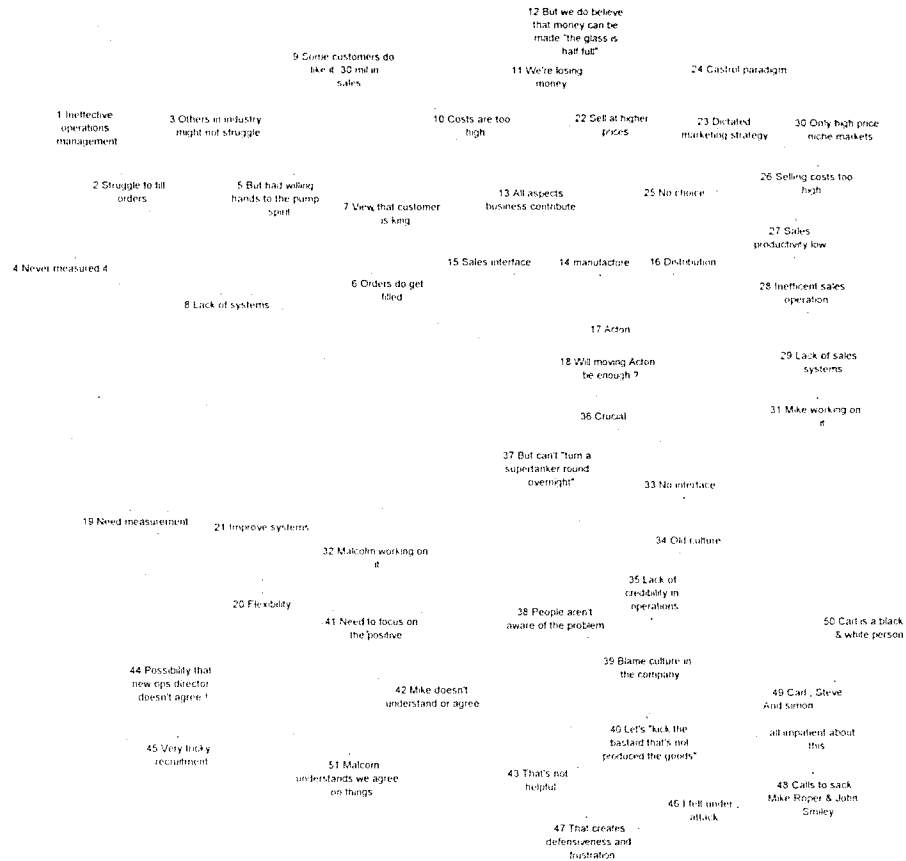
The COPE and original VCST maps were used to distil each directors' *key theme* at the time of each interview as well as making reference to the interview transcript itself. In the same way as the other two cases five characteristics were used to assess how representative a particular theme or construct was of their views at the time of interview. These were: (1) the centrality of each construct to the others in the map, how linked it was; (2) the primacy of recall; (3) repetition of the construct; (4) how the construct was expressed during interview, i.e. the emotion, enthusiasm, commitment, interest etc., used in the verbalisation of each construct. (5) if several constructs could all be collapsed under one heading and this was central to or dominant in the map, then this would be distilled as the informant's key theme. COPE's capability to run a domain analysis was used to assess the centrality of a construct (1).

It is important to note that, as discussed in chapter six, the full analytic capabilities of COPE were not able to be used in the retrospective construction of these maps. Consequently, the distillation of key informants' key themes was much more *interpretive* mostly drawing on characteristics 2, 3 & 4 above.

Each COPE map, plus a brief commentary showing the distillation of key themes appears in this appendix: 24 maps in total.

FEBRUARY INTERVIEWS

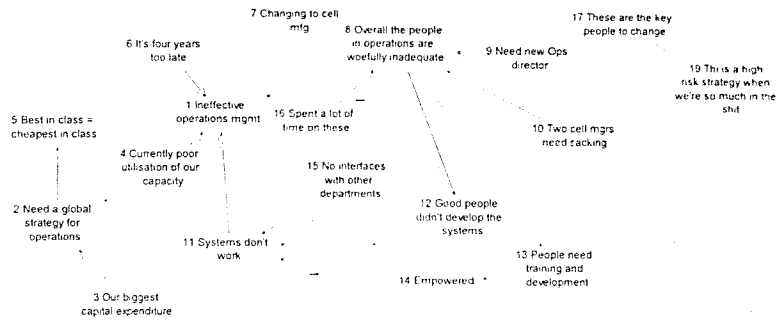
I. Aden Stanwick - MD



Interview and VCST Interpretation - This interview lasted two and half hours. The operations issue was discussed for half an hour. There appeared to be four important themes in Aden's first map: (1) lack of systems (2) costs too high (3) need measurement (4) blame culture in Operations. The first theme to emerge in his interview was concerned with the lack of systems and the associated need for measurement. As he discussed these, Aden presented a clearly thought through plan of action with connections easily made and construct being offered relatively rapidly. Note his VCST map was only focused on the systems & measurement themes. However, Aden became more animated when he discussed the blame culture in his team. He used emotive language like "lets kick the bastard that's not produced the goods". Nevertheless, the majority of the constructs that emerged, the VCST map, the primacy of recall and the amount of time in the interview pointed to systems and measurement as more appropriate key themes.

COPE interpretation - This map contained 51 constructs, more than any of Aden's other maps and indeed more than any other director. There were 51 nodes and 50 links indicating a low link to node ratio, consequently Aden's views at this time were not especially complex (i.e. a few nodes with many links). The domain analysis revealed that Lack of systems (8) was the most linked node.

2. Carl Kennedy - Technical Director

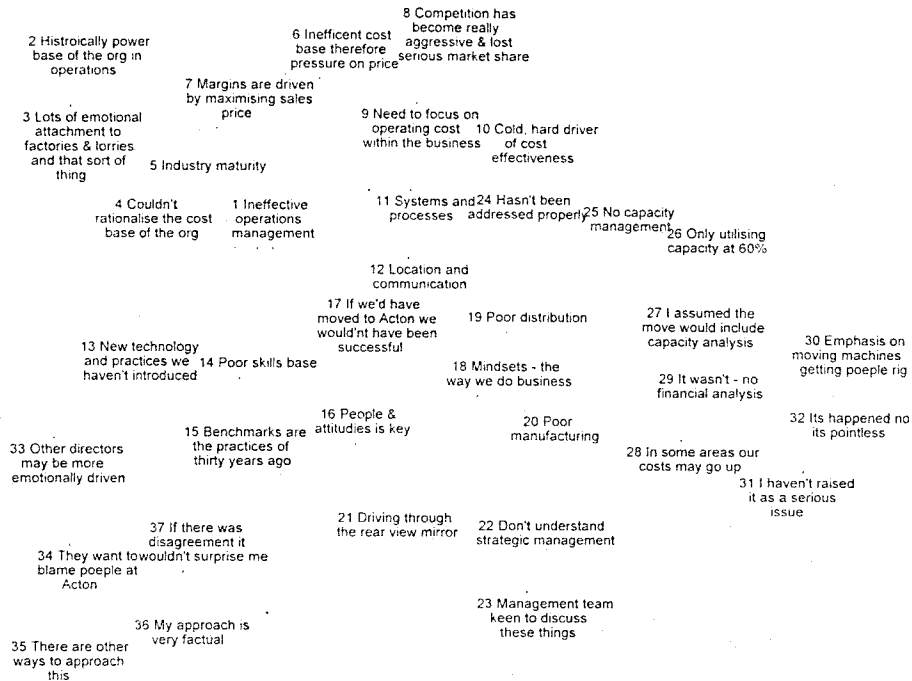


Interview and VCST Interpretation - This interview lasted one hour. The operations issue was discussed for 20 mins of this time. His discussion was somewhat limited by time. He had spent a long time on the background information and may have been a distracted by the time the discussion turned to operations. This interview was conducted in a hotel - not the ideal environment.

The themes that appeared to be especially central from the VCST and the interview transcript were (1) need to have global strategy for operations (2) people woefully inadequate (3) systems don't work properly. Carl talked at length about the lack of a global operations strategy in Construct Chemicals world-wide. Carl had worked all around the world for Construct Chemicals had strong views that took up the early part of the interview. When he focused on operations in the UK company discussed the inadequate systems and how the root cause of these was inadequate personnel in ops.

COPE interpretation - This map contained only 19 nodes and 16 links. The domain analysis revealed the two most highly linked nodes to be: people inadequate (8) and systems don't work (11). However as global strategy had primacy of recall and Carl spent the bulk of his time discussing it, it was included as a key theme.

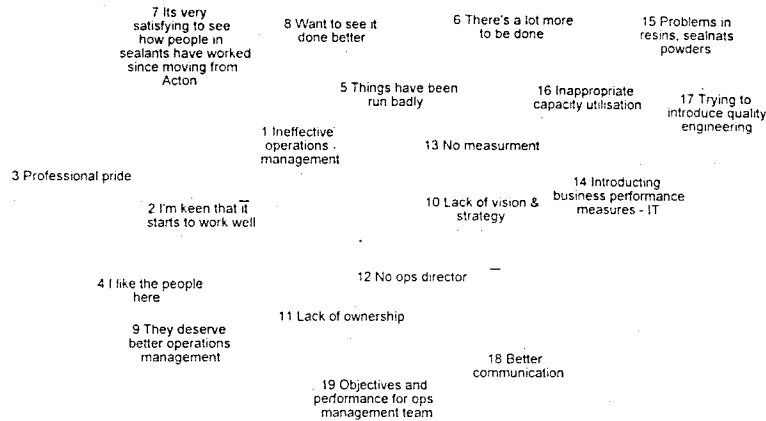
3. Mike Foster - Sales & Marketing Director.



Interview and VCST Interpretation - This interview lasted two hours, with the operations issue being discussed for over 30 mins. The first area Mike identified as important was the legacy of the operation's power based within Construct Chemicals. The second theme he went on to discuss was concerned with the centrality efficient operations had for their future success. During this discussion Mike betrayed his lack of faith in the analyses that Aden and Malcolm had carried out before beginning their program of change. He expressed his concern about the lack of strategic focus and awareness within the management team. It was when he discussing this last theme that Mike became the most animated- he seemed to feel somewhat thwarted and disappointed at this. The themes that were extracted as central were: (1) focusing on cost in operations (2) lack of strategic awareness of TMT re-capacity analysis. These best encapsulated Mike's views at the time of his February interview.

COPE interpretation - This map contained 37 nodes and 40 links. The domain analysis revealed that the most linked constructs were: mindsets (18) and driving through the rear view mirror (21). It was felt that both of these were reflective of the over all theme (2) extracted above; that is, concerned with Mike's view of the quality of the analysis Aden and Malcolm had carried out before implementing changes in operations linked to a lack of strategic awareness.

4. Malcolm Stanton - Consultant & Acting Operations Director



Interview and VCST Interpretation - This interview lasted forty five minutes. The two themes that were used to collapse Malcolm's interview and VCST map were (1) break down of his task i.e. explaining the job that he had to do (2) consultant talk i.e. positive platitudes about how committed he was to doing a good job. The discussion was much more uni dimensional than the other interviews; task focused. In his interpretation of the task of turning operations around ownership of the objectives of the change program and measurement of performance were central. He repeated these themes on several occasions and they were part of his VCST map.

COPE interpretation - This map contained only 19 nodes and 24 links. The domain analysis revealed that Malcolm's keenness to do a good job (I'm keen that it starts to work well (2)) was the most linked node. However this was judged to be part of Malcolm's process of establishing his position with me as the outside interviewer (spin) and less to do with his actual view about the program of change in operations - indeed this sort of *I want to do a good job* comment was not repeated in any of Malcolm's later interviews. Three further nodes emerged as well linked: lack of vision (10); no measurement (13); better communication. The node that was common to the interview & VCST and COPE interpretations was measurement. This was seen to be the key theme of Malcolm's view at this time.

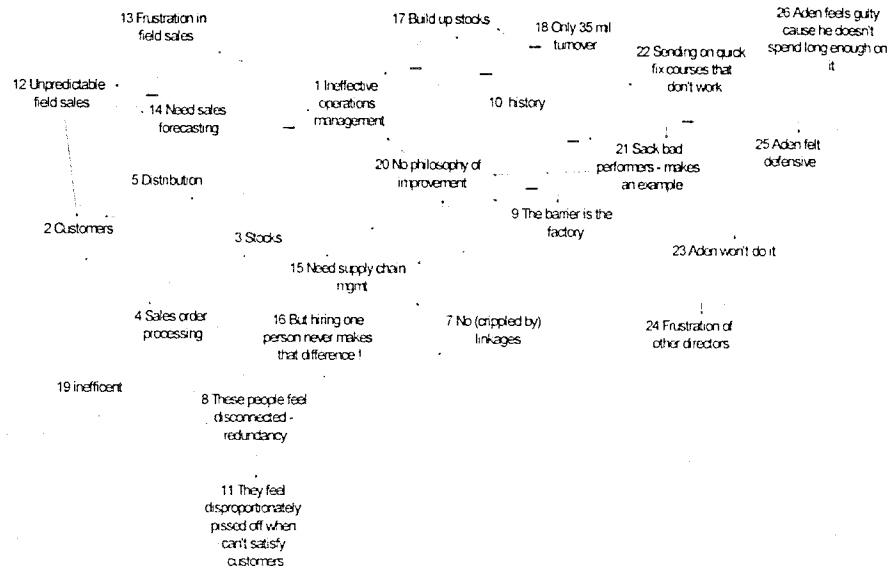
5. Simon Stephens - Finance Director



Interview and VCST Interpretation - This interview lasted two hours. The operations issue was discussed for 35 mins of this time. The first thing to note is the negative approach that Simon took to the operations issue. In his interview Simon mentioned Mick Rawlins (manufacturing manager) on 5 separate occasions. He repeated stressed how this person needed to be replaced with an interim manager as Aden wasn't able to cope alone. Comments about Aden's behaviour also recurred throughout the interview; his disagreement, his defensiveness, his ability to cope.

COPE interpretation - This map contained 23 nodes and 22 links. Ironically, the most connected of the nodes extracted from Simon's interview was *We haven't got a can do attitude (11)*; ironic as 21 of the nodes were negative ! Irrespective of this node being the most connected, the most repeated message in Simon's map was a negative view of the personnel in operations and, as shown above, this extended to Aden.

6. Steve Williams - HR Director



Interview and VCST Interpretation - This interview lasted only forty five minutes and was characteristic of all the sessions with Steve, always very brief with limited details offered even when carefully pushed. He was by far the hardest informant to deal with; very guarded. The operations issue was discussed for only 15 the forty five minute interview. Steve offered a varied interpretation of the operations issue. That is, he discussion ranged from distribution, to sales, to supply chain management. However the themes that kept recurring were (1) negative interpretation of Aden's ability as acting operations director (2) people issues (sack bad performers, can just send people on quick fix courses, people don't feel connected). It was in the latter stages of the interview as Steve opened up a little more that he shared his views about the people issues in operations and moreover his interpretation of Aden pointing out on the VCST map he had produced where these issues were having an impact.

COPE interpretation - This map contained 25 nodes and 32 links. In terms of the domain analysis, three nodes had four links around them and were the most connected. These were: Construct Chemicals' History (10) Building up stocks (17) and No philosophy of improvement (20). Although each of these were highly linked, none matched the extent to which the overarching themes of Aden's behaviour and people issues the were implicitly at the heart of many of the topics Steve discussed in his first interview.

MARCH INTERVIEWS

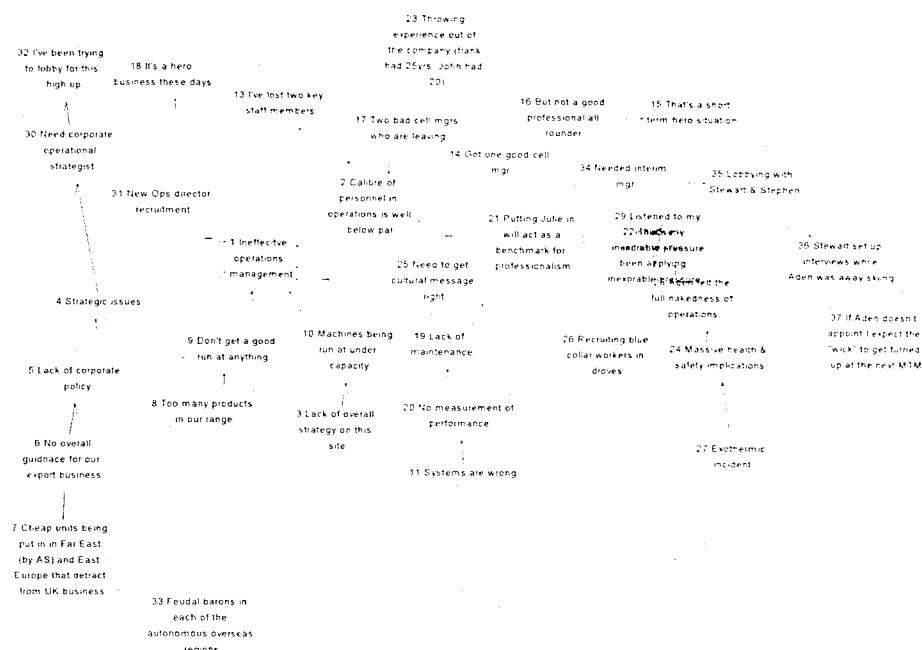
7. Aden Stanwick - MD & Acting Operations Director



Interview and VCST Interpretation - This interview lasted only 30 mins and was the shortest of Aden's interviews. He was called away to a meeting and had to cut our time together short. The operations issue was discussed for 20 mins of this time. His discussion was consequently somewhat limited by the time he had available. But also, as I had already interviewed him once, Aden may have felt he didn't need to go into as much background detail about the history of the problem in operations. The interpretation of the interview transcript and Aden's VCST revealed that there were four of the nodes shown above that were particularly representative of Aden's views expressed during interview. These were as follows: personally I've been feeling the pressure; I've been acting suboptimally as CEO; 97% shared delivery on time objective; focusing on people (measurement) improves their performance. These could be collapsed into two key themes, recurring throughout the interview. Recall at this time there had been an accident at the plant for which Aden would have been ultimately responsible.. The accident had in fact made the problems in operations reality as opposed to theory and during this interview Aden appeared to be extremely vulnerable and lacking in confidence in his own ability as a consequence.

COPE interpretation - This map contained only 28 and 27 links. The most connected of the nodes was number 18 where Aden described how he'd been feeling under pressure. This node had 8 others around it. Combining this result with the others above produced two overarching key themes: feeling under pressure and measurement to improve performance.

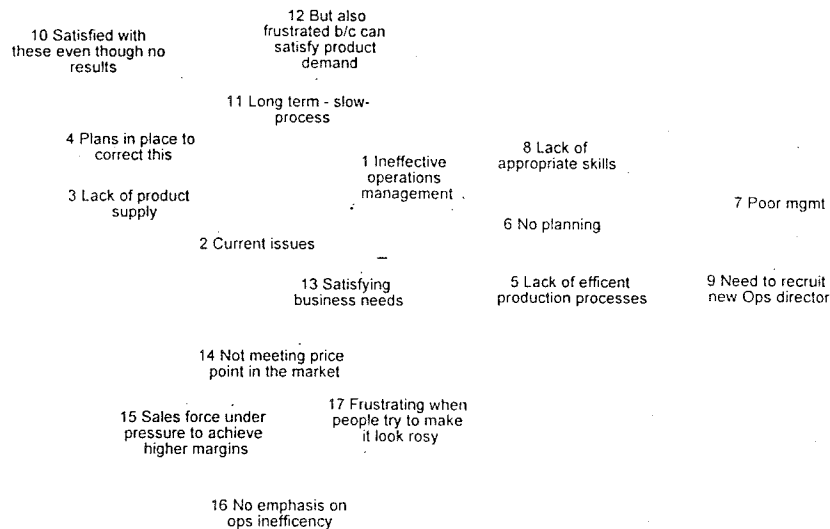
8. Carl Kennedy - Technical Director



Interview and VCST Interpretation - This interview lasted one hour and the operations issues was discussed for some 40 mins. Three themes recurred throughout Carl's interview and also were placed centrally in his VCST map. There were (1) calibre of operations staff (2) strategic issues (3) Been applying inexorable pressure. Theme (2) was something of a repeat from his first map where he discussed his view that the corporate level of Construct Chemicals UK ought to be providing more business for the UK company. However in this interview he then went on to share his view that the calibre of staff in ops was in fact the root cause of much of their difficulties. This was central in the VCST he constructed and he spent time in his interview showing how connected it was to other problems in operations. A final theme was concerned with his own personal resolve to take action to help work these difficulties out. The accident at the plant probably prompted this focus. He spent the longest period of the interview discussing the actions he wished to take and became the most animated during this discussion.

COPE interpretation - This Carl's second interview showed a marked increase in the number of nodes (19 to 36, 52% increase). This did not follow the trend to give less information in the second interview as the basics had been described in the first interview, that had been established in the other informants' maps. There were three possible reasons for this. The first that Carl's first interview had been conducted in a hotel and was somewhat rushed. The second reason may have been the result of the accident at the plant that which Carl was jointly accountable for, may have heightened his awareness and interest in operations. Third, Carl had just moved to be based at Lichfield and was in and around the factory everyday seeing problems for himself; theory becoming reality. The domain analysis of this map revealed the same key themes as those already listed above.

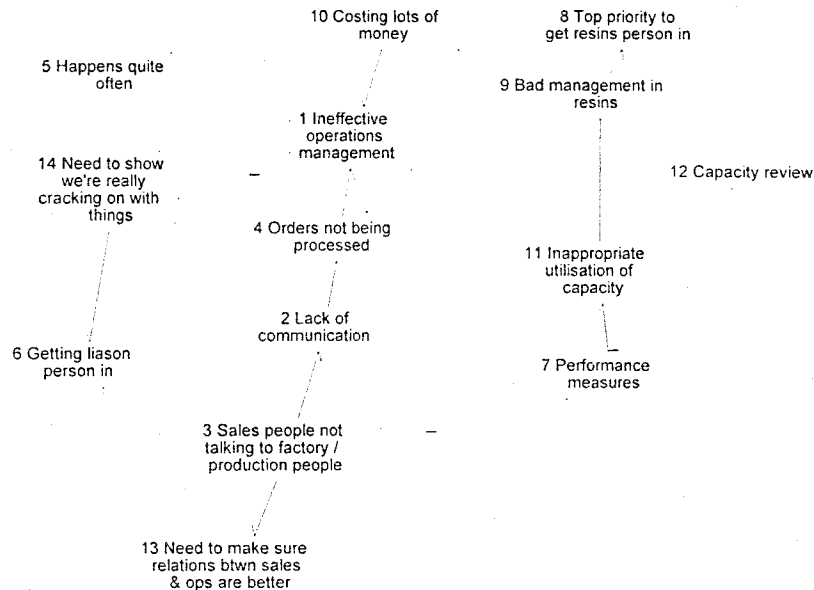
9. Mike Foster - Sales & Marketing Director.



Interview and VCST Interpretation - This interview was forty minutes with the operations issue being discussed for 20 minutes of that time. The key themes in Mike's views about the change program in operations had become less obvious than they had been during his first interview. Mike discussed several topics without going into a great deal of detail about any of them or recognising connections between them. Three themes, mostly based on his own VCST map were extracted. (1) frustration at lack of emphasis on operations inefficiency (2) people skills (3) and a long term - short term paradox. That is he was aware of the long term program of change in operations and was supportive of it but in the short term he wanted to see more rapid improvement to resolve the product supply problems his sales team had to face on a daily basis. It was during the discussion of this last theme that Mike became quite emotional expressing his own distress, he adopted a more critical tone of voice used the word frustrated on several occasions and appeared to be working under a significant amount of pressure at the time of this interview.

COPE interpretation - This map contained only 17 nodes and 15 links and marked a considerable reduction in the number of distinct nodes that could be extracted from Mike's interview. In fact as stated above, Mike moved around from topic to topic without a great deal of discussion of the connections between them. Consequently the domain analysis revealed that no node had more than two connections and there were several of these. Instead the key themes shown above were used. Especially Mike's sense of frustration prompted the paradoxical short term long term pressures on him at that point in time.

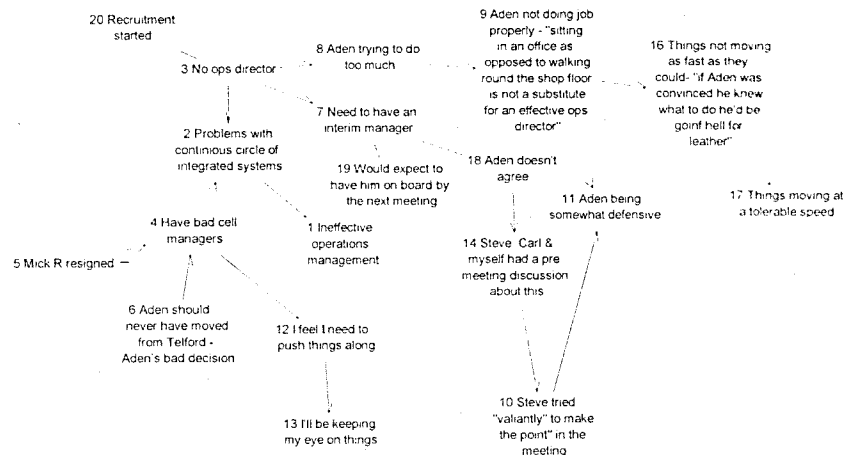
10. Malcolm Stanton - Consultant & Acting Operations Director.



Interview and VCST Interpretation - This interview only lasted 30 minutes and Malcolm spent just 10 minutes discussing the operations issue, consequently the number of issues Malcolm discussed was extremely limited. As in his first interview, Malcolm seemed to be exclusively task focused at this time. He spent his time running through a break down of the progress of his and Aden's plans. This general theme encompassed the whole map and the domain analysis was more revealing in breaking out the most important aspects of Malcolm's thoughts at this time

COPE interpretation - There were 14 nodes and 18 links in this map. The domain analysis revealed that inappropriate utilisation of capacity was the most connected node with 4 others around it. There were two further nodes that had three others around them and these too were considered to be relatively important: sales not talking to factory (i.e. communication); performance measures.

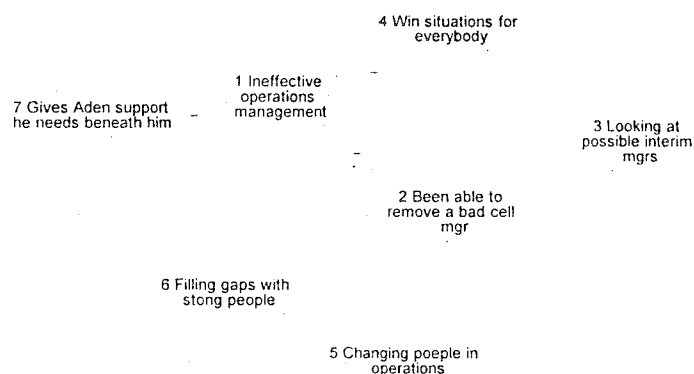
11. Simon Stephens - Finance Director



Interview and VCST Interpretation - This interview lasted one hour and was similar in content to Simon's first interview; (1) his concerns with Aden's ability to run operations effectively (2) the need to appoint an interim manager. Simon mentioned Aden on 6 separate occasions and in a more critical fashion than had previously been the case, e.g. not doing his job properly he also referred to the appointment of an interim manager on four separate occasions. The lack of an operations directors would seem to be at the root of both of these concerns but he doesn't discuss speeding up the appointment of an ops director or increasing Malcolm's responsibilities in the mean time.

COPE interpretation - This map contained 20 nodes and 19 links. The domain analysis revealed that there were three central nodes: (2) continuous circle of integrated systems, (3) no ops director (9) Aden not doing his job properly. The last two emerged as important from the VCST and interview analysis. Although (2) was the first issue to be discussed, Simon moved away from it quickly and did not repeat it again, whereas as the discussion progressed he opened up more and began to be more focused on Aden and his behaviour. Consequently node (2) was not accepted as a key theme.

12. Steve Williams - HR Director

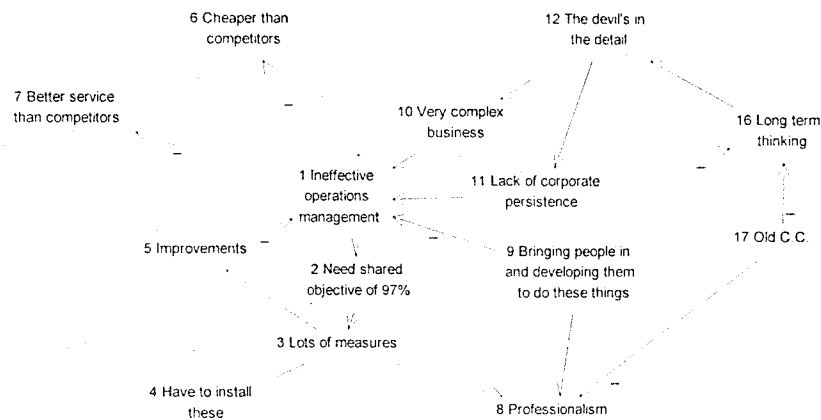


Interview and VCST Interpretation - This was a typically brief interview with Steve, less than half an hour and as became something of a routine, the allotted hour was cut short by an important meeting Steve had to attend. Steve spent less than ten minutes discussing operations. There was only one theme apparent in Steve's discussions at this time. This was the people issues in operations. As the HR director this was perhaps to be expected. Steve was only animated when he discussed the possible appointment on an interim manager and displayed a keenness to encourage this recruitment process.

COPE interpretation - This map contained just 7 nodes and links. Changing people in operations had three others around it and was considered to be a key theme at this time.

APRIL INTERVIEWS

13. Aden Stanwick - MD

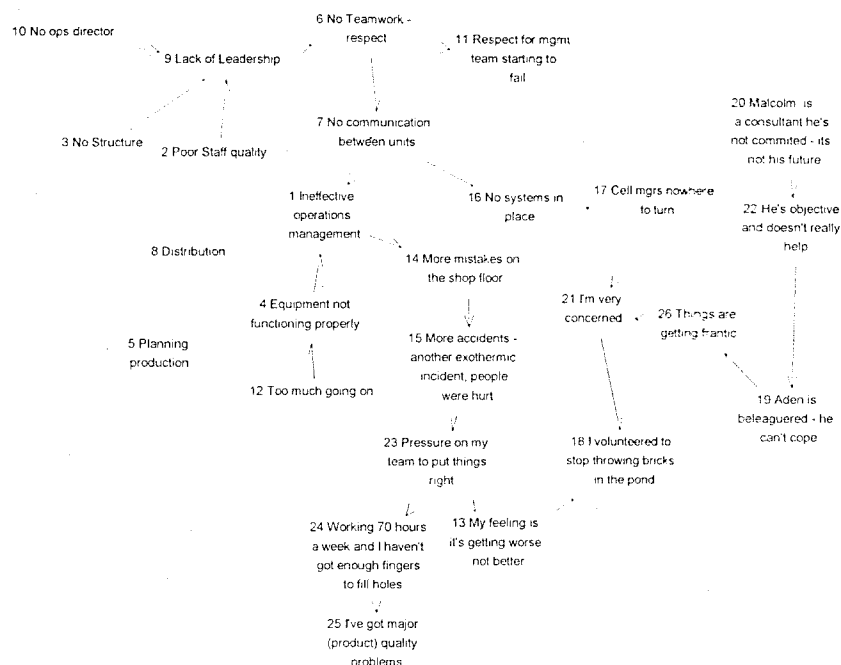


Interview and VCST Interpretation - This interview lasted one hour. The operations issue was discussed for half of the time. The number of distinct topics discussed was much reduced, this may have been because Aden felt he did not need to discuss as broad a coverage of issues and just shared those that were important to him; i.e. he anticipated I was becoming more familiar with the issue. Alternatively, Aden's view of the operations issue may have been gradually becoming less complex as he was becoming more focused and had less time to spend on it.

There were two clear themes that emerged from the interview transcript and VCST analyses. These were: (1) need for measurement (2) lack of corporate persistence. The first theme was familiar and gain repeated on several occasions, was the first to be recalled and placed at the centre of his VCST map. However a new theme was Aden's discussion of the his frustration with his TMT in being too impatient, too critical and generally un-supportive. Although this appeared last on Aden's VCST map, he spent the longest section of his interview sharing his sense of disappointment. In the fieldwork journal at his time a comment was made about Aden seeming deflated at this time, lacking in energy.

COPE interpretation - This map contained 17 nodes and 11 links. Five nodes had three others around them. In chronological order these were: measurement; improving professionalism, lack of persistence; devils in the detail; long term thinking. The last four of these fell under the general theme of disappointment with the TMT and so concurred with the themes above.

14. Carl Kennedy - Technical Director

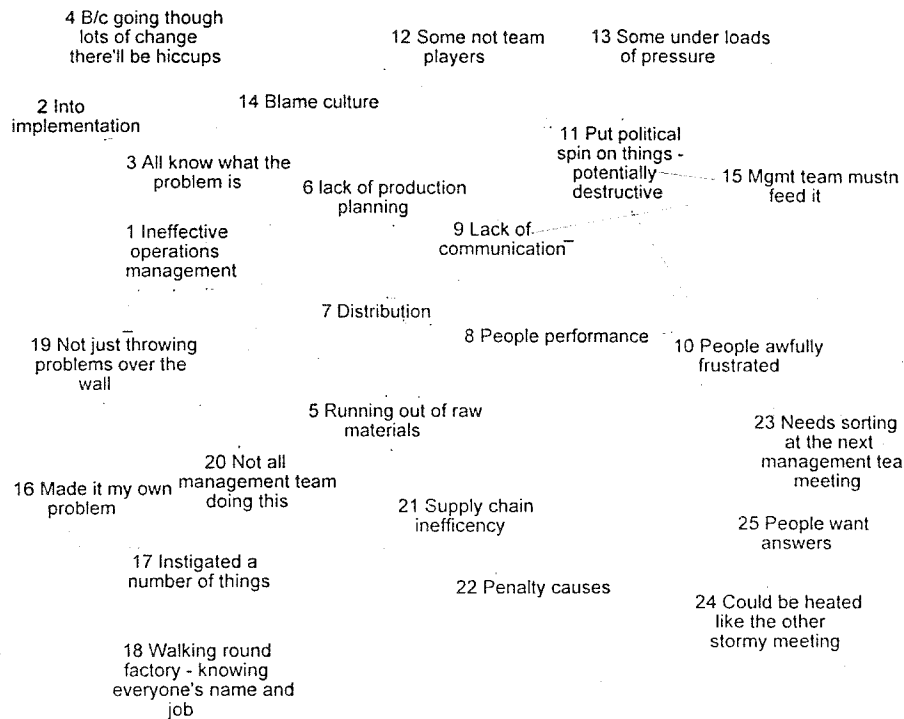


Interview and VCST Interpretation - This interview lasted one hour and was very emotional. Carl shared the extent to which he felt stressed at that point in time; e.g. weeping at his desk. He continually repeated that a lack of leadership in operations was presenting difficulties and resulting from this was his own keenness to offer assistance. He went into detail about how he had and would continue to help. The idea that he had *stopped throwing bricks into the pond* seemed especially important to Carl. He circled it on his VCST map marking it as a significant turn around in his attitude.

The language that Carl used in interview betrayed his anxious state: mistakes, accidents, concern, frantic, beleaguered, pressure 70 our week, getting worse, too much going on, nowhere to turn.

COPE interpretation - This map contained 26 nodes and 21 links. In line with the analysis above, the most connected node emerged as the lack of leadership which he believed to be at the root cause of the problems in operations. This had four other nodes around it.

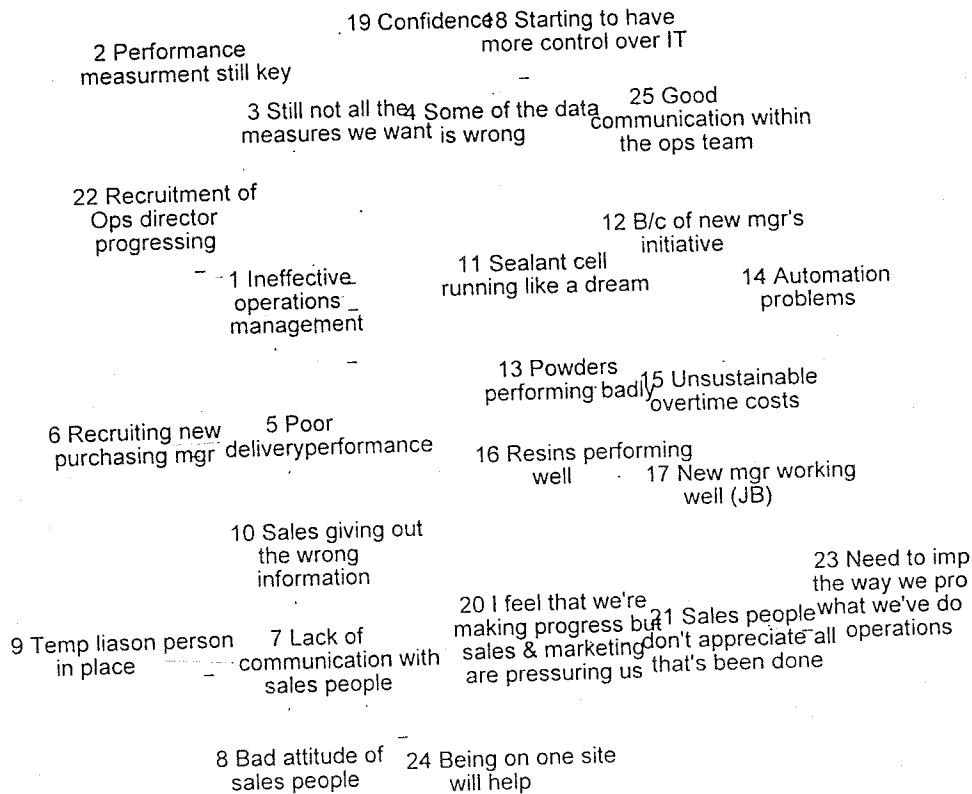
15. Mike Foster - Sales & marketing Director



Interview and VCST Interpretation - This interview lasted one hour and as with Carl showed a marked increase in the pressure at this time. The interpretative analysis of the interview transcript revealed three clear families of themes at this time. (1) breakdown of a supportive culture (2) choosing to make a positive contribution (3) specific *substantive* issues e.g. raw materials, distribution. The views he shared at this time had become much more emotionally driven. He commented that the past week had been "the worst week of his career" that "customers were walking out of the door in droves". He was 20 minutes late for his interview, he'd lost a contact lens and was not shaven; for Mike (ex military and usually precise) this was most unusual.

COPE interpretation - This map contained 25 nodes and 31 links. The three families of themes shown above were also represented in the domain analysis where the three most highly connected nodes were: Lack of communication (with 5 other nodes around it), running out of raw materials and people awfully frustrated (both with 4 other nodes round them).

16. Malcolm Stanton - Consultant & Acting Operations Director



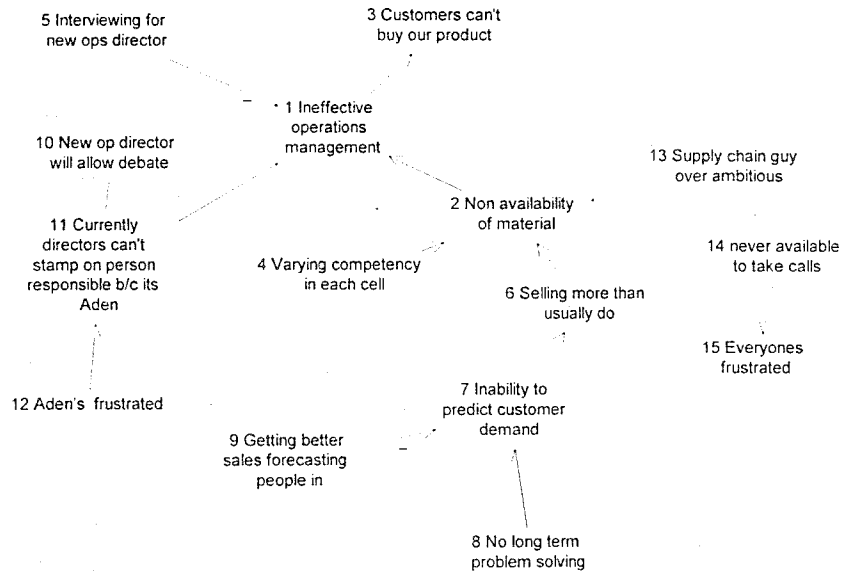
Interview and VCST Interpretation - This interview was 45 minutes long with the operations issue being discussed for 25 minutes. In terms of primacy of recall, the measurement issue was still a key theme for Malcolm. It was the first thing he recalled and the first VCST card he wrote and placed at the centre of his map. He then went on to run through the progress that was being made in each cell. This too was a consistent theme. Later in the interview, Malcolm began discussing relationships for the first time. He was specifically focused on the lack of understanding of their progress in the sales team and how the lack of communication between sales and operations was resulting in considerable pressure.

COPE interpretation - There were 24 nodes and 25 links in this map. The domain analysis revealed that the most connected node was concerned with this lack of communication with the sales team and the general lack of understanding between the two groups. This node had five others around it.

4 I've been more involved in aspects of the business	5 Shortlisting candidates for ops directorship	10 Time has gone on and the people issues are not top priority	13 Been on holiday for 2 weeks - missed a lot, can't comment now
3 I see that functional specialisms all overlap in areas of collective responsibility	—	7 Not worth putting the effort in now as its not that important anymore	14 I'm not unhappy with the way things are
2 I try to work towards integrated business solutions	1 Ineffective operations management	6 But interim mgr is not taking place	15 There is no one issue that needs more than the passage of time to go by
	11 Lack of info	12 Info is now the top priority	
	—		
	8 Starting to resolve the info problem		
	9 IT has improved		

COPE interpretation - This map contained only 15 nodes and 14 links. The key theme of getting information was reflected by the domain analysis which highlighted the lack of information as the most connected node in this basic map with 3 others around it.

18. Steve Williams - HR Director

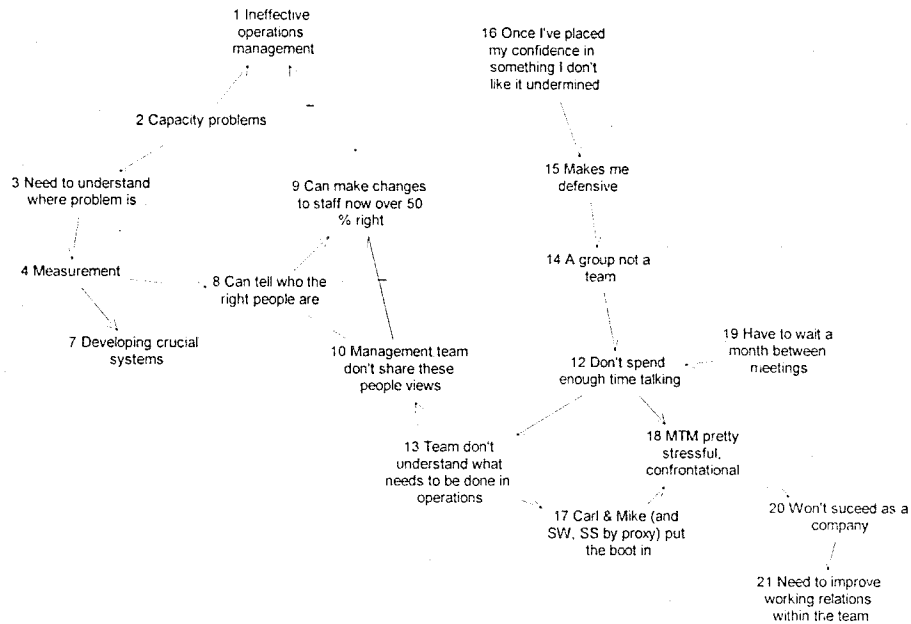


Interview and VCST Interpretation - Again this interview was extremely brief and lasted only 20 minutes. Operations was only discussed for ten of these. He found it very difficult to carry out any VCST mapping at all and frequently used vague terms such as "I'm not sure why I'm saying this but it might be that" and "I don't know why but I'm feeling that" I got the impression that Steve was not at all sure about what had been happening in operations. When he finally did produce a VCST map it was a list of the managers he did and did not approve of in operations. This would have given the impression that this was the only aspect to his view at that time. However, he went on to talk about problems that inadequate supply chain management were causing, focusing on inability to predict customer demand and there not being enough raw material to make product when it was ordered. However, this was linked back into his views about the supply chain manager John Smith - so in fact people issues did really still dominate.

COPE interpretation - This map contained 15 nodes and 14 links. Two themes emerged from the domain analysis as more connected than any others. These were: can't predict customer demand; not enough raw material, with 3 and 4 other nodes around them respectively. These were carried forward as key themes along with the people issues as discussed above.

MAY INTERVIEWS

19. Aden Stanwick - MD & Acting Operations Director



Interview and VCST Interpretation - At this time there appeared to be two key themes that emerged from Aden's interview and VCST map. These were (1) measurement and how this had a strong connections to improving systems and changing people. This was interesting in two respects, first in terms of the consistency of this theme across all of Aden's interviews and second because of the appearance of a recognition in Aden's VCST map of the need to change personnel in operations. This was the first time he had paid serious attention to this possibility in his interviews. As had become the pattern these issues were discussed early in his interview. (2) He then went on to discuss the his general disappointment with his management team. He did this more openly than he had in his previous interview. He spent much longer discussing the issues in his management team than he did about resolving the specific difficulties in operations. At this time the relationship in his TMT was clearly the key issue for him.

COPE interpretation - This map contained 18 nodes and 15 links, the most connected nodes were TMT don't spend enough time talking (with 4 others around it) and measurement (with 3 others around it). These nodes both reflected the two key themes distilled in interpretive fashion from the VCST and interview transcript.

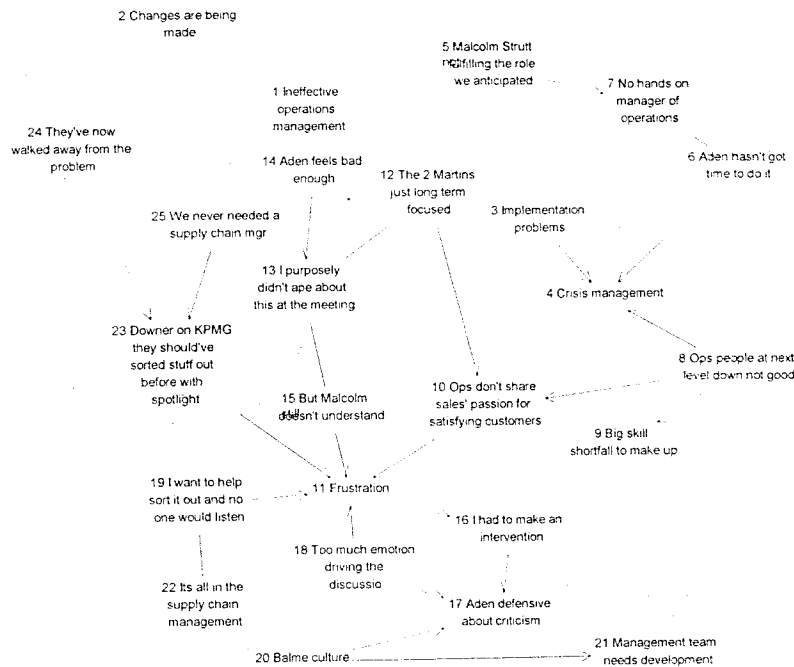
20. Carl Kennedy - Technical Director



Interview and VCST Interpretation - Carl's tone and themes had changed somewhat since April. In this interview the supportive and anxious sentiment expressed during April had been replaced by impatient criticism and a more aggressive tone. Three overall themes that were extracted from Carl's VCST map and interview at this time were (1) interface problems with supply chain having knock on effects across operations and sales, (2) his own difficult predicament with most of his staff in operations (note he was complaining about this as opposed to volunteering as he had in the past) (3) criticism of Aden and Malcolm. It was the last two topics that Carl focused on more although he did not commit his critical comments about Aden and Malcolm to paper in his VCST map.

COPE interpretation - This map contained 28 nodes and 30 links. Two nodes emerged as central from the domain analysis. These were: Problems with supply chain interfaces and most of my staff have gone to operations. Both had four other nodes around them. The general theme of criticism of Aden and Malcolm was not picked up via links but rather in the analysis above in terms of repetition.

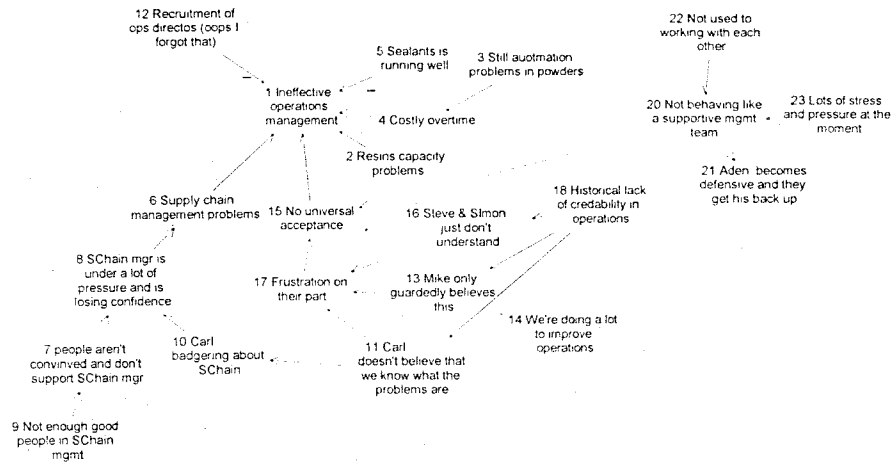
21. Mike Foster - Sales & Marketing Director



Interview and VCST Interpretation - This interview lasted an hour during which time, Mike introduced some new themes used a tone in which his impatience and disappointment were apparent. Three new families of constructs were found in this May interview. These were in order of primacy (1) disappointment with the **** consultancy and Malcolm Stanton's intervention (2) the breakdown in communication in the TMT (3) spotlight on supply chain management as the major problem in operations. Over and above the issue of primacy, theme (2); breakdown in TMT, was the issue that Mike spent the longest period of his interview discussing. He expressed great concern that the team and in particular relations with Aden had become critical and this was a great source of frustration for him.

COPE interpretation - The domain analysis revealed that this map which had 25 nodes and 24 links, was dominated by node (11) frustration which had six others around it. This concurred with the more interpretive analysis above.

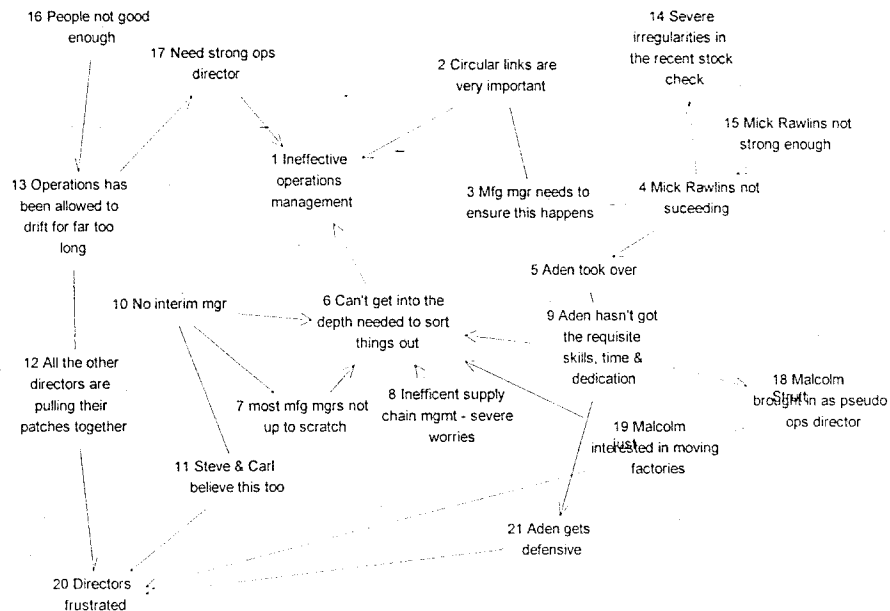
22. Malcolm Stanton - Consultant & Acting Operations Director



Interview and VCST Interpretation - This final interview with Malcolm lasted forty five minutes with the operations issue discussed for twenty minutes. Malcolm's last interview presented 2 families of constructs, one of which had not been focused on by Malcolm before. In terms of primacy of recall, i.e. the most familiar thing to Malcolm, the run down of progress in each cell, was Malcolm's initial focus. This was the familiar theme present in all of his interviews. He then went on to spend the bulk of the 20 minute discussion sharing his views about relations within the TMT and other directors' attitudes to his and Aden's own performance as acting ops directors. During this discussion, Malcolm was the most emotionally engaged that he had been throughout the four months of interviews. The basic source of his agitation being that the other directors seemed not to believe that he and Aden had been making every effort to turn operations around.

COPE interpretation - This map contained 23 nodes and 24 links and in line with the interpretive analysis above, the most highly connected nodes were associated with the attitude of the other directors: frustration of the other directors (17) and not behaving like a supportive management team (20)

23. Simon Stephens - Finance Director

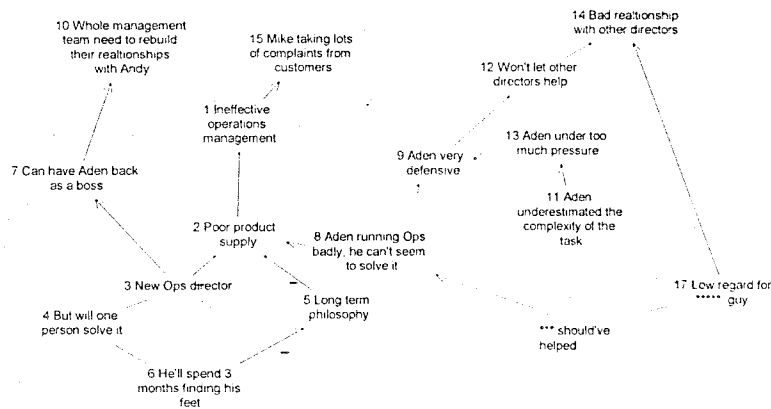


Interview and VCST Interpretation - This Simon's final interview, only lasted 30 minutes with just 10 of these spent discussing the operations issue; Simon had to travel to another meeting and was genuinely concerned that he had to cut the interview short.

In this last interview the majority of Simon's comments were negative (15 of the 21 nodes) interpretations of the change program in operations. The overall theme that could account for almost all of the nodes in his COPE map and all the cards he placed in his VCST map were concerned with *people issues*. He was especially concerned with Aden & Malcolm's performances as well as that of the supply chain manager John Smith. In Simon's view at this time, it was Aden's behaviour in particular that was contributing to his and the other directors' frustration.

COPE interpretation - This map contained 21 nodes and 26 links and the most connected node was shown to be (20) directors frustrated. This reflected Simon's view of the outcome of the inappropriate people management in operations. However the interpretive analysis would suggest that the heart of Simon's view of the operations issue at this time was dissatisfaction with Aden in particular.

24. Steve Williams - HR Director.



Interview and VCST Interpretation - This was the longest interview that Steve offered throughout the four month interviewing process. He was a great deal more expressive in this interview than he had been on previous occasions. The key theme that Steve continually repeated at this time was Aden's culpability in the poor performance of the operations function. He became angry and swore when discussing Malcolm and his responsibility in the management of operations. However, it was Aden's behaviour that he kept returning to and it was this which was extracted as his key theme.

COPE interpretation - This map was made up of 17 nodes and 19 links and in line with the interpretive analysis above, two of the three highly connected themes in Steve's map were concerned with Aden: (8) and (9). However the most connected node was (2) poor product supply. This topic was shared early in the discussion before Steve became agitated and it is maintained that the more revelatory comments Steve made later in the interview offer a better reflection of his view at that time.