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THE LEADERSHIP AND WORKGROUP REQUIREMENTS THAT ORGANIZATIONS NEED TO IGNITE AND FAN THE FLAMES OF INNOVATION

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

List of Publications Arising from Thesis Research

Book chapters

Wilson-Evered, E., Dall, P. J and Neale, M. (2001). The influence of leadership on innovation at work. *Leadership in the Antipodes: Findings, Implications and a Leader Profile.* K. Parry. Wellington, NZ, Victoria University Institute of Policy Studies.

Wilson-Evered, E., Härtel, C. E. J. and Neale, M. (2001). A longitudinal study of work group innovation: The importance of transformational leadership and morale. *Advances in Health Care Management.* M. D. Fotler, G. T. Savage, J. D. Blair and G. T. Payne. Oxford, JAI Elsevier Science, 2, 315-340.

Wilson-Evered, E. and Härtel, C. E. J. (2001). *How can managers increase support for new ideas? A longitudinal investigation.* 61st Meeting of the Academy of Management. "Do Governments Matter?", Washington DC, Academy of Management.

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Griffin, M. A., Hart, P. M. and Wilson-Evered, E. (2000). Using employee opinion surveys to improve organizational health. *Healthy and productive work: An international perspective.* L. R. Murphy and C. L. Cooper. London, Taylor & Francis: 15-49.

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Wilson-Evered, E., Härtel, C. E. J. and Neale, M. (2002*). Longitudinal Evidence that Leaders Who Invest Energy to Build Morale in the Workplace Can Create an Environment for the Future Generation of Ideas.* Annual British Academy of Management Conference: "Fast-Tracking Performance through Partnerships." London, England.

Wilson-Evered, E., Härtel, C. E. J. and Neale, M. (2002*). Leadership and Innovation: Surfacing synergies among constructs and theories.* Annual British Academy of Management Conference: "Fast-Tracking Performance through Partnerships." London, England. Best Paper in Track Prize for Leadership and Culture.

Wilson-Evered E. and Härtel C. E. J. (2001*) How can managers increase support for new ideas? A longitudinal Investigation?.* 61st Annual Academy of Management Conference, Washington, DC, USA, Academy of Management. Best Paper Award.

Wilson-Evered, E., Härtel, C. E. J. and Neale, M. (2000). *A longitudinal study of work group innovation: The importance of transformational leadership and morale.* 60th Annual Conference of the Academy of Management. " A New Time", Toronto Canada, Academy of Management.

ABSTRACT

The first study was conducted at a medium-sized Australian hospital undergoing major organizational change. The study used data supplied by 277 employees, across all professions and levels of the workforce, who completed an employee opinion survey distributed to all staff in 1996 and 1997. Supportive leadership and participative decision-making were found to be highly correlated and were significantly associated with team morale and support for team objectives. Further, team morale and support for team objectives together contributed a significant proportion of the variance in support for new ideas measured in the following year. It was concluded that supportive leaders who adopt a participative decision-making style will increase support for new ideas in the workplace by increasing team morale and support for team objectives. The results, which were derived over a time period of two years, suggest that leaders who invest energy to build morale in the workplace can create an environment for the future generation of ideas.

The second study revisited West's (1990) theory of group innovation, which holds that innovation occurs through group processes. The role of leadership in the group innovation process is not clearly defined; rather group processes are identified without reference to the leader's influence on those processes. In contrast, theories of leadership suggest that leaders have a major role in achieving innovation and, moreover, that innovation is a product of transformational leadership style. Nonetheless, the leadership-innovation relationship has not been clearly demonstrated at the group level of analysis. This study presents an empirical investigation of the theoretical linkages between group innovation and leadership style using West's (1990) typology of group innovation and Bass and Avolio's Full Range Leadership Model (1990; 1994). By examining the points at which the models juxtapose, the study contributes to the development of a new perspective on the leadership-innovation connection with respect to groups. The study was conducted in the same specialist health facility employing approximately 970 staff. Employees in 45

groups rated a number of leadership styles including supportive leadership and the five styles identified in the Full Range Leadership Model. Transformational leadership was found to be the most effective style in providing a positive team climate supportive of innovation. The findings provide support for the notion that theories of innovation and theories of transformational leadership share common conceptual dimensions and offer a way of looking at leadership in terms of the specific context of leadership *for* innovation.

The final study, a longitudinal study of work group innovation, examines the importance of transformational leadership and morale. The study takes place in the same health care setting, which reflects an industry where the continual introduction of new clinical interventions and technologies to improve patient and business outcomes is a key driver. This study sought to clarify the way in which leadership impacts on actual work group innovations designed to benefit the major stakeholders of the health care industry. The study used 45 groups of employees at a specialist metropolitan teaching hospital and found that transformational leadership measured in 1997 was significantly related to team morale measured in the same year. Morale in 1997, in turn, was significantly related to actual innovations in 1998, which were rated independently by a panel of health industry experts. It was concluded that the adoption of transformational styles of leadership in the workplace influences innovation by producing high levels of group morale that, in turn, results in work group interventions that have a measurable benefit to patients. It is suggested that investing in the development of certain leadership behaviors is an important management strategy that can result in improved group performance to generate innovations that benefit patients.

In practical terms, the research findings point to the need to integrate two possible common organizational improvement strategies. First, the use of work groups to generate and implement new ideas and, second, the development of leadership capacity to promote innovativeness in others.

STATEMENT OF AUTHORSHIP

Except where reference is made in the text of the Research Report, this report contains no material published elsewhere or extracted in whole or part from a thesis or report presented by me for another degree or diploma.

No other person's work has been used without due acknowledgment in the main text of the Research Report.

The Research Report has not been submitted for the award of any other degree or diploma in this or any other tertiary institution.

(Signed) [redacted] (Date) 30 Jan 03

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Preferring to start something new rather than write about things completed made the thesis writing a most onerous task and at times disconcerting. I'm sure others taking such a path feel that way. This long journey would never have ended without the inspiration and encouragement of two people: Associate Professor Charmine Härtel, my supervisor, and Rick Dall, my partner.

Charmine's brilliant intellect and energy and her ability to ignite and fan the flames of my personal innovation enabled me to rekindle the fire when the embers were fading and to constantly strive to finish the thesis and produce something publishable along the way. This approach provided the catalyst for moving from research completed to research published.

Rick, my partner has been stoic, strong, considerate, supportive, caring and encouraging. He has offered much practical help in many ways over what seems like a hundred years - and for that I am most grateful. As an electronic engineer his computer skills saved many crises, which would have been devastating had he not been on hand with his vast and thorough computer 'fixing' skills.

Victoria and Lucas Wilson-Evered have bought much joy and distraction on this journey but what would life be without pain and love? My mother Mrs Joan Booth and father Herbert, my older brother Dennis and my late younger brother Derek, have nurtured and encouraged me all my life to believe in my abilities. I am so thankful for how they have shaped my disposition and values.

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Finally, I send tribute to the terrific people at the hospital where this research took place. They continue to experience major change and continue to contribute comparatively high levels of performance and involvement, as indicated in subsequent surveys.

DEDICATION

I should like to dedicate this thesis to my mother who is a tower of strength and inspiration and has always believed in and supported me throughout all the transitions in my life. She is a major source of strength for many people and brings together a loving supportive family and friendship network that would not be so without her.

Chapter 1: Overview of the Research

Research Aims

Employees who generate new ideas for improved ways of working and delivering services can provide their organizations with a competitive edge. Leaders are expected to instigate the idea generation process but previous research has not provided clear evidence regarding the role of the leader in supporting employees' ideas and innovations. This thesis develops a model of climate factors that describes how leaders might enable support for innovation.

The thesis reports on the results of three studies conducted over a three-year period on one organization. The aims of the research are:

- to identify synergies among construct definitions and theoretical models of leadership and innovation;
- to apply the notion of support for new ideas among staff as an indicator of the potential for generating innovations at work;
- to explicate common concept definitions and therefore expected outcomes of two theoretical models;
- to test relationships between theoretical facets of climate for innovation and transformational leadership;
- to test the links between leadership, group processes and innovation outcomes;
- to determine the links among leadership, group climate and implemented innovations;
- to compare a number of leadership styles with respect to their impact on innovation;

- to examine the relative importance of group processes and leadership for innovation;
- to determine the importance of transformational leadership and morale in implementing innovations that are judged by industry experts as benefiting patients in a hospital setting.

Research Scope

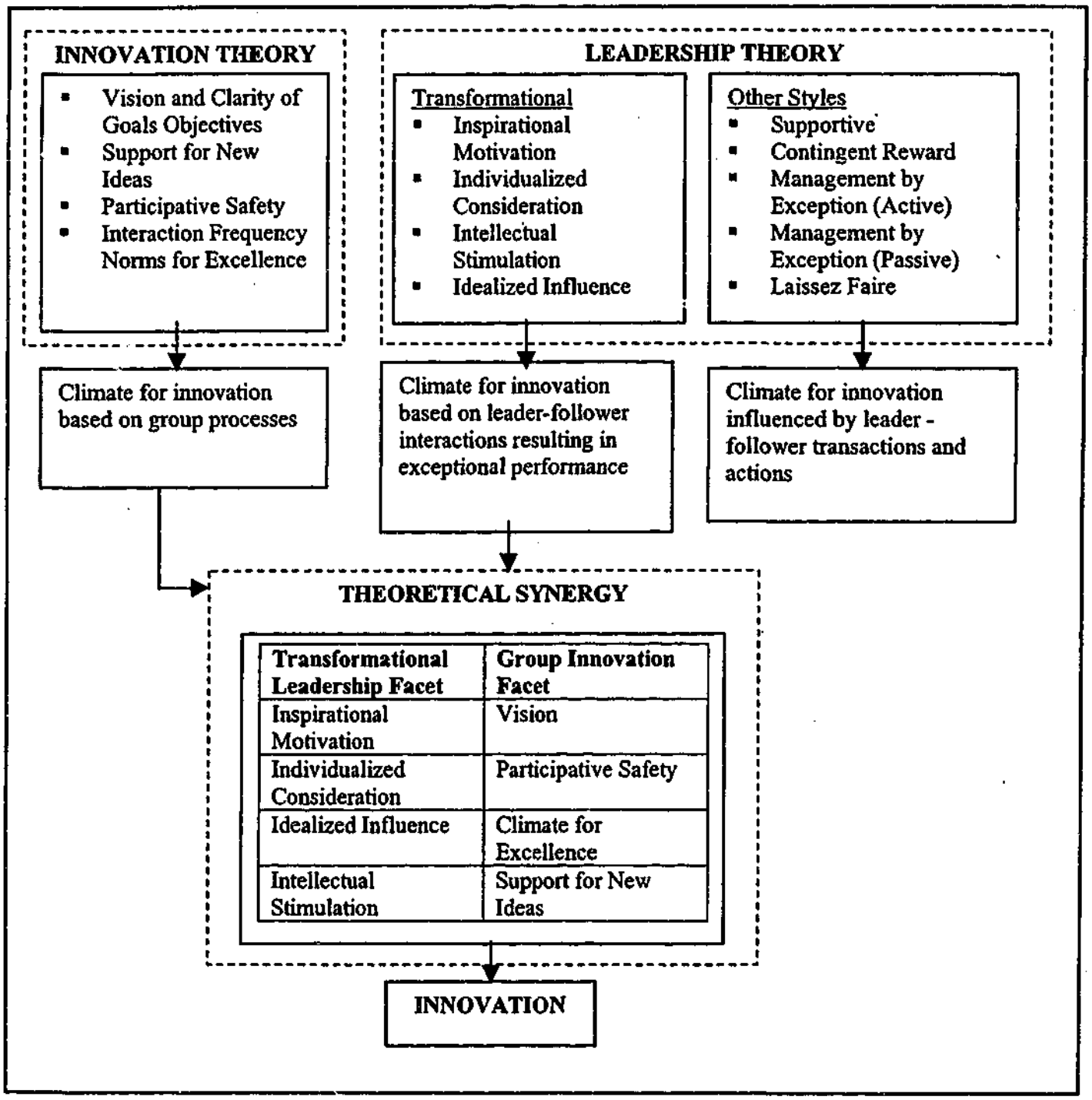
The thesis presents an empirical investigation of leadership and work climate over a three-year period. The purpose of the research is to confirm a set of determinants that can be used by managers and leaders to influence innovative outcomes in the workplace. The research includes both longitudinal and cross-sectional methodologies. Repeated measures were obtained from participants employed by a single organization. Interview, group survey and questionnaire methodologies were used in order to reduce the impact of common method variance and enhance the significance of the findings. The research contributes to the literature through the resultant explication of a defining context of leadership *for* innovation. This is in contrast to generic or situational leadership models which suggest leadership is defined *by* the situation and the followers. Moreover, group theories of innovation that omit the explicit role of the leader are challenged. Rather, it is proposed that leaders determine specific situations and outcomes through the behaviors they adopt and the focus they take. In this thesis, the focus is a climate for innovation, and the research proposes that when prerequisite leadership behaviors are adopted there is a positive impact on group morale, which results in a greater likelihood that beneficial innovations are implemented.

The research was undertaken in a large Australian hospital, and while the context is arguably representative of the organizations in this industry in Australia, it may not represent other sectors or the health care industry in other countries.

Theoretical Framework

The thesis represents the first integration of two well-regarded theories: West's (1990) typology of group innovation and Bass and Avolio's (1990, 1994) Full Range Leadership Model. Synergies among these theories are identified (See Figure 1) in order to advance understanding of the leadership-innovation connection with respect to groups.

Figure 1: Overview of Research Thesis



Overview of the Epistemology and Research Approach

The studies presented in this dissertation use a combination of longitudinal and cross-sectional research designs to investigate the relationship between leadership and innovation. The data upon which this thesis is based were collected using employees working in natural workgroups in a hospital undergoing a sustained change management intervention. The research program adopts a scientific realism epistemology (Bhaskar, 1978; Sayer, 1992) as it is the predominant method of exploring theories of leadership and innovation in the academic literature and the thesis is concerned with both theory building and theory testing.

Scientific realism postulates theoretical entities or causal structures to explain phenomena, which may be observed and measured, or unobserved and inferred, the latter being the product of perceptions or cognitions (Fletcher, 1996). Accordingly, this thesis attempts to explain innovation through an examination of theoretical entities of leadership and innovation and through the construction of possible pathways to innovation via observable and unobservable phenomena. Following the tenet of Fletcher (1996), this version of scientific realism contends that theories are intended to sufficiently ascribe and represent a world that is partly independent of human cognition or perceptions. Hence, this thesis aims to construct true theories about the world. Further, it was assumed that the variables selected for study are measurable and that it is possible to make estimations of the true relationships between variables (Campbell, 1988). Although the intent of this approach is to find an optimum answer to the problem, it is accepted that the conclus drawn may neither be definitive nor exhaustive (Campbell, 1988).

There are three studies presented in the dissertation. Study 1 involved a longitudinal study of the link between supportive leadership, participative decision-making, support of team objectives, morale and support for new ideas. The sample

comprised the entire staff complement of hospital employees working in a specialist hospital for women and babies. As with census surveys in most hospital settings, female nurses were represented proportionately more than other groups in the sample, which included a range of occupational groups including doctors, allied health professions, technical professions and operational groups. The survey was distributed to 917 employees of the hospital at Time 1, and fifteen months later to 955 employees at Time 2. The response rates were 61% and 54% respectively. Full data for all the variables in the analysis from both years were available from 277 employees.

Study 2 involved a cross-sectional study exploring potential synergies and the relationship between theoretical concepts of leadership, workgroup innovation and actual innovation. Participants were 955 employees in 45 workgroups at the same hospital as in Study 1. There was an average of 11.38 people in each workgroup, and an average of 56% of the people in each workgroup responded in full (range 20% to 100%). Leadership and climate for innovation data were collected using a survey and, during the same year, a qualitative survey was employed to collect evidence of innovations implemented over the previous year. The innovations were subsequently rated on a quantitative scale rated by industry experts.

The next study, Study 3, involved a longitudinal study of the link between transformational leadership, workgroup climate and innovation. Participants in this study were 45 workgroups - the same population at the same hospital as Studies 1 and 2. There was an average of 11.38 people in each workgroup. For the survey measures of transformational leadership and morale, an average of 56% of the people in each workgroup responded in full (range 20% to 100%). Data on implemented innovation were collected in the subsequent year using a qualitative survey and rated on a quantitative scale by a group of five industry experts as in Study 2.

Study 3 was designed to expand understanding of how support for innovation is instigated and maintained in workgroups. In particular, the study connects leadership to implemented innovation. These issues are examined for a number of reasons. First, because leadership is absent as a defined antecedent in group theories of innovation. Second, because theories of transformational leadership indicate innovation as an outcome but do not distinguish the effect of leadership from the influence of the workgroup. This leaves an unanswered question, 'Does leadership exert an influence directly on innovation, or through group processes?' Finally, the leadership literature has not yet defined a precise context which articulates leadership *for* innovation although innovation is an objective of most, if not all, organizations.

The body of knowledge existing on the topic of this dissertation is relatively small and lacks empirical evidence, although research of both leadership and innovation is extensive and varied. The study addressed a relative paucity of longitudinal designs to the study of leadership and innovation (Huber & Van de Ven, 1995, p. 270). A longitudinal design was selected on the basis of theoretical considerations (Monge, 1990) since the emergence of innovation necessitates the passage of time for group processes or leadership to assert its effects. As Monge (1990) stipulates, if theory specifies that several variables constitute a process that evolves over time, then a longitudinal study is indicated. Implicit in theories of leadership and innovation are both immediate and time lagged effects.

The inner context (Pettigrew, 1995) of the organization interacts with a longitudinal program in many ways, both subtle and obvious. In particular, the complex, structural, cultural and political environment within which this research occurred had effects that cannot completely be accounted for by longitudinal research or any other known methodology in organization science. Notwithstanding these limitations, all studies were conducted within the same organization over a three-year period. The main purpose being

to minimize the impact of variation in terms of inner context, specifically, organizational design, structure, strategy, human resource practices and culture, and different change programs.

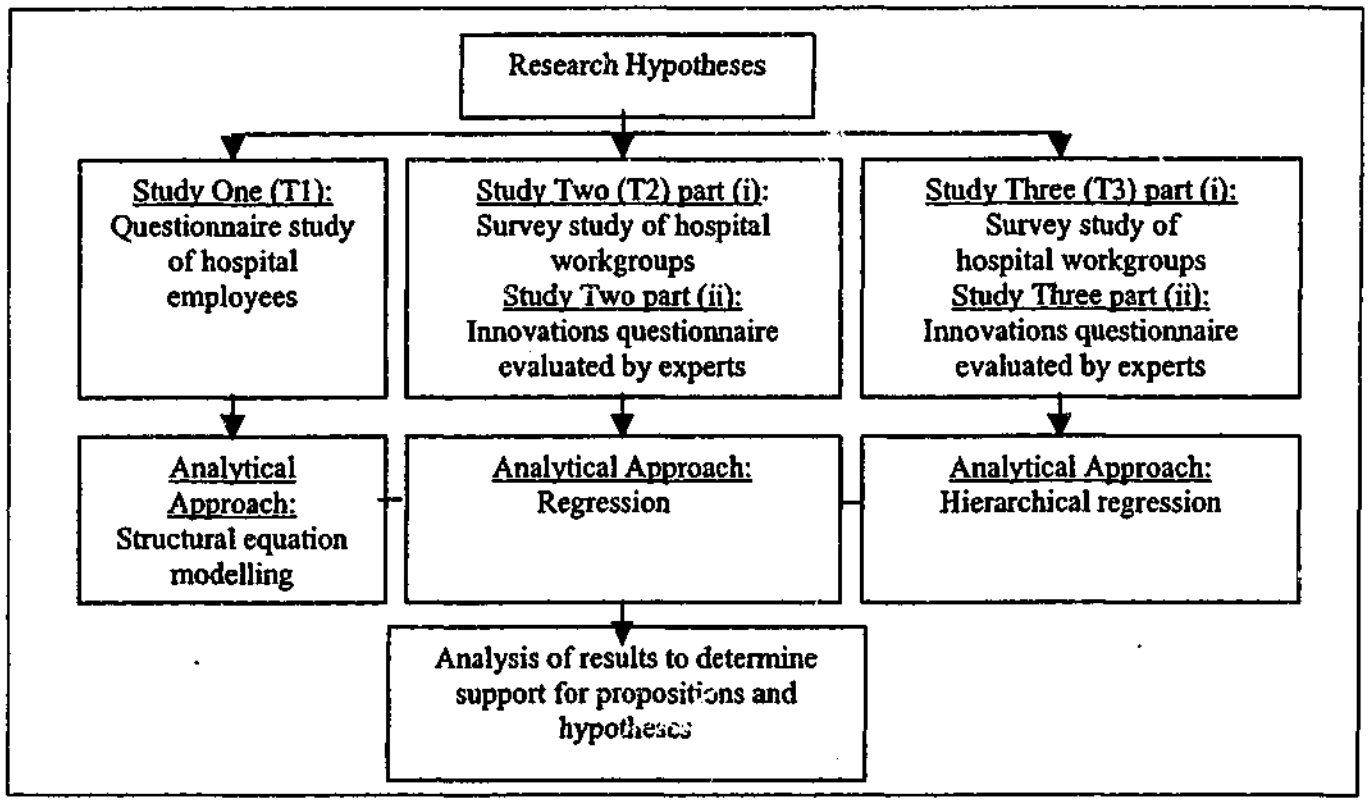
Data were collected using both survey methodology completed by the same group over two time periods which, in part, addresses the limitations declared as a consequence of common method variance due to single source data. Innovation data were also collated for two separate time periods in the year following each of the census surveys. The choice to use multiple data sources reduces contamination by common method variance, which occurs when data representing the antecedent and criterion variables are derived from the same respondent using similar methodologies (Podsakoff & Organ, 1986).

When independent and dependent variables are collected in the same survey there is a possibility that some variance is shared because the data collection method occurred within the same instrument at the same time. Further, individuals tend to respond to survey scales in specific ways so that linear correlation may be inflated (Kline, Sulsky & Rever-Moriyama, 2000). A method for limiting common method variance is to collect independent and dependent variables from separate sources. This methodology was used to strengthen this program of research in two ways. First, subjective questionnaire items measuring independent constructs were compared with performance data collected from secondary respondents in industry, and at a different time period (Study 3). Second, in Study 1, common method variance was reduced by longitudinal design. A cross-sectional study was appropriate for Study 2 because the focus was on the covariance of transformational leadership and climate for innovation, and comparing two theoretical constructs. However, Study 2 also used data from different sources as the criterion or dependent variable.

In summary, a longitudinal approach with multiple data sources increases the amount of confidence in the veracity of the results (Huber & Van de Ven, 1995). Accordingly, Study 1 employed survey methodology at two time periods, and Study 2 used survey methodology and structured interviews to collect data on, and subsequently evaluate innovations. Finally, Study 3 used survey methodology and, in the subsequent year, implemented innovations were collected and evaluated using different groups of participants. The research methodology for this research is summarized in Figure 2.

The research design provides the potential to make unambiguous inferences about causality (Fletcher, 1996). Causality in this sense is viewed in terms of theoretical possibilities rather than predicting statistical certainty.

Figure 2: Overview of the Research Methodology



Contributions of the Research

This research has both theoretical and practical significance. Theoretically, the research makes a significant contribution by suggesting a sub-theory of leadership for

innovation, much in the same way that climate is described in terms of a defining context. From a practical point of view, the research provides organizations with ideas to stimulate innovation in the workplace, especially in the context of organizational change. This research also provides the first study into the link between theories of group innovation, transformational leadership, and workgroup performance as well as providing evidence of the linkages between leadership style, climate for innovation and implemented innovations that some writers have alluded to, but few have empirically measured (Bass, 1998; Howell & Avolio, 1993).

An examination of the literature on leadership and innovation reveals that the perspective of the researcher is a crucial issue in this area. Classically, two convergent views on innovation emerge depending on whether the scholars' perspective is primarily one of a leadership researcher or of innovation. Those with a leadership perspective propose that innovation is an outcome of certain leadership behaviors most commonly those epitomized by the transformational leadership style (Avolio & Bass, 1988, p. 34; Bass, 1998, p. 260; Bass & Avolio, 1994, p. 29; Glassman, 1986; Guastello, 1995; Howell & Avolio, 1993). On the other hand, those adopting an antecedent perspective to the study of innovation argue that leadership style might or might not be a significantly influential precursor (Burpitt & Bigoness, 1997; Ekvall, 1996; Farr, 1990, p. 54; Flood, Hannan, Smith, Turner, West & Dawson, 2000; Guastello, 1995; West, 1990, p. 60). The second major issue is the choice of antecedent or process approach to the longitudinal study of innovation (King, 1990; Van de Ven & Poole, 1995). The former is concerned with an episode in time and events occurring before or afterwards, whereas the focus of the latter is on the temporal sequence of events that occur as change unfolds in an organization (Huber & Van de Ven, 1995).

The focus of the thesis research favours an antecedent approach for three reasons. First, whether leadership is important for innovation remains equivocal. Second, if leadership is important there is a paucity of research comparing a number of leadership styles for innovation. Third, implemented innovation as an outcome was selected as the criterion of interest in this research and also because of its importance in the organizational context. The latter comprised a major, redevelopment program - rebuilding a 950-bed acute tertiary teaching hospital - combined with clinical and business process improvement strategy, and a merger. Finally, the question of whether the effect is direct or through group processes such as workgroup climate for innovation remains unanswered. The pursuit of answers to these issues requires an antecedent, rather then process, approach to the study of innovation outcomes.

In practical terms, the dissertation provides detailed evidence of the relationship between leadership and innovation in workgroups. Innovation is a product of many factors, however, scholarly studies have demonstrated that group processes are among the most influential. Conversely, individual creativity is influenced largely by personality factors (Patterson, West & Payne, 1996; West, Patterson, Pillinger, Lawthom & Nickell, 1997). The situationally specific nature of group process provides a practical context to the study of workgroup innovation, particularly in a health care setting. Innovation can both stimulate growth and the acceptance of change (Hosking & Anderson, 1992, p. 45) and also engender business transformation for those businesses under threat of extinction or takeover (O'Neill, Pouder & Buchholtz, 1998). This thesis also contributes to managers' understanding of innovation, where leadership actions are required, and what outcomes can be expected for different kinds of workgroup processes.

Thesis Overview

In Chapter 2, the broad context for this thesis is established by exploring research into the antecedents of innovation in the workplace with a focus on supportive leadership, support for team objectives, participative decision-making and workgroup morale. This second chapter introduces the concept of support for new ideas as an indicator of innovation in potential organizations and West's (1990) theory of workgroup innovation. The concept of climate for innovation (Ekvall, 1996), which is a specific framework for interpreting the multidimensional construct of climate (James & McIntyre, 1996, p. 77; Schneider, 1990, p. 63) in terms of innovation, is also discussed. The chapter concludes with a model of hypothesized antecedents of support for new ideas in the workplace.

In Chapter 3, a review of the current theoretical literature on leadership and climate for innovation is discussed, specifically where the two bodies of knowledge relate. First, leadership styles are compared in terms of their relative likely impact on innovation. Second, theoretical development in the areas of transformational leadership and climate for innovation are described in some detail, and points of synergy are extracted. Next, two theoretically-based psychometric measures are introduced, specifically, the Multifactor Leadership Questionnaire (MLQ) and the Team Climate Inventory (TCI). Researchers such as Bass and Avolio (1994; 1997) and Anderson and West (1998) respectively, contend these are tools for theorising and researching in each of these domains. This information is then linked to existing constructs of transformational leadership and climate for innovation to determine their relevance in clarifying the link between leadership and innovation. In particular, leadership styles are considered in terms of their relative impact on innovation. A number of constructs of transformational leadership are then outlined and each of these is compared with the elements in West's (1990) model of group climate for innovation. The chapter proposes points of synergy in the two theoretical models and

argues that although both models constitute antecedents of innovation, their individual contribution is unclear.

Chapter 4 moves from the exploration of existing theoretical frameworks to predicting innovation from within theoretical frameworks, and draws on both leadership research and climate for innovation research. This is achieved by developing a model depicting the relationship between transformational leadership, climate for innovation and implemented innovations. It is proposed that transformational leadership impacts on workgroup morale more strongly than any other leadership style. In making this link, a further proposal will be identified that theoretically transformational leadership provides the antecedent conditions for establishing high morale work climate that is conducive for implementing innovation in the workplace. Finally, a model for the way in which transformational leadership influences group climate to generate and implement innovations in a work setting will be proposed.

In Chapter 5, the first empirical study in this thesis is described. This chapter describes earlier research leading to the development of support for new ideas as an indicator of innovation and reports a longitudinal study of particular antecedents of support for new ideas. Drawing on data collected over a 15-month period, Study 1 examines how participative decision-making, workgroup morale and support for team objectives predict support for new ideas in the workplace.

The link between leadership style and climate for innovation in work teams is the focus of Chapter 6. Using two theoretically-based psychometric measures, the MLQ (Avolio, Bass & Jung, 1995, p. 89) and the TCI (Anderson & West, 1996, 1998), this chapter outlines a study designed to evaluate the proposed integration of the two theoretical models. Drawing on data collected over a 15-month period, this chapter also compares the effect of leadership style on group climate for innovation. The chapter then

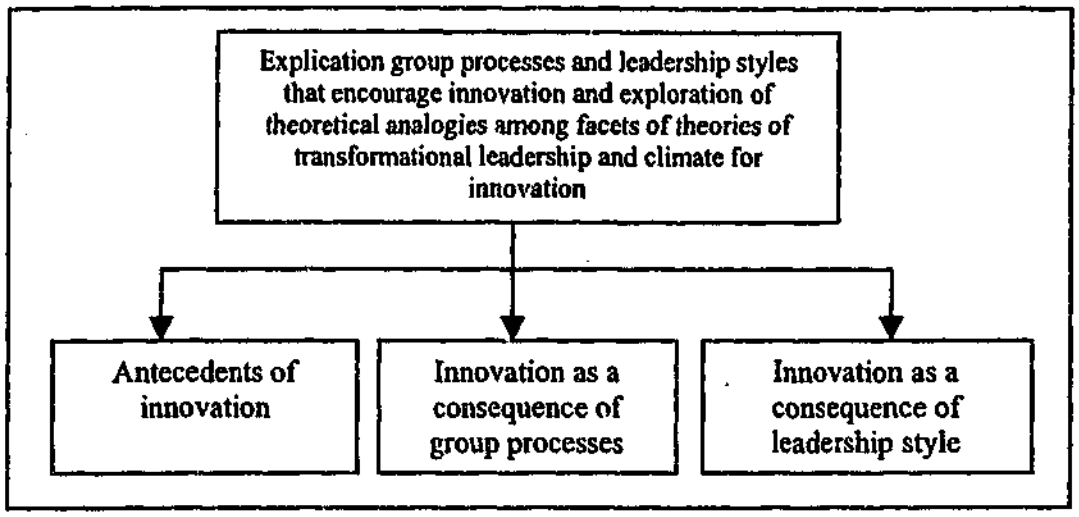
outlines the contribution of leadership and team climate to team performance as demonstrated in implemented innovations during the same year.

In Chapter 6, the contrast between leaders' ratings of innovation and experts' ratings of implemented innovations is analysed. Broadly, this chapter contains an analysis of data collected on implemented innovations as a predictor of workplace performance. In light of the existing debate in the literature regarding the factor structure of the MLQ and TCI, separate exploratory factor analysis studies are conducted. The chapter concludes by reporting on a confirmatory factor analysis of the MLQ and proposes a refined model, which is tested in Chapter 8.

Chapter 7 presents the final empirical study in this thesis. Building on the findings of the previous two studies reported in Chapters 5 and 6, this chapter reports on a longitudinal study of workgroup innovations. In particular, the role of transformational leadership and morale is fully explored. Finally, the role of transformational leadership in determining high morale climate and the importance of morale in predicting performance in terms of innovation are explicated.

In the final chapter, Chapter 8, the theoretical integration of leadership and workgroup innovation is combined with the empirical studies in a discussion of the findings of this research program. This chapter outlines the contribution of the research to theory and discusses the practical implications of the research for managerial practice, leadership and group development. The limitations of the research are also discussed and directions for future research are outlined.

Figure 3: Outline of Literature Review



E. Wilson-Evered (2003). "The leadership and workgroup requirements that organizations need to ignite and fan the flames of innovation"

Chapter 2: Workplace Innovation

A central tenet of the present thesis is that the support of new ideas is crucial to innovation. This chapter reviews research related to innovation and examines major theoretical frameworks that may assist in identifying the antecedents of support for new ideas.

Employees who generate new ideas for improved ways of working and delivering services can provide their organizations with a competitive edge (Kanter, 1988; McGrath, 2001; Van de Ven, 1986. Leaders are expected to instigate the idea generating process but previous research has not provided clear evidence regarding the role of the leader in supporting employees' ideas and innovations. This chapter reports on the results of a longitudinal study investigating the role of leadership in increasing support for new ideas in the workplace. The study was conducted at a medium-sized Australian hospital undergoing major organizational change. The study used data supplied by 277 employees across all professions and levels of the workforce, who completed an employee opinion survey distributed to all staff in two successive years. Supportive leadership and participative decision-making were found to be highly correlated and were significantly associated with team morale and support for team objectives. Further, team morale and support for team objectives together contributed a significant proportion of the variance in support for new ideas measured in the following year. It was concluded that supportive leaders who adopt a participative decision-making style will increase support for new ideas in the workplace by increasing team morale and support for team objectives. The results, which were derived over a time period of two years, suggest that leaders who invest energy to build morale in the workplace can foster an environment for the future generation of ideas.

How Can Managers Increase Support For New Ideas?

Ideas often emerge from individuals or groups contemplating and proposing a new process, service or product. What happens to the idea thereafter is often contingent upon the support received when the idea is shared with others (Kanter, 1988). In the absence of a supportive environment, the inventiveness of employees is not rewarded (Amabile, 1988) and therefore unlikely to be repeated. Moreover, failure to support employees' ideas and their progression to innovation implementation and diffusion results in loss of human and business potential, and stifles the growth of knowledge. Organizations, whether non profit or for profit, cannot afford to disregard such development or survival opportunities.

To develop the competitive advantage offered by intellectual capital, organizations need to create a climate that enables processes of self-transcending in employees (Ray, 1999). Part of the self-transcending process is the stimulation of employee energy and enthusiasm to imagine and invest in a new future for the organization. The formulation of new ideas underpins innovation, which assists organizational renewal and transformation. While the inspiration to do or produce something different is expected from strategic leaders, academic researchers and research and development (R & D) groups (Bunce & West, 1996), all levels of workers provide the talent pool for innovation (Yochelson, 1998). By analysing the interpersonal processes in an organization undergoing change, this chapter identifies conditions that facilitate support for new ideas in employees.

Ascertaining the interpersonal conditions that enable the evolution of new ideas is important for organizational development and change, which depends on employees' willingness to either find or adopt new and improved ways of working (Amabile, 1988; Kanter, 1988; Rogers, 1983). Leadership is one of the influential factors involved in the creation of a climate supportive of new ideas and innovation (Howell & Avolio, 1993). However, studies of innovation typically overlook leadership, instead focusing on other

factors such as involvement in decision-making (Burningham & West, 1995; West & Wallace, 1991), the presence of a shared vision, clear objectives or goals (King, 1990), group processes, composition and resourcing (West & Anderson, 1996). This gap in the innovation literature is addressed in this research program though a longitudinal examination of the role of leadership in increasing support for new ideas in the workplace. A comprehensive report of this study (Study 1) is detailed in Chapter 5.

Approaches to the Study of Innovation

There are at least three major theoretical strands for understanding innovation. The first focuses on the development of new ideas by individuals or groups through processes of individual creativity and cognitive activity (Kirton, 1978; Rogers, 1983). The second approach aims to explicate the conditions that lead to the growth and support of a creative endeavour that results in innovation in the workplace. West's (1990) group theory of innovation is an example of this *antecedent* approach. The third major approach taken in innovation studies is to examine the *process* of innovation including its diffusion or acceptance by others, of which the work of Amabile and colleagues (1983; 1988; 1996; 1997) is notable. In this chapter, an antecedent approach is taken to understanding the determinants of a climate that supports new ideas in the workplace.

Antecedents of innovation may be studied at three levels: organizational, group or individual. The organizational level of analysis is the most common focus of research (Damanpour, 1987, 1991). Theorizing about group level innovation, West (1990) proposed a four-factor model comprising the socio-environmental antecedents of vision or shared team objectives, participative safety, climate or norms for excellence and support for innovation. West (1990) argues that these four constructs bring together much of the research on the antecedents of innovation. In this chapter, the focus is at the individual

level, specifically in understanding the local interpersonal environment that people require in order to have their ideas supported.

Antecedents of Innovation

Support for New Ideas. Ideation or generating ideas is a critical early stage in the innovation process (Amabile, 1983; West, 1997). Innovation is therefore a consequence of supported new ideas manifested in the intentional introduction of processes, products or services, new or novel to the adopting unit, that are intended to be beneficial (West & Wallace, 1991). Employees experience intrinsic and extrinsic reward when their ideas become realized as innovations (Amabile, 1988; Farr, 1990; Farr & Ford, 1990; West, 1997). Because strategic leadership involves imposing new ways of working and new structures on the organization, it plays an important part in both the introduction and support of new ideas. That is, leaders affect the support of new ideas because they are involved in influencing both the individual and the context (Howell & Avolio, 1993; Keller, 1992; Scott & Bruce, 1994). Whether the new idea moves from bottom-up, top-down or across groups, the climate in which the idea is embedded is critical for its acceptance and development (Bunce & West, 1995; Couger, McIntyre, Scott, Higgins, Lexis & Snow, 1991; Ekvall, 1996; Shin & McClomb, 1988; Van de Ven, 1996). Research demonstrating the impact of climate on support for new ideas is presented next.

In a longitudinal study of innovation in 27 top management teams from hospitals (West & Anderson, 1996), group process variables emerged as the best predictors of innovation. The quality of team innovation was determined by the composition of the team, but it was the team's social processes that influenced overall innovation. Specifically, support for innovation accounted for 46% of the variance for overall innovation. Another study (West et al., 1997) of 81 United Kingdom (UK) manufacturing organizations found that the most innovative companies were those characterized by

demonstrated support of new ideas and reflexive climates or the tendency among employees to challenge objectives, strategies and processes and adapt them accordingly. These studies indicate that the presence of enacted and articulated support for new ideas is a key indicator of *innovativeness* in organizations. Consequently, support for new ideas is selected as an indicator of innovation in the first study of this research.

Apart from support for new ideas, a vision (or a goal) and commitment to shared objectives provide purpose for innovation (Farr & Ford, 1990). Similarly, gaining commitment to a clear vision is an attribute of leaders whose groups are high in innovation (Shin & McClomb, 1998).

Team Objectives. Research has shown a positive relationship between the involvement of organizational members in goal setting, and leadership performance and effectiveness (Atwater & Bass, 1994; House, 1971). This finding suggests that team objectives might mediate the relationship between leadership and innovation. In contrast, West and Anderson (1996) failed to confirm their hypothesis that clarity of commitment to team objectives would emerge as a strong predictor of innovation. These authors explained this failure as a probable ceiling effect because of the very high levels of commitment to team objectives exhibited by the top management teams in their study. Pinto and Prescott (1987) did, however, find that clearly articulated goals foreshadowed successful innovation.

Team objectives (or vision) refer to the notion of a valued outcome shared by team members (West, 1990) that serves as a motivating force to work on the process in order to achieve the aspired outcomes (Kolb & Boyatzis, 1974; Latham, Winters & Locke, 1994). Research indicates that individual participation in setting objectives enhances commitment to them (Guzzo & Shea, 1992). Therefore, a vital part of this study was to evaluate the degree to which individuals perceived themselves to be involved in establishing and

sharing team objectives (Wall & Lischeron, 1977; West, 1990). Overall, the evidence suggests that holding well-defined objectives in common with the group is a strong contender as a mediator in the process of innovation (West & Farr, 1989). Based on the literature on both leadership and innovation, this research proposes the presence of a clear vision or objectives as a possible mediator of innovation.

Participative Decision-Making. Environments that feature a participative style of decision-making encourage innovation (Kanter, 1983; West, 1990). Participation in decision-making is where employees have the capacity to influence decisions that affect them at work (Hater & Bass, 1988; Sagie & Koslowksy, 1994). Research indicates that where people are involved in decisions that affect them, there is a positive effect on work attitudes and performance, innovation and change (Burke & Litwin, 1992; Hosking & Anderson, 1992; Miller & Monge, 1986; Sagie & Koslowsky, 1994).

Organizational change does not necessarily imply innovation although innovation does involve change (Hosking & Anderson, 1992, p. 45; West & Farr, 1990). For outcomes that include both innovation and change, West and Wallace (1991) contend that the more people are involved in decision-making, the more likely they are to invest in the outcomes. Having influence and information coupled with interaction with others increases the likelihood of employees offering ideas for new and improved ways of working. However, the impact of participation on innovation has largely been examined at the organizational level (West, 1990, p. 313).

Participative decision-making is a likely outcome of participative leadership, which has been identified as a leadership style appropriate for promoting innovation (Kanter, 1997; Nystrom, 1979; Payne, 1990). Participative leaders enable members to feel free to participate in discussions, problem solving and decision-making. Employees generally favour participative styles but, in times of a crisis, appreciate directive leadership (Bass,

1990). In a review of research on the participative-directive leadership continuum, high inter-correlations were reported among the active leadership styles of participation, consultation and delegation (Bass, 1990, p. 440). This research explores the role of participation in work and particularly the role of the leadership style in encouraging participation, as the two are strongly interrelated.

Leadership. The exact nature of the kind of leadership that leads to a work environment where new ideas are supported is contentious. On the one hand, some theorists argue the importance of leadership in innovation (Bass, 1985; Bass & Avolio, 1994, 1997; Howell & Avolio, 1993; Kanter, 1983, 1997; House, 1977; Yammarino, Spangler & Bass, 1993). On the other hand, leadership is omitted from theories of innovation (West, 1990; West & Wallace, 1991).

Nevertheless, there is some research that provides evidence to support the assertion that a participative or facilitative leadership style is appropriate for encouraging the potential for innovativeness in others (Guastello, 1995; Payne, 1990). A study of individual innovation found that leadership, individual problem solving style and group relations affect individual innovative behavior (Scott & Bruce, 1994).

Managerial practices have been shown to significantly impact on innovation outcomes as demonstrated in the study of manufacturing organizations previously mentioned (West et al., 1997). Corporate creativity is fostered through leadership, together with clear goals, freedom and encouragement to innovate (Burnside, 1990). Facilitative leadership appears to be instrumental in generating high morale within the workplace and encouraging participation in change and innovation (Glassman, 1986; Hosking & Anderson, 1992). On the other hand, the impact of leadership on innovativeness has been considered to be weak by some authors (Kimberly & Evanisko, 1981; Tornatzky & Klein, 1982).

By contrast, in a European study by Dahlgaard, Larsen and Norgaard (1997), four out of five leadership styles studied had a strong relationship to the success criterion 'creativity.' Another study investigated the relationship between executive leadership style and organizational innovation in non-profit human service organizations (Shin & McClomb, 1998). The results showed that chief executives who are most likely to make innovation happen are those who have a clear vision of the future operation and direction of organizational change and creativity (Shin & McClomb, 1998). Yukl and VanFleet (1992) conclude that, after decades of research, the effectiveness of participative leadership is equivocal. To summarize, the research literature on leadership styles has not produced clear conclusions on the nature of leadership influence and where that influence exerts its effects on employees' potential to innovate. Nonetheless, taken the collective findings on this area, leadership appears to have a role in innovation.

High morale is also a consequence of leadership style (Shamir, Zakay, Breinin & Popper, 1998; Solomon, Mikulinicer & Hobfill, 1986). The more effective the leadership, the more the followers are satisfied with the leader, and the higher the morale (Motowildo & Borman, 1978; Payne, 1990). High morale may also be a manifestation of the collective mood of the group (Bartel & Saavedra, 2000). Coordinated action, such as in the development of new ways of working or new products, is best accomplished when individuals can synchronize their thoughts, feelings, and behavior (Hackman, 1992).

Morale. Most definitions of morale refer to satisfaction, motivation and group membership, which are all characteristics of high performing teams (Shamir et al., 1998). Interestingly, morale has not yet been researched as an antecedent of innovation. This is surprising since the term suggests energy and enthusiasm for the task at hand and, arguably, leads to improved performance (Motowildo & Borman, 1978).

Morale tends to be future-oriented and often involves a sense of common purpose or goals (Locke, 1976), which implies a collective state of mood, group cohesion and identification (Bartel & Saavedra, 2000). Group moods are defined as diffuse and relatively enduring affective states that are shared by group members (Bartel & Saavedra, 2000).

Research on the related constructs of cohesion, affectivity and team spirit has shown that they are important for innovation (Isen, Daubman & Nowicki, 1987; George, 1990; 1996; Payne, 1990; Carless, Mann & Wearing, 1996). For example, Hirst and Mann (1997) found in a study of key communication behaviors in successful R & D teams that team spirit was strongly and significantly correlated with customer ratings of project performance. The researchers concluded that successful teams (those meeting expectations of the project) displayed open discussion, a project leader that acted as a facilitator, and a positive team climate. A recent longitudinal study reported by Pirola-Merlo, Härtel, Mann and Hirst (in press) showed that most of the effect of leadership on team performance in R & D teams was through team climate, as measured by the TCI.

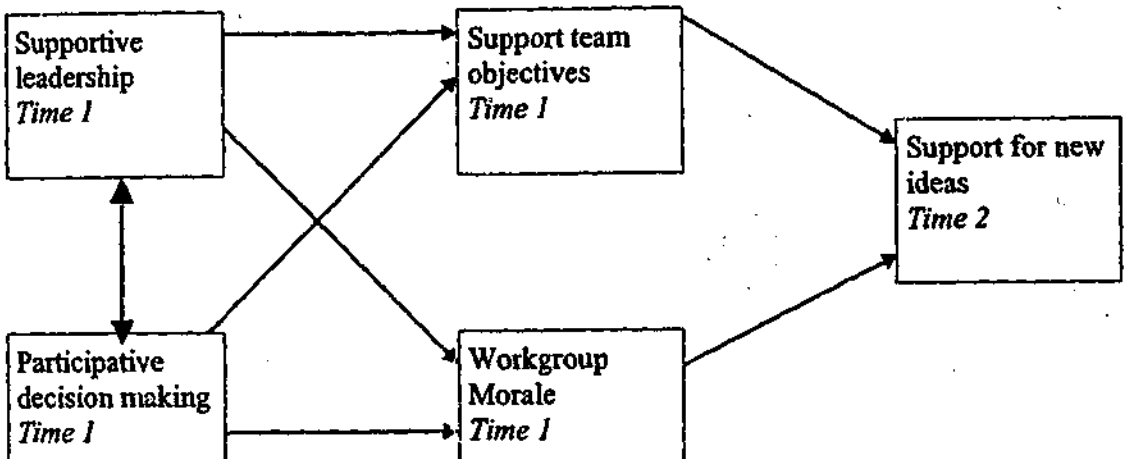
Collectively, the literature suggests that morale or team spirit plays an important role in facilitating innovation at work. Moreover, it also suggests that leadership style will have a critical impact on the workplace morale. These propositions are explored in this research.

Building on the research findings reviewed, it is proposed that in the presence of supportive leadership, employees share goals, participate in decisions, feel energized and become creative. This argument is justified given Berlew's (1974) proposal that members of an organization need to be excited about the potential for change and innovation and that leadership style is key to generating this excitement.

Climate for Innovation

A model (See Figure 4) is presented within this research that depicts climate for innovation (support for new ideas) as being contingent upon participative decision-making processes, shared support for team objectives, supportive leadership and high levels of group morale. Theoretically, leadership (Bass, 1985) should shape climate. This research tests the prediction that there is a positive relationship between supportive leadership and individual innovation (measured by support for new ideas) and that this relationship is mediated by participative decision-making, support for team objectives and morale.

Figure 4: Hypothesized model of antecedents of support for new ideas



This chapter began with the notion that a climate for innovation is stimulated, in part, by support for new ideas. As such, support for new ideas is an indicator of innovation. Next, the possible antecedents of such a climate are reviewed, including shared team goals, high morale, energy and enthusiasm and participation in key decision-making. Specifically, the literature linking leadership to innovation is explored. From this review, it is argued that leadership should be included as an antecedent of innovation. Based on this proposition, a model of a climate supportive of new ideas is developed.

In the next chapter, the focus is specifically on which leadership style might be most effective for innovation. Theory posits that transformational leadership is linked with excitement and creativity among followers (Bass, 1985; Bass & Avolio, 1994; House, 1977, p. 81; Kanter, 1997, p. 199; Kanter, 1988, p. 137; Kotter, 1999, p. 248). It is my contention that elements of transformational leadership theory are conceptually analogous to those of West's (1990) theory of group innovation. From this analysis, it is axiomatic that transformational leadership is important among other group processes for innovation (Shamir et al., 1998) and that transformational leadership will be more effective than other styles of leadership in nurturing a climate for innovation.

Chapter 3: Leadership and Climate for Innovation

This chapter outlines an omission in the literature regarding the leadership-innovation relationship at the group level of analysis. First, I develop the argument by briefly reviewing relevant literature and extracting two theoretical models. Next, I examine the synergies among the constructs of theories of innovation and transformational leadership. Within this context, an argument is presented for analogous underlying constructs of two psychometric tools designed to measure leadership and innovation respectively. Because the factor structures of these measures are debated in the literature, factor analytic studies of each tool are presented. Subsequently, the differential impact of a number of leadership styles on innovation is explored. I argue that transformational leaders, through their behaviors, produce a climate for innovation among their followers. Finally, two contributions to the literature with respect to theories of innovation and leadership are proposed. The first articulates that, theoretically, climate for innovation must incorporate the influence of active leadership as a facilitator of innovation. The second proposition is that the style of leadership best suited for innovation is transformational leadership.

It is becoming increasingly clear that innovation is important not only for the traditionally creative settings of R & D and information technology (IT) but also for many other industries and services. Yet, the decree to innovate is often issued in organizations without *a priori* enabling the working environment and committing sufficient energy and resources to both ignite *and* fan the flames of innovation (Amabile et al., 1996; Amabile & Gryskiewicz, 1997; Kaluzny & Zuckerman, 1991; McLaughlin & Kaluzny 1997; Rogers, 1983; Savitz, Kaluzny, Kelly & Tew, 2000a). This chapter offers new information on the environmental factors that lead to innovation. In particular, it shows how organizational leaders can impact on the climate for innovation.

The literature is unclear about the relative contribution of leadership or group processes to innovate. For example, in the previous chapter, I presented West's (1990) theory of group innovation, which holds that innovation occurs through group processes. The group processes implicated are: norms for producing high level work, an orientation to the team, shared vision or objectives, an environment in which staff share their new ideas and are supported and encouraged, and an environment where they feel safe and able to participate in all aspects of the team. Noted previously was the omission of the role of leadership in the group innovation process. That is, group processes are identified in the literature with no reference to the leader's influence on those processes. However, leadership research reveals that leaders that are supportive, participative and facilitative appear to have positive effects on employee creativity. Further, scholars propose theories of leadership suggesting that leaders have a major role in achieving innovation and that innovation is a product of transformational leadership style (House, 1977; Kanter, 1988; 1997; Kotter, 1999; Lovelace, 1986).

Group Innovation

Innovation. The academic and practitioner literatures proliferate with writings expounding theoretical models, empirical investigations and case studies of innovation and creativity in the workplace (for a useful overview see Amabile, 1996; West & Farr, 1990; Van de Ven, 1986). Scholars of innovation hold a range of disciplinary perspectives and preferences for levels of analysis. Theories pertaining to innovation include notions of the creativity process (Amabile, 1983; Amabile et al., 1996), organizational innovation (Damanpour, 1991), individuals' role in innovation (Farr, 1990), innovation in R & D teams (Van de Ven & Poole, 1995), and the diffusion of innovation (Rogers, 1983). The extensive literature on theories that postulate on group processes that bring about innovation are extracted and discussed next.

Theory of Group Innovation. A variety of factors are implicated as forces shaping and defining innovative companies. Examples of external forces include competition, economic restrictions and loss of market share. Stressful work situations can lead to innovation where group processes are supportive (Burnside, 1990; West, 2000). Internal influences on innovation include the size of the organization, the number of innovators in the group, resources, age of the organization and personnel, the orientation towards high quality service and the ambition to be established as market leaders (Amabile, 1988; Daft, 1978; Ekvall, 1996; Hosking & Anderson, 1992, p. 45; Kanter, 1988, p. 137; Kimberly & Eranisko, 1981; King, 1990, p. 53; Nystrom, 1979, p. 172; Pirola-Merlo, 1997; Van de Ven, 1986; West, 1997, p. 42; Yochelson, 1999). Notwithstanding the importance of external forces, the substantial number of internal forces are arguably more challenging for companies seeking to stimulate innovation. Further, they are immediately accessible for an organization to address. Despite the plethora of studies, few scholars have built theories to integrate these influences (King, 1990). Among the notable exceptions is West's (1990) social psychological theory of workgroup innovation, which provides an integration of research on the antecedents of workgroup innovation.

West (1990) defines innovative teams as those that regularly practice four processes: creating a shared understanding of goals and commitment to excellent task performance; enabling and encouraging participation in decision-making and making it safe to do so, articulating and demonstrating support for the contribution, and the development of new ideas from all team members. He also argues that team reflexivity is important for innovation. This is the degree to which group members reflect upon and refine team objectives, strategies, processes, interactions and diversity among members (West, 2000). West's (1990) theoretical model of workgroup innovation was introduced in Chapter 2 and is described more fully in subsequent sections.

Innovation for the purposes of this study follows the example of West and Farr (1990) and includes both the generation *and* introduction of a new idea or process. Such innovations may have been introduced elsewhere but the defining characteristic is that they are new for that particular workgroup (West & Farr, 1990). West's (1990) theory has been validated in a range of teams and workgroups such as executive, manufacturing and health care teams (Anderson & West 1996; West et al., 1997). These are discussed next.

Measuring group innovation. Addressing an identified omission in the study of workgroup innovation, Anderson and West (1996, 1998) developed the Team Climate Inventory (TCI), a multidimensional measure of facet-specific climate for innovation within the proximal workgroup environment. Proximal workgroup environment is defined as the group to which individuals are assigned either permanently or temporarily (Anderson & West, 1998). The TCI is based on West's (1990) four-factor theory of group innovation and focuses on shared objectives or vision, group participation and safety, team support for innovation, and the group's task orientation.

The TCI has been employed in a number of case studies, longitudinal studies, research programs and team-based interventions (Agrell & Gustafson, 1996; Anderson & West, 1996, 1998; Bain, Mann & Pirola-Merlo, 1999; Burningham & West, 1995; West et al., 1997; West, 1990, 1997; West & Anderson, 1996; West, Smith, Lu Feng & Lawthom, 1998). The strength of the TCI lies with its utility for explicating the relative contribution of processes that predict, or are important for, a facet-specific climate for workgroup innovation.

A number of studies indicate that a five-factor structure provides a more parsimonious fit with the data than the proposed four-factor structure does (Agrell & Gustafson, 1994; Anderson & West, 1998; Kivimaki, Kulk, Elovainio, Thomson, Kalliomaki-Levanto & Heikkila, 1997). The additional dimension, *Interaction frequency*,

emerges as a separate scale from *Participative safety*. Kivimaki and colleagues (1997) conclude that the five-factor structure offers superior explanatory power in samples where job complexity is high (Kivimaki et al., 1997). The four-factor model, however, appears applicable in studies of innovation among health care teams (West, 1997), which comprise this research sample. Next, the characteristics of the work environment conducive to innovation, beginning with the notion of climate, are considered.

Climate for Innovation. Organizational climate is a multifaceted construct that embodies a range of individual evaluations of the work environment (James & James, 1989). The sources of these individual evaluations are environmental perceptions such as perceptions of leadership, relationships with co-workers, team spirit, and participation in decision-making (Sayer, 1992). Schneider (1990) argues that the concept of climate should be used in relation to a defining context, such as a climate for innovation and creativity (Amabile, 1996, p. 179) or safety climate (Hofmann & Stetzer, 1998). Drawing on strands of research and theory, several scholars have attempted to define a climate that is supportive of innovation (Ekvall, 1996; King, 1990; West, 1990).

The concept of organizational climate for creativity and innovation proposed by Ekvall (1996, p. 62) is described as an attribute of the organization that embraces attitudes, feelings and behaviors. His model includes dimensions of challenge, freedom, idea support, trust/openness, dynamism/liveliness, playfulness/humour, debates, conflicts, risk taking and idea time. A test of Ekvall's (1996) model demonstrated that change-oriented leadership style consistently showed strongest correlations with climate for innovation. In contrast, structure-oriented style showed weak or no correlation because that style includes both creativity inhibiting and promoting elements. Ekvall (1996) concluded that the climate of the organization is in the hands of the manager.

The type of environment (or climate) that is favourable to innovation might be one that involves participation, freedom of expression, and demanding performance standards (Bunce & West, 1995), which may include establishing norms for producing high quality work (West, 1996). Innovation theorists such as Amabile (1988) and Kanter (1988) suggest that climate may channel and direct both attention and activities toward innovation. Building on this notion, Scott and Bruce (1994) developed and tested a model arguing that leadership, workgroup relations and problem-solving style affect individual innovative behavior directly and indirectly through perceptions of a climate for innovation.

Group innovation. Many possible dimensions surface when innovation is viewed as an outcome of a workgroup. For example, quality of innovation can be evaluated according to the degree of radicalness, magnitude, novelty, frequency, effectiveness, or consistency. West and Anderson (1996) used these dimensions as criterion measures in a longitudinal study of innovation in the top management teams of 35 major hospitals in the UK. Within an input-process-outcome framework, these authors found that group processes best predicted the overall level of innovation among top management teams. However, the proportion of innovative team members predicted the degree to which the innovation was judged as radical. Contrary to conventional wisdom, the study found that resources did not predict innovation. Team composition primarily determined the quality (radicalness, novelty and magnitude) of team innovation, and social processes influenced the overall level of team innovation (West & Anderson, 1996). The finding is important because notions that resources, age, tenure and team size are more probable determinants of innovation are challenged.

In support of the contention that group processes are more influential than structural factors, Poulton and West's (1999) study of health care teams found that size and tenure did not predict effectiveness. However, team processes (shared objectives,

participative safety, shared quality emphasis in task orientation and support for innovation) accounted for 23% of the variance in teams' innovation. Further, shared team objectives were identified as the most powerful predictor of overall effectiveness.

The centrality of innovation to a team varies. For example, in health care teams, innovation is important albeit not explicitly the primary goal of a health care worker. In contrast, producing innovations is the principal purpose of the work of teams in universities, R & D organizations and high technology industries.

West and colleagues' (1998) studied the relationship among elements of the climate in universities and their success as measured by ratings of student numbers and external research grants. The study found that research planning and research quality was predicted more by prior performance than climate factors. In contrast, a study of relative innovativeness of R & D teams (Bain et al., 1999) showed stronger relationships between the four climate dimensions of the TCI and both individual and team innovation for research compared to development teams. These studies show that team type affects the relationships observed, how important climate is for innovation, and the effect of experience of being innovative on innovation.

When innovation is a goal such as in creative teams, Guastello (1995) suggests that leadership should be different to that of other teams as such teams require a development orientation. He proposed that a facilitative leadership style enables creativity in others and that such a style emerges from among the group members rather than residing in a remote person. He argued that the emergent form of leadership is more common than transformational leadership in problem solving groups. Guastello, (1995) concluded that creativity and imagination in the group occurs where the emergent leader both contributes ideas and facilitates ideation in others.

Extending this notion of facilitation further, Agrell and Gustafson (1996) present a model of the facilitating and inhibiting factors at three levels of analysis: individual, group and organization. At the group level, these authors argue that positive or facilitating factors may occur within three dimensions: structural, climate and member's beliefs in their team's potency. Structural factors include size and diversity, which comprises longevity, tenure, demographics and function. Climate variables are those proposed in West's (1990) theory. Group potency refers to the group's belief in its strengths and ability to innovate. Factors that inhibit innovation, according to Agrell and Gustafson (1996), are communication style and psychodynamic influences. The former inhibits innovation when the characteristic communication among members can be described as insensitive, intolerant, closed to ideas, argumentative, uninquisitive and unreflective. Psychodynamic influences operate below the level of consciousness and are tied to the "basic assumptions" of group members. Negative psychodynamic influences are revealed when members present neurotic behaviors and defensive routines (Agrell & Gustafson, 1996; Argryis, 1999).

Leadership is not identified as a group level construct in the Agrell and Gustafson (1996) model. Rather, leadership is nominated as an organization level variable. These scholars make an important observation that is relevant to this research program. They propose that leadership style should coincide with the four-factor model of group climate proposed by West (1990) to predict innovation (Agrell & Gustafson, 1996). Leaders of innovative groups are expected to be participative whilst exerting moderate control, to encourage and support new ideas, to develop objectives and visions, and to manage boundaries so that the group can work effectively.

Having considered innovation research from the antecedent perspective, I now examine leadership research from an outcome perspective. Much of this research has

focussed on the effectiveness of top management teams and, in particular, on leaders that have achieved organizational success (Bass & Avolio, 1994; Conger & Kanungo 1988; House, Spangler & Woycke, 1991; Howell & Avolio, 1993; Kanter, 1997; Keller, 1992; Shamir et al., 1998; Yammarino et al., 1993; Yukl, 1994). However, the field is troubled by difficulties in explicating influences at the group level of analysis from those at the individual or organizational level (Yammarino et al., 1993).

Recent research on Chief Executive Officer (CEO) effectiveness of top management teams in high technology firms in the United States (US) and Ireland (Flood et al., 2000) showed that leadership style both directly and indirectly affected consensus decision-making and team effectiveness. The study distinguished between four styles of leadership: authoritarian, transactional, transformational and laissez-faire. Transformational leadership was significantly and positively related to team effectiveness while the laissez-faire style of leadership exerted a significant negative influence on innovation. Another major finding of the study was that both authoritarian and transformational leadership predicted consensus decision-making in the top management team. As expected, transformational leadership had a positive effect whereas a negative effect was found in the case of authoritarian leadership. Furthermore, team effectiveness was significantly predicted by consensus decision-making (Flood et al., 2000).

To summarize, the factors measured by the TCI are group processes found to predict innovation (Anderson & West, 1996). Evidence exists for additional components of an innovative climate: participative and consensus decision-making, a high energy and enthusiastic workplace, facilitative and change-oriented leadership, prior performance, job factors, workgroup relations, idea time, individual factors and team composition. The psychological climate for innovation in workgroups is one in which norms that support

new ideas and innovativeness are nurtured (Anderson & West, 1996; Burningham & West; 1995; Ekvall, 1996; Schneider, 1990; West & Anderson, 1996; West & Farr, 1989).

Strong correlations exist between climate for innovation and leadership (Ekvall, 1996) that promotes inclusive processes, devolved decision-making, and high levels of enthusiasm and acceptance of new ideas at work. Therefore, if the organizational climate is to be supportive of innovation, the influence of leadership must be an explicit consideration. Having looked at innovation from the antecedent perspective and a consequence of leadership style, the next section examines leadership theories in terms of their conspicuous link to innovation.

Leadership Theories. Leadership theories suggest particular leadership styles are required in contemporary organizations to encourage employee effort and creativity under conditions of change and uncertainty. Charismatic or transformational leaders possess certain characteristics that enable them to have remarkable effects upon followers (Bass, 1985; Conger & Kanungo, 1992; Howell & Avolio, 1993). Prominent among these characteristics is an expressive verbal communication style that generates excitement in followers, a high level of self-confidence, a depth of concern for others, a recognition of other's needs and the ability to perceive other's reactions accurately and quickly (Henley, Pearce, Phillips & Weir, 1998). Leaders possessing such qualities are able to inspire innovation in others and have a stronger positive impact on followers compared with other types of leadership (Bass, 1998, p. 260; Baron, 1996; Yammarino et al., 1993).

Creativity, innovation and exceptional performance are a consequence of inspirational or charismatic leadership because theoretically transformational or charismatic leaders engage followers' affective and cognitive processes and thereby generate an environment of excitement (Berlew, 1974). In support of this notion, Howell and Avolio's (1993) study of 78 managers found that transformational leadership

positively predicted business performance over a one-year interval. Similarly, a study of female nursing leaders found leader effectiveness to be positively related to transformational leadership but negatively related to a fault finding management style (Bycio, Hackett & Allen, 1995).

Leadership and Innovation. Exceptional leadership is associated with successful organizational innovation according to case study research (Kanter, 1983). Being innovative implies extra efforts to generate something new or novel. Accordingly, Berlew (1974) proposed that organizational excitement or finding excitement and meaning in work underpins organizational innovation. He suggested three stages of leadership: custodial, managerial and charismatic. Confronting change and innovation with excitement, Berlew (1974) argued, requires the influence of a Stage Three or charismatic leader. Taking a similar approach, House (1971) proposed a two-factor model in which task or instrumental leadership behavior serves to achieve productive outcomes for the organization whereas social-emotional leadership determines the leader's relationships with subordinates. However, these dimensions of leadership do not explain why some leaders inspire people to rise above mundane concerns and become unified in pursuit of objectives that extend the individual to levels of performance that exceed expectations (Gardner, 1965). Few leadership theories integrate both positive and negative styles of leadership. Such integration is important when considering leadership in relation to criteria such as effectiveness or innovation as it is only by comparing leadership styles that it is possible to ascertain differential effects on the criterion.

Integrating Active and Passive Leadership Styles. In contrast to many leadership theories, Bass and Avolio (1994) and Avolio (1996) developed a model that integrates both active and passive leadership styles. In doing so, they provide a framework for conceptualising leadership in terms of both active-passive and effective-ineffective

continua within a defining context or situation. Five major types of leadership are incorporated into their Full Range Model of Leadership (Bass & Avolio, 1994): Laissez-faire, Management by exception (passive), Management by exception (active), Constructive transactions, and Transactional.

Laissez-faire leadership is the most passive form of leadership and is characterized by avoidance leadership and abdication of responsibility. The less passive, *Management by exception (passive)*, focuses on mistakes and waits for errors to emerge before taking action. Moving to more active styles, *Management by exception (active)*, is characterized by searching for errors and taking active steps to correct them before they occur. The more positive *Constructive transactions or Contingent reward* sets up an exchange situation between leader and follower where rewards are provided in response to the achievement of *a priori* agreed outcomes. Within the Full Range Model of Leadership, the *Transactional leadership* style is usually derived from combining contingent reward and management by exception (Bass, 1998).

Transformational leadership is defined by four elements (Bass, 1998; Bass & Avolio, 1994): idealized influence, inspirational motivation, intellectual stimulation and individualized consideration.

Idealized influence (or behavioral charisma or charismatic leadership) is evidenced where leaders display high standards of ethical and moral conduct and become role models for employees. These leaders are trusted and highly respected and, although willing to take risks, do so in a consistent rather than erratic way. *Attributed charisma* occurs where leaders are perceived by followers to display extraordinary capabilities.

Inspirational motivation involves motivating and inspiring people by providing meaning and challenge in relation to work. The leader's ability to define and communicate a clear vision encourages team spirit and 'esprit de corps' as members enthusiastically

work towards a goal to which they all aspire – a feature observed commonly among military and sporting teams. In factor analytic studies, idealized influence and inspirational motivation usually combine to form a single factor, *charismatic-inspirational leadership* (Bass, 1998).

Intellectual stimulation involves provoking followers to enquire about their work and challenge the ways things are done even when at the peak of success. Followers feel safe to put forward new ideas and experiment with creative solutions to old and new problems although they may be at odds with those of others, including the leader. Above all, innovation is encouraged and supported.

Individualized consideration is experienced by followers as concern for, and knowledge of, what is important for them as individuals. Interactions are personalized and new opportunities created. Such consideration helps followers to develop and achieve their full potential and performance through delegation of tasks and responsibilities that enable growth and development. These components of transformational leadership, as argued later, can be viewed as parallel to West's (1990) model of group innovation, namely, climate for excellence, vision, support for new ideas and participative safety respectively.

Notwithstanding Guastello's (1995) comments that facilitative leadership emerges from among the group and enables creativity in others, Bass (1998) states that being a transformational leader does not imply that all interactions with followers are participative. Transformational leaders may also take an authoritarian stance should the situation require it (Bass, 1998). For innovation, a blend of authoritarian and participative styles of leadership may be appropriate. Indeed, West and colleagues (2001, p. 266) found that centralized decision-making at the strategic level (authoritarian) was required to ensure innovation was a strategic goal of the organization. A more decentralized and participative approach was needed amongst workgroups for building the innovative potential within the

company. In contrast, and as discussed earlier, Flood and colleagues (2000) found an inverse relationship between authoritarian leadership and innovation. At this stage, it seems that results are equivocal on the relative effects of these styles of leadership on innovation. The time or stage in the innovation process may, however, be an important covariate of leadership style.

Bass, Avolio and Jung (1995) developed and refined a measure incorporating the five leadership styles of Avolio (1996) and the elements of transformational leadership proposed by Bass and Avolio (1994). Since its development, the MLQ (Bass & Avolio, 1997) has been widely reported in research studies, leadership development programs (Bass & Avolio, 1994), publications and dissertations (Bass, 1998).

Parry and colleagues' research (1996, 2001) employed the MLQ and considered it to be appropriate for the Australian and New Zealand contexts. A focus on cultural considerations in recent years has resulted in scholars from Australia (Carless, Wearing & Mann, 2000) and the UK (Alimo-Metcalfe & Alban-Metcalfe, 2001, p. 262) developing new measures of transformational leadership. However, the latter scales do not include a range of leadership styles, which is an important matter when considering the differential effects of leadership on a particular outcome.

Adopting the leadership typology proposed by Bass and Avolio (1994), a positive relationship would be expected between transformational leadership and a climate that supports innovation. Conversely, a negative (or no) relationship would be expected between innovation and a non-transformational style of leadership, particularly a leadership style that is fault finding (management by exception) or that abdicates responsibility (laissez-faire)

Summary of Research on Leadership and Innovation. The previous review of theoretical models suggests that leaders perceived as charismatic or transformational will

be effective in providing the necessary stimulus, motivation and encouragement to inspire innovation among followers. Nonetheless, where leaders adopt a transactional style, innovativeness may result from clear structures, rewards, supports and clear employee role expectations. Supportive and participative styles of leadership nurture innovation through managing relationships and boundaries, and providing resources that enable innovation. Leaders using these styles ensure that their group members are involved in issues that are important and can focus on the creative task unencumbered by irrelevant duties.

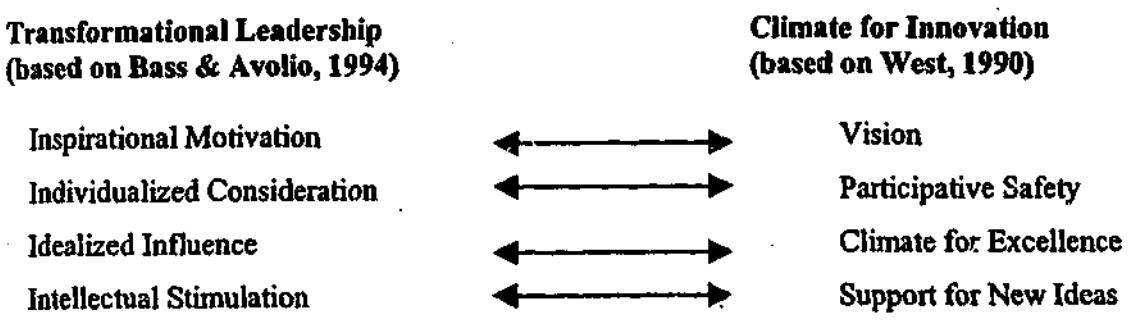
This chapter has reported on research that indicates a positive relationship between innovation and supportive or facilitative (Guastello 1995) and transformational leadership (Howell & Avolio, 1993). The review was not able to identify many studies that compare a range of active-inactive or effective-ineffective styles of leadership in terms of their differential effect on innovation in workgroups (Flood et al., 2000). In particular, the effect of non-supportive and non-transformational leadership styles on innovation has received little research attention. Therefore, the thesis research aims to address these deficits in the literature by comparing the influence of supportive and transformational management by exception and laissez-faire leadership styles on team climate for innovation in workgroups.

Leadership and Group Innovation Synergy. By integrating conceptual models of leadership and innovation, this research will argue that transformational leaders promote and encourage innovation in others. This is a logical conclusion as it appears that the antecedents posited to facilitate innovation are analogous with the characteristics and consequences of transformational leadership. Together, the theories of transformational leadership and group climate for innovation provide the framework for establishing a theoretical link between leadership and innovation through a defining context. Figure 5 illustrates the proposed conceptual pathway for the leadership-innovation process.

Figure 5: Proposed Relationship between Transformational Leadership and Team Climate

In order to identify synergies between the theories of transformational leadership and climate for innovation, concepts were paired according to their similar meanings. This process resulted in the construct alignment shown in Figure 6. The first dimension common to the two theories is climate for excellence (idealized influence). That is, when leadership influence is gained through gaining trust, respect and confidence, setting high standards of conduct and providing a role model, then the group will share an orientation for excellence in task performance. The second dimension common to the two theories is vision or support for team objectives (inspirational motivation). This means that in the presence of a leader who inspires and motivates by articulating the future desired state and a plan to achieve it, the group is likely to share a common vision and develop shared common objectives. The third dimension common to the two theories is support for new ideas (intellectual stimulation). In other words, a leader providing intellectual stimulation (which involves questioning the status quo and continually innovating, even when at the peak of success), creates an environment where there is group support for new ideas and innovation. The fourth common theoretical dimension is participative safety (individualized consideration). Leaders who energize people to develop and achieve their full potential and performance will generate a climate where group members feel safe to participate and contribute to decision-making. Analogous pairs of theoretical constructs have been aligned as in Figure 6. Clearly, there are other possible alignments given the broad theoretical descriptions of four dimensions of transformational leadership (See Bass, 1998).

Figure 6: Conceptual alignment among constructs in MLQ and TCI



The research presented in this thesis aims to establish which leadership style is most conducive to innovative practice. Team climate for innovation, which is a composite of team orientation, support for new ideas, support for team objectives and team participation (participative safety), is chosen as the criterion because prior research shows a strong connection between team climate and innovation (Ekvall, 1996).

This research aims to test whether comparing the relationship among leadership styles and climate for innovation will demonstrate: (1a) a strong positive relationship between transformational leadership and climate for innovation, (1b) a negative (or no) relationship between laissez-faire leadership and climate for innovation, and (1c) in accordance with Bass and Avolio's (1994) theoretical model, there will be a decreasing effect on climate for innovation according to leadership style, so that transformational leadership will have the strongest positive relationship, followed by the transactional style, management by exception active and passive, with the least positive effect being associated with the laissez-faire style of leadership.

Summary

This chapter opened with the argument that the elements of West's (1990) conceptual model of group innovation fail to address the influence of leadership. On the other hand, theories of transformational leadership suggest that innovation is an outcome of particular leadership behaviors. From an analysis of both theoretical models and

measures of leadership and innovation, synergies among constructs and components of the theories of innovation and theories of leadership were extracted. From this integration, it is possible to assert that leadership and group climate for innovation are two sides of the same coin.

However, two questions remain to be resolved. First, if leadership is important for innovation, then is the effect directly on innovation or through exerting influence on group processes? Second, if group processes, climate and leadership factors are important for innovation, what is the relative impact of each and how do they work together in achieving innovative outcomes in organizations?

Based on this literature review, the starting point for clarifying these questions within this thesis will be to operationalize the innovation construct within the organizational context. This includes: (1) extending the notion of climate for innovation formed by group processes; (2) incorporating leadership into the climate for innovation concept; (3) theorising where groups and leaders exert influence on actual innovations, and (4) producing a new model of climate for innovation.

Chapter 4: Model Development

As noted in the previous chapter, the synergies between transformational leadership and group innovation lead to a theoretical argument that both group climate for innovation and transformational leadership should result in innovation. What is left unclear is whether one affects the other or if both occur simultaneously to result in an innovative outcome. This chapter will begin with a brief review of existing theories and prior research dealing with the leadership role in innovation, and will follow with a review of theory relating to innovation from which a number of hypotheses will emerge.

Determining the factors conducive to innovation is relevant for achieving both economic and human relations goals in organizations. Innovation is a significant feature of health care as the constant flow of new technologies and treatments require staff not only to adapt to changes but also to actively discover new solutions for all aspects of the healthcare system (Parker, Wubbenhorst, Young, Desai & Charns, 1999).

Innovations, whether clinical, administrative or technological, occur frequently and are critical for successful performance in the health care industry (Kaluzny, Konrad & McLaughlin, 1995; Savitz, Kaluzny & Silver, 2000; Schneller, 1997). How those innovations are adopted, diffused and whether they accomplish benefits is less clear (Henley et al., 1998; Savitz et al., 2000b). Although methods for the diffusion of effective clinical process innovations (Savitz et al., 2000a), quality improvement (Kaluzny et al., 1995; McLaughlin & Kaluzny, 1997) and treatments have been developed, minimal research has been conducted on the effectiveness of administrative innovations, which are the focus of this research (O'Neill et al., 1998).

Administrative innovations are targeted at both structural and cultural changes in organizations (Abrahamson, 1991, 1996; O'Neill et al., 1998). Two common strategic

interventions for facilitating administrative innovations focus on (a) developing leadership capacity and (b) devolving responsibility to the workgroup to find new and improved ways of working (Kirkman & Rosen, 1999). Though often employed separately, this chapter argues that both interventions are part of one overall strategy to ensure that innovations achieve their potential benefits.

Leadership and Innovation

Inspirational theories of leadership are most relevant for innovation, included among which are transformational or charismatic notions. These notions build upon Burns' (1978) conceptualization, which indicates that transformational leadership can have extraordinary effects on followers, lifting their performance to an unexpected level and eventually changing social systems (Bass, 1985; Conger & Kanungo, 1988; House, 1977, 1995). In accordance with charismatic leadership theories, the altruistic intentions of the leader stimulate the creative potential of followers by enabling follower autonomy, self-direction and personal development (Bass, 1985; Burns; 1978; Conger, 1992; Howell & Avolio, 1993). The leader characteristics that induce these responses in followers include an expressive and non-verbal communication style. Charismatic leaders are able to formulate a vision and communicate it to others, and by doing so illustrate to others a range of new possibilities that stimulate the intellect and motivate others to achieve the vision. Transformational leaders show qualities such as a high level of self-confidence, a depth of concern for others and recognition for other's needs. Further, they have the ability to perceive other's reactions accurately and quickly (Bass, 1985; House & Singh, 1987).

Charismatic and transformational theories, however, focus on dyadic relationships rather than group and organizational outcomes (Shamir et al., 1998). Indeed, there is limited theoretical explanation of the leadership of innovative groups in organizations (Guzzo, Yost, Campbell & Shea, 1993; Kanter, 1983; West, 1996).

Leadership affects a range of group effectiveness measures including profit margins, follower performance, project quality and acceptance of change (See Bass & Avolio, 1994; Hay & Härtel, 2000; Keller, 1992; for meta-analytic reviews see Fuller, Patterson, Hester & Stringer, 1996; Lowe, Kroeck & Sivasubramanian, 1996; Sosik, Avolio & Kahai, 1997). Others argue against identifying any particular leadership style to promote innovation. Most noteworthy is Glassman's (1986) claim that no single leadership style can be used to apply to all situations where innovation is sought. Rather, the style has to be modified according to the capacity for self-direction demonstrated by the subordinates (King, 1990), a viewpoint consistent with situational leadership theories (Yukl & VanFleet, 1992). Notwithstanding the latter arguments, theoretically, transformational leadership is predicted to have positive effects on innovation, and group process variables are implicated as mediators. Although there is extensive research on leadership, there are few studies examining intervening processes, which is necessary to enhance understanding of how to lead groups to perform (Guzzo, 1996).

A review of research on transformational leadership, transactional leadership, locus of control and support for innovation revealed that transformational leadership was associated with a higher internal locus of control and business unit performance over a one-year interval (Howell & Avolio, 1993). Similarly, a study of female head nurses found a positive relationship between leader effectiveness and transformational leadership and a negative relationship with management by exception (Bycio et al., 1995).

Individual innovation, leadership, individual problem solving style and group relations were also found to affect innovative behavior (Scott & Bruce, 1994). Along similar lines, but at the group level of analysis, Maier (1970) proposed a set of principles for the leadership of innovative groups. After extensive laboratory studies, Maier (1970) concluded that such leaders take a primary role in managing the group process to establish

a work environment conducive to innovation. The leader's active role in the group in Maier's formulation contrasts with a more recent theory of group innovation (West, 1990). Namely, unlike Maier, no explicit reference to leadership is made and the emphasis, like other studies, is placed on the group process.

From these studies it is evident that most charismatic or transformational leadership theories incorporate comprehensive measures of individual followers' emotional and motivational responses both to the leader and the work situation (House & Singh, 1987); but research at the group level has been largely atheoretical (Shamir et al., 1998).

Given the theoretical capacity of transformational leadership to induce high levels of excitement and enthusiasm in groups of followers (Berlew, 1974), the assumption can reasonably be made that followers or subordinates will experience high levels of morale (Shamir et al, 1998). Morale has been given relatively little attention as a facilitating factor in group performance, although it is a term frequently cited in the industrial relations and human resource literatures (Allan, 1998).

In the military, morale has been identified as important during war time and studies show that units with high levels of cohesion, esprit de corps and morale perform better (Motowidlo & Borman, 1978; Solomon et al., 1986; Shamir et al., 1998). Most definitions of morale make reference to satisfaction, motivation, high energy and enthusiasm at the individual or group level (Motowidlo & Borman; 1978). Often, descriptions of morale allude to a sense of common purpose or goals (Locke, 1976) and group cohesion and identification (Shamir et al., 1998). Cohesion is frequently linked with transformational leadership and teams (Avolio, 1996; Carless et al., 1996) or leadership of military units (Shamir et al., 1998).

Teams, defined as individuals who work interdependently to solve problems or carry out work (Härtel & Härtel, 1997; Manz & Sims, 1993), are fundamental to health

care delivery (Berwick, 1998). Parallels can be drawn between military and health personnel. Both are involved in work teams that are in highly-charged, time-pressured and complex work settings where they hold responsibility for the health and well-being of others. Similarly, both groups have historically similar management structures that depend on formal authority allocated through seniority and professional experience and expertise. Because the health field shares the high demand situation of active military service, it is likely that morale will also be important for performance in health care settings.

Taken together, these studies suggest that transformational leaders are skillful in developing followers' commitment to a vision, are able to stimulate excitement and enthusiasm in followers to achieve that vision, and are able to use their influence on others to improve organizational performance. Therefore,

Hypothesis 1: Transformational leadership will be directly associated with high morale in workgroups.

Innovation Perspective. In accordance with the definition proposed by West and Farr (1990), innovation embraces both the generation and introduction of a new idea or process and, while being commonplace in one part of an organization, may be new to a particular group within that organization (West & Farr, 1990). Innovation research largely falls into two categories, the process approach and the antecedent or situational approach (for review of innovation and creativity processes at work see Amabile and colleagues, 1983, 1987, 1988, 1996; Rogers, 1983, 1995).

A distinction is made between *antecedent* and *process* approaches, the former is much more common and tends to follow a variance approach and be cross-sectional in design. It is concerned with identifying facilitators and inhibitors of innovation. Process research, on the other hand, is either historical or longitudinal and uses more qualitative, case study methods to study the sequence of events that constitute the process of

innovation (King, 1990; Shroeder, Van de Ven, Scudder & Polley, 1986). In my study, a mix of antecedent and process approaches were adopted, in that the program examines precursors of innovation over a three-year period. However, processes such as how innovations were diffused were not the focus of the program. The focus of interest was in the *implementation* of innovations within a workgroup rather than their *institutionalization* across the organization. The rationale is that groups are likely to produce innovations uniquely applicable to their specialization (e.g. medical imaging, maternity wards, pharmacy, operating theatre, social work), which may not be generalizable to other units.

This approach differs from that of Savitz, Kaluzny and McLaughlin (2000) in their research of clinical process innovations. These authors make reference to facilitators, inhibitors and processes and argue that either alone is inadequate to understand the way in which innovations are implemented and institutionalized.

A large number of situational antecedents have been implicated in individual innovation. Examples include participative decision-making, discretionary control, role clarity, autonomy, clear objectives, intellectual stimulation and a supportive climate (Burke & Litwin, 1992; Burningham & West, 1995; Farr & Ford, 1990; Glassman, 1986; Hosking & Anderson, 1992; Miller & Monge, 1986; West, 1987).

Within this large literature, a number of studies have suggested leadership as an important precursor of innovation (Kanter 1983, 1988). For example, leaders holding high expectations for team members have teams that are more successful at completing challenging assignments, which strengthens the team's experiences (Burpitt & Bigoness, 1997). Leaders who are supportive, facilitative (Guastello, 1995; King, 1990), transformational or creative (Kanter, 1983, 1988) are considered to be effective at generating group innovation. The leader's role is to support and motivate followers and enable them to innovate. By attending to such matters as clarifying roles, setting

objectives, obtaining resources and managing relationships with others with whom the group must interact, leaders make the environment conducive to creativity (Ayoko & Härtel, 2000; Lovelace, 1986). These antecedents of innovation are clearly synonymous with the characteristics and behaviors of transformational leaders (Avolio, 1996; Bass, 1985). Similarly, Maier's (1970) formulation for leadership of innovative teams is congruent with the transformational paradigm. From the perspective of innovation, it is argued that there are conceptual similarities between impacts of transformational leadership and the antecedents of innovation. In other words, the antecedents of the innovation model juxtapose with the transformational leadership model at the level of the group process. It is theoretically clear, from both perspectives, that transformational leadership should predict innovation among subordinates by acting upon group processes rather than directly on the innovation outcome. Thus, it is hypothesized that:

Hypothesis 2: Leadership will directly affect group process, which in turn, affects innovation. That is, the relationship between leadership and innovation will be indirect, being mediated by group process.

Innovation in health care teams. West's (1990) theory of group innovation, introduced earlier, argues that a climate for innovation can be stimulated through a combination of four group processes. These processes include: support for new ideas; clear objectives (Support for Team Objectives); norms for excellence (Team Orientation); and participative safety among group members. Theoretically, then, four social processes are required for innovation to occur. Some empirical support for the model is available (Anderson & West, 1996; Burningham & West; 1995; West & Anderson, 1996; West & Farr, 1990; West & Wallace, 1991) (See Chapters 2 and 3).

The study of the antecedents of innovation has been largely atheoretical (King, 1990), with West's (1990) group theory of innovation being the notable exception.

However, theories of innovation processes are more common (Amabile, 1986; Rogers, 1983). An extensive literature exists on individual, group and organizational innovation (See Amabile 1983, 1988; Damanpour, 1987, 1988; Kanter, 1988; Van de Ven, 1986; West, 1997; West & Farr, 1990). Moreover, West and colleagues in Europe have conducted a significant proportion of innovation research on health care (Burningham & West, 1995; West & Altink, 1996; West & Anderson, 1996; West & Farr, 1990; West & Wallace, 1991). A literature search, however, did not produce any published studies examining the longitudinal impact of leadership on innovation in health care teams.

West's (1990) model does not address the role of the leader nor group morale in the achievement of an innovative climate. Their omission is paradoxical as West and Farr's (1989) extensive literature review also argued the importance of participative leadership and cohesion for innovation. Further, studies of transformational leadership consistently show a link between this type of leadership and high follower morale (Shamir et al., 1998). Indeed, subordinates of such leaders are characterized by their effort, commitment, satisfaction, motivation, high performance ratings, high trust in their leaders, pro-social behaviors, cohesion, potency and innovation (Bass; 1990; Bass & Avolio, 1997; Carless et al., 1996; Howell & Avolio; 1993; Lowe et al., 1996; Shamir et al., 1998, Yukl, 1994). By integrating the two approaches to innovation, as this study advocates, it would be expected that a group with a transformational leader will experience high morale as well as the group processes congruent with those specified in West's (1990) theory, which will in turn, lead to innovation. Therefore,

Hypothesis 3: Workgroup climate processes will mediate the effects of leadership on innovation.

Innovation in Health Care. Health care organizations are dynamic changing entities that seek to understand and improve leadership capacity among clinicians and

administrators (Schneller, 1997). Teams are seen as key to solving organizational problems and improving work processes in a climate of continuous quality improvement and innovation (Berwick, 1998; Parker et al., 1999; West, 1996). Both leadership and teams are viewed within health care organizations as a means to encourage new ideas and achieve innovations to improve business outcomes (Avolio, 1996; Manz & Sims, 1987; West, 1997). Few studies, however, provide unambiguous evidence of their direct relevance to innovation, which is necessary to guide strategic human resource management interventions, business process and clinical interventions in the health care sector. This chapter contributes to this gap by offering an integrative framework that informs strategic cultural interventions to promote innovation.

International Perspective. A final point is made from the work reviewed to date. The majority of studies of transformational leadership have been conducted in North America and the study of group climate for innovation in healthcare has mainly emerged from research out of the UK. This raises questions about the generalizability of research findings to cultures outside the respective settings. This research contributes to answering that question by assessing whether the findings apply to the Australian context. Australian researchers have begun evaluating the generalizeability of the transformational leadership paradigm to local managers (See Carless, 1998; Carless, Mann & Wearing, 2000; Parry, 1996) and specific research programs are currently progressing on the role of leadership in the success of project and research and development teams (Bain, Mann & Pirola-Merlo, 1999).

Summary. The research reviewed in this chapter suggests that to achieve innovation in workgroups, certain targeted social interactions are required. It is proposed that the psychological conditions for innovation are met when a group has a transformational leader, high morale and a positive team climate. It is proposed further that

research aimed at understanding innovative performance in groups must simultaneously focus on both proximal leadership and group processes rather than leadership being an assumed, but distant, influence on the group process.

The question remains then, as to whether leadership or group processes have the most significant effect. In other words, which comes first - leadership or group climate for innovation? Does leadership impact on the group climate for innovation or is the effect directly on the performance of followers? Furthermore, when comparing leadership styles, is one better than another at influencing people to be innovative and is that leadership style more important or less important than the group climate for stimulating innovation. An examination of the relative impact of both leadership styles and group climate on implemented innovations may provide insight into these questions.

Conclusion

In this chapter, I developed a model depicting the relationship among transformational leadership climate for innovation and implemented innovations. Specifically, I argued that transformational leadership impacts on workgroup morale more strongly then any other leadership style. In making this link, I contended that, theoretically, transformational leadership provides the antecedent conditions for establishing high morale work climate that is conducive for implementing innovation in the workplace. Finally, I proposed a model for the way in which transformation leadership influences the group climate to generate and implement innovations in a work setting.

In conclusion, the preceding discussion has produced three main assertions as the foundation for the thesis. First, support for new ideas is a key indicator of innovative work climates, and determinants of support for new ideas are supportive leadership, participative decision-making, commitment to shared objectives (Glew, O'Leary-Kelly, Griffin & Fleet, 1995) and a high morale workforce. Second, transformational leadership, relative to other

styles of leadership, is predicted to influence innovation because theories of transformational leadership and innovation have common conceptual routes. Although both antecedents should theoretically predict innovation, their relative contribution in field studies remains elusive. Finally, if leadership, specifically transformational styles of leadership, influences climate for innovation, then this will be evidenced in terms of the impact of innovations on the target group. The arguments I have made to this point, while grounded in evidence from both theory and research, have not been substantiated through applied research. Such examination is critical for extrapolating from theory to practice, and it is one of the contributions that this thesis makes.

Chapter 5: Study 1

Research Aims of Study 1

The research presented in this chapter is the first of the three empirical studies. Study 1, examines how support for new ideas are generated at work. This chapter has three aims. First, to provide a preliminary examination of the importance of leadership as an antecedent of support for new ideas. Second, to explore the potential of elements of organizational climate including supportive leadership, participative decision-making, and support for team objectives to determine support for new ideas. The third aim is to examine the effect of leadership on support for new ideas over time. Study 1 answers the question, "Does supportive leadership influence climate in such a way that support for new ideas emerges and endures in the future?" To achieve this aim, a longitudinal survey study was conducted in a hospital experiencing significant organizational change.

Study 1

The purpose of this study was to provide evidence regarding the role of the leader in supporting employees' ideas and innovations. Leaders are expected to instigate the idea generation process but previous research has either not provided unequivocal support for this contention or not addressed the question at all. This research reports on the results of a longitudinal study investigating the role of leadership in increasing support for new ideas in the workplace. The study takes support for new ideas as an indicator of innovation because West and Anderson (1996) found it to be a key predictor of innovation among leadership teams. Holding support for new ideas as the target, the study integrates theoretical concepts of the leadership innovation link with research findings on antecedents of innovation.

The proposal that leadership is an essential precursor of innovation has been made by a number of scholars from the fields of both leadership and innovation. For example, Kanter (1997) identifies managers as both innovators and inspirers of innovation in or through others. Similarly, those researchers pursuing an innovation theme identify leadership among the possible or probable antecedents (Dess & Picken, 2000; Scott & Bruce, 1994). Other authors, however, do not identify leadership as particularly prominent and suggest that climate factors other than leadership are more central among the range of antecedents for innovation support (Anderson & West, 1998; Bain, Mann & Pirola-Merlo, 1999). The obvious next step is to integrate both streams of enquiry and include leadership as well as other known antecedents in considering the growth process of new ideas. The aim of the research was to clarify the importance of leadership relative to other climate factors for creating such an environment.

Method

Research Site and Context. The health facility in which this longitudinal research study was conducted was undergoing a five year planned program of development and change under the direction of a new CEO. The program was driven both by the CEO's vision and in response to the increasing drive for economic performance accountability by central government. As part of the program, there was to be a merger with a much larger and major teaching facility, a review of all clinical services and business processes, and the introduction of major new technologies and systems. A 950-bed facility, which combined the two old hospitals, was being constructed on the same site involving major logistical and operational disruptions across the campus. The hospital was built in 1939 and is a publicly funded 200-bed facility (with some private beds) in Northeastern Australia. It is a metropolitan teaching hospital specializing in women's health and childbirth as well as intensive care for neonates and women's gynaecological disorders.

The organization needed to develop the capacity to find new and improved ways of working in an environment that posed threats to services, roles and comfort zones. It was clear that employees from all levels would be required to take responsibility for many elements of the change process. An organizational improvement initiative was established with the researcher as project manager. A key part of the initiative was a diagnostic process, which involved the application of a range of quantitative and qualitative information to measure the current situation. Employee opinion surveys were used to establish understanding about the current climate for innovation and acceptance of new ideas and to provide baseline data against which future interventions would be evaluated. Following the diagnostic process, targeted interventions were developed and implemented. The survey diagnostic process is explained in the next section.

Sample. A field study was used to assess the impact of leadership and participative decision-making on support for new ideas, and to estimate the mediating role of morale and objectives (vision). The study was conducted in one organization in order to prevent confounding effects of different organizational influences.

All staff members were surveyed, which represented a total of 45 workgroups with an average size of 11.38 members. The sample comprised mostly hospital-based clinical staff and included mixed professionals and administrative staff. The mean age of the sample was 40.3 years and 80% of individuals were females.

Procedure. The survey was developed through collaboration and feedback with staff to ensure ecological validity. The survey was distributed to 917 employees of the health facility in 1996 and 955 employees in 1997. The response rates were 61% and 54% respectively. Full data for all the variables in the analysis from both years were available from 277 of the employees.

Surveys were individually coded and addressed personally to each participant to allow for longitudinal analysis at the individual, group and departmental levels. Surveys were distributed to each work area by line managers and change agents and posted to staff on leave. Each survey package included a letter from the CEO explaining the purpose of the survey and the feedback mechanism. Surveys were completed during work hours if preferred and follow-up communications were implemented to encourage participation. Completion of the surveys was entirely voluntary and confidentiality was assured by ensuring that surveys were returned directly to the university via an anonymous addressed envelope.

Measures. Morale, leadership, participative decision-making, team objectives and new ideas were measured using a survey distributed to all staff in 1996. Support for new ideas and innovation was measured in the 1997 survey. The variables were measured using either 7- or 5-point Likert type scales.

Morale. Workplace morale refers to a group level phenomenon and was derived from the Queensland Public Agency Staff Survey (QPASS) (Hart, Griffin, Wearing & Cooper, 1996). Morale was measured by averaging five items that accessed positive feelings relating to work from the 1996 survey (Cronbach's alpha = .85). An example item is, "There is good team spirit in this workplace" (1 = Strongly Disagree; 5 = Strongly Agree).

Supportive Leadership. Supportive leadership was measured using five items from the climate scale of the QPASS (Hart et al., 1996). The items assessed the degree to which managers were approachable, dependable, supportive, knew the problems faced by staff, and communicated well with them. An example item is, "The managers in this workplace can be relied upon when things get tough" (1 = Strongly disagree; 5 = Strongly agree). The five items were averaged to provide a summary scale with a Chronbach's alpha of .83.

Participative Decision-Making. Participative decision-making was derived from the QPASS instrument and was measured by averaging four items covering the degree to which staff were asked to participate in managerial decisions and were allowed to express their views (Alpha = .76). An example item is, "I am happy with the decision-making processes used in this workplace" (1 = Strongly disagree; 5 = Strongly agree).

Support for Team Objectives. Support for team objectives was derived from the TCI (Anderson & West, 1996) and was measured by averaging 11 items that accessed the extent to which team members supported the objectives of their team (Alpha = .96). An example item is, "How worthwhile do you think these objectives are to you" (1 = Not at all; 4 = Somewhat; 7 = Completely).

Support for New Ideas. Support for new ideas was measured by averaging eight items from the TCI that assessed the degree to which participants viewed their team as being supportive of change and new ideas (Alpha = .94). An example item is, "In this team I take the time needed to develop new ideas" (1= Strongly disagree; 5= Strongly agree).

Results

Analysis. Analysis of these data was performed using structural equation modelling (SEM) using the EQS program (Bentler, 1988). The first model estimated depicted support for team objectives and morale as completely mediating the effects of supportive leadership and participative decision-making on support for new ideas. Following this, two additional models were estimated which included both a direct and a mediated effect of supportive leadership and participative decision-making on support for new ideas. These models allowed an analysis of a partial mediation hypothesis.

Correlations, means and standard deviations of the variables involved in the analysis are presented in Table 1. A brief examination of the correlation matrix shows that supportive leadership and participative decision-making were correlated with support for

new ideas in the following year, however, as expected, correlations were higher for the hypothesized mediator variables. The predictor and mediator variables also shared significant variance. On the basis of these results it was decided to continue with the structural equation model.

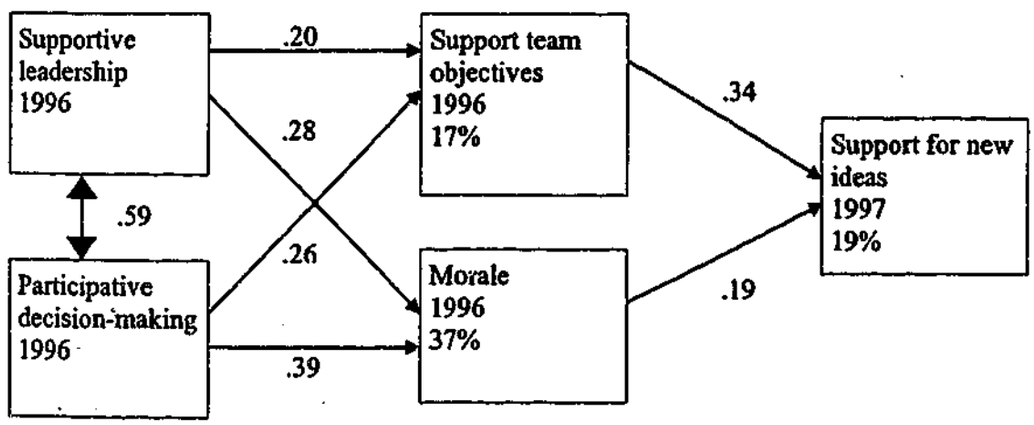
Table 1: Means, standard deviations and correlations between variables in the study

Variables	Mean	SD	1.	2.	3.	4.	5.
1. Support for new ideas 1997	3.23	.895	-				
2. Supportive leadership 1996	3.00	.972	.12*	-			
3. Morale 1996	2.90	.935	.33**	.52**	-		
4. Participative decision-making 1996	2.56	.908	.32**	.60**	.56**	-	
5. Support for team objectives 1996	4.59	1.364	.41**	.35**	.41**	.38**	-

* p<.05 ** p<.01
n = 277

Structural Model. The hypothesized model was estimated using EQS. The results of the analysis are shown below in Figure 7. All parameter estimates are significant at p<.05.

Figure 7: Estimated model of antecedents of support for new ideas



The mediating variables accounted for 19% of the variance in support for new ideas in 1997, with support for team objectives having the largest effect. Together, supportive leadership and participative decision-making accounted for 37% of the variance in morale, and 17% of the variance in support for team objectives. The relatively small percentage of variance accounted for (in support for team objectives) suggests that variables additional to those in the analysis may be important for ensuring support for team objectives.

Model fit indices provide a summary of how well the proposed model fits these data. For this model they were very encouraging. The Bentler-Bonnet Normed Fit Index (NFI) was .92, and the Comparative Fit Index (CFI) was .93. It should be noted that the chi-square for this model was 30.68 based on 3 degrees of freedom, which was highly significant. With large sample sizes, however, the chi-square is a very sensitive test of the model fit, and a better indication of fit can be gained from the NFI and the CFI. By these criteria, the model fits very well indeed.

In order to test for a direct effect of supportive leadership and participative decision-making on support for new ideas, two additional models including these effects were estimated. Adding a direct effect of participative decision-making decreased the chi-square by 4.08 for the loss of one degree of freedom. This decrease was not significant at $p<.01$, and so the path was not added. The percentage of variance accounted for in support for new ideas increased by only 1%.

The direct effect of supportive leadership was also evaluated. After adding a path from supportive leadership to support for new ideas, the chi-square decreased by 5.19 for the loss of one degree of freedom. This change was not significant at $p<.01$, and so the path was not considered. In addition, the percentage of variance accounted for increased by only 1%.

On the basis of these findings, it can therefore be concluded that the originally hypothesized model provides a parsimonious fit to the data. The model indicates that supportive leadership, in combination with participative decision-making, will be associated with high levels of morale and support for team objectives. High levels of morale and support for team objectives were then able to account for a significant proportion of variance in support for new ideas in the following year. That these variables have an effect on support for new ideas in the following year establishes an unambiguous causal flow and means that the substantive results are unlikely to be due to common method variance.

Discussion

The study concluded that supportive leaders who adopt a participative decision-making style will increase support for new ideas in the workplace by increasing team morale and support for team objectives. Because the results derived over a time period of two years, the findings suggest that leaders who invest energy to build morale in the workplace can create an environment for the future generation of ideas.

The findings of the study indicate that supportive leaders who adopt a participative decision-making style will increase support for new ideas among employees by increasing their morale and increasing support for team objectives. The findings provide support for the contention that leadership is a precursor of innovation (Guastello, 1995; Howell & Avolio, 1993). A strong correlation between supportive leadership and participative decision-making leads to two conclusions. First, that participative decision-making is in itself an antecedent of individual innovation and, second, that supportive leaders must be active in establishing participatory processes in work units.

These results confirm and extend findings from previous research in both leadership and innovation (See for example Burpitt & Bigoness, 1997; Scott & Bruce,

1994; West, 1990). It is important to note that the impact of leadership on support for new ideas is not a direct one; rather it is mediated by elements in the group processes within which the individual works. Leaders can therefore enable an innovative work environment by paying attention to group processes. The effect is long term, and leaders who enable participative processes among employees, invest energy into building morale and, to a lesser extent, commitment to shared objectives, produce an environment conducive to innovation in the subsequent year.

The study confirmed what scholars such as Kanter (1997), and Scott and Bruce (1994), argue - that leadership is an integral factor in the innovation equation because it is critical in enabling a climate of support for new ideas. In contrast, the findings question West's (1990) theoretical position that overlooks the role of leadership for group innovation.

Strengths and Weaknesses of Research and Future Directions. A strong point of Study 1 is evidence for a significant but indirect relationship between leadership and innovation in a longitudinal field study. First, leadership is important for innovation. Second, supportive leadership alone is insufficient to create an environment where new ideas are supported - rather the leader needs to engage members' cognitive involvement (participation in decision-making and determining team objectives) and affective involvement (positive feelings toward the group). The results are consistent with previous reports of positive effects in terms of leadership and group processes on innovation and performance during change (Bass & Avolio, 1994; Pirola-Merlo, Härtel, Mann & Hirst, in press; Latham et al., 1994; Scott & Bruce, 1994). A surprising finding is that having objectives or a shared vision, although significant, is less important then morale in support for new ideas. The research therefore adds a new insight to the study of innovation in

teams, namely, that morale potentially results in creativity and adoption of innovations among employees.

The research has weaknesses, principally in the limited range of process variables included in the study, measuring only one leadership style, the focus on the individual level of analysis within a single organization, and the lack of follow through to evaluate innovation in practice. Each of the limitations is discussed below.

First, this study used a limited range of antecedents being morale, decision-making, objectives or vision, leadership and support for new ideas to determine a climate for innovation. Other process variables deemed important for innovation include reward and recognition (King, 1990), commitment to excellence and participative safety (West, 1990), task characteristics and problem solving (Scott & Bruce, 1994), and the individual's creative capacity (Amabile, 1983; Kirton, 1978) to name a few. Second, only one style of leadership was studied, namely supportive and facilitative leadership (Bass, 1990; Guastello, 1995). Other leadership styles, specifically, transformational leadership, may be effective in inducing innovation among followers (House, 1995; Howell & Avolio, 1993; Kanter, 1997; Van de Ven, 1986; Yukl & VanFleet, 1992). Similarly, the effect of non-leadership or negative styles of leadership on innovation must be evaluated (Bass & Avolio, 1994). Finally, the next step is to study group level variables and use group level analyses because leadership of intellectual capital is a likely feature of team effort in most organizations.

Much work remains to be done in terms of empirically assessing the relationship between leadership, group processes and innovation. Future research should test the impact of other process variables and particularly West's (1990) theory of group innovation. West's theory is among the rare offerings of a theoretical framework for group innovation. Comparisons should be made among a number of leadership styles for their relative impact

on innovation. Specific leadership models, such as the full range leadership model of Bass and Avolio (1994), should be tested in relation to innovation. Research is urgently required to explicate the relationship among leadership, group processes and actual innovations implemented in the workplace. Finally, there is a need to study the impact of interventions designed to improve innovation in the workplace by longitudinal multi-centre, multi-faceted and multi-level studies.

Conclusion

This chapter has reported on the initial phases of a study program aimed at identifying the antecedents and processes in the initiation and maintenance of support for new ideas in workgroups. An analysis revealed that a leadership style that is both supportive and facilitates participation enables the development of a work climate characterized by high morale, commitment to shared goals, and tangibly encourages support for innovation. Simply put, leaders who adopt a participative management style are able to foster a creative workplace environment.

Chapter 6: Study 2

This chapter describes a cross-sectional study conducted to explore the link between leadership and innovation. Specifically, Study 2 has two broad aims. First, to compare leadership styles in terms of their relative effect on climate for innovation. Second, to test the proposition that transformational leadership is relatively more effective for innovation because transformational leadership and climate for innovation are conceptually analogous. This latter proposition compliments Schein's (1987) thesis that leadership and culture are two sides of the same coin.

In Study 2 of the longitudinal research program, data were gathered from 45 natural workgroups in a medium sized specialist hospital. Data were collected on six leadership styles, ranging from active to passive, effective to ineffective (Avolio, 1994) with the addition of supportive leadership as identified in Study 1 and four elements of climate for group innovation (West & Anderson, 1996).

In Chapter 3, a framework was outlined for comparing and integrating theories of transformational leaders and innovation from which the two research propositions that are tested in Study 2 were derived. First, that the conceptual similarity of the theories of transformational leadership of Bass and Avolio's (1994) and West's (1990) theory of workgroup will be evidenced by positive correlations among the comparable theoretical facets. Second, in comparing leadership styles, supportive, transformational and transactional styles will have a positive influence on climate for innovation whereas leaders who are rigid, focus on errors, or abdicate responsibility will have a negative or no impact on group climate for innovation.

The research outlined in this chapter then, is an empirical test of the theoretical linkages between group innovation and leadership style using West's (1990) typology of group innovation and Bass and Avolio's Full Range Leadership Model (1990, 1994).

In Chapter 4, it was proposed that a workplace where people feel encouraged to suggest new ways of working or produce novel solutions to old problems requires a high level of morale, commitment to shared goals, and a supportive leader that encourages staff involvement and contribution. The finding that supportive leadership is important for promoting new ideas partly answers the question, "Is leadership important for innovation?" However, it raises another question, "How does supportive leadership compare with other styles of leadership in generating a climate for innovation?" That question is addressed in this chapter.

Very few empirical studies have been conducted that compare leadership styles on criterion in general and specifically on leadership styles on climate for innovation (Flood et al., 2000). Furthermore, this is the first program of study to compare team climate with leadership in terms of the relative effects on innovation of the constructs underpinning TCI (Anderson & West, 1996) compared with those underpinning the MLQ (Bass & Avolio, 1997). Finally, it is the first study to propose and test the proposition that transformational leadership and team climate for innovation are theoretically and conceptually analogous and therefore are expected to coexist.

Method

Sample. Data were obtained from an organizational survey distributed via internal mail to 955 employees of a large Australian hospital. Participants were employees in 45 workgroups at a hospital specialising in care for women and neonates. There was an average of 11.38 people in each workgroup, and an average of 56% of the people in each workgroup responded in full (range 20% to 100%).

The sample consisted mostly of nursing, administrative and other ancillary staff. Respondents were introduced to the survey by a cover letter, and were asked to send completed surveys to the researchers. Of the 520 surveys returned, 446 were useable,

resulting in a final response rate of 49%. Across all respondents and variables, approximately 3% of the data were missing, and these values were replaced with means for analysis. Analyses were conducted on two data sets, one included all groups and the other excluded groups where less than one third responded to the survey. There were no substantive differences between the results, therefore only results using the full data set are reported.

Measures. A survey compiled by the researcher in consultation with staff members was used to measure all variables. The variables were measured on either 7- or 5-point Likert type scales (See Appendix 4). Scores were rescaled prior to analysis to a 100-point scale, as this was the scale used by the hospital for reporting group level data. Two major measures were employed and a supportive leadership scale was extracted from the QPASS (Hart et al., 1996, p. 72). These are described next.

1. Queensland Public Agency Staff Survey (QPASS) (Hart et al., 1996, p. 72)

Hart and colleagues (1996) developed a measure of organizational climate, QPASS (Hart et al., 1996, p.72), that incorporates a range of climate constructs. The measure has been used widely in similar public service settings for purposes of both research and organizational improvement (Griffin, Hart & Wilson-Evered, 2000, p. 234). The instrument assesses employee evaluations of the work environment such as leadership, participative decision-making, recognition and appraisal, goal congruence, professional interaction, professional growth, workload and role clarity. This tool is most often used to examine the impact of organizational climate on factors such as turnover intentions, sick leave, job satisfaction, morale and distress levels. A subscale measuring supportive leadership was extracted from the organizational climate scale.

2. Multifactor Leadership Questionnaire (MLQ) 5x Short (Bass, Avolio & Jung, 1995)

As discussed previously, the nine factors or components of leadership measured by this instrument are: Laissez-Faire; Management by Exception (Passive); Management by Exception (Active); Contingent Reward (Constructive Transactions or Transactional Leadership), Transformational leadership and the four elements determining transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individual consideration. Responses were made on five-point Likert scales ranging from 'Rarely or never' (0) to 'Very frequently, if not always' (4).

The MLQ instrument was developed in the United States but has been used in various studies in Australia (Parry, 1996, p. 33; Parry, 2001, p.267). Research to date has tended, however, to focus on leadership teams at the higher levels of the organization. The concept, according to Avolio (1996), should be expanded to describe teams and individuals throughout the levels of the organization.

The original MLQ has been criticized by several authors for its lack of discriminant validity among the factors comprising the survey. Other criticisms are that behavioral and impact items are included in the same scales, and because the factor structure (Bass, 1985) has not received consistent empirical support (Hunt, 1991; Smith & Peterson, 1998; Yukl, 1994). The authors claim that they have addressed the problems in the newer MLQ, the MLQ 5X (Avolio et al., 1995).

The way in which recent versions differ from the original is that a newer conceptualisation of transactional and transformational leadership are used. The initial conceptualisation of transactional and transformational leadership proposed by Bass (1985) included six leadership factors (Charisma, Inspirational, Intellectual Stimulation, Individualized Consideration, Contingent Reward, and Management by Exception). Because Charisma and Inspirational Leadership were highly correlated, a new five-factor

structure of leadership was proposed (Bycio et al., 1995). The current nine-factor structure of the MLQ has empirical support according to Bass (1998).

Using the MLQ 5X Short, the following leadership styles were examined: Transformational, Active management by exception (Active MBE), Passive management by exception (Passive MBE), Supportive, and Laissez-Faire. Note that the contingent reward scale was dropped because it correlated in excess of 0.9 with transformational leadership, a finding consistent with previous research using earlier versions of the MLQ (Hunt, 1991; Smith & Peterson, 1998; Yukl, 1994).

3. *Team Climate Inventory (TCI) (Anderson & West, 1996)*

The four factors measured in the TCI are group processes that have been used to predict innovation (Anderson & West, 1996). The scales measuring each of the four factors (TCI) are presented later in this chapter.

Constructs

Transformational Leadership: This leadership style was formed by averaging five highly correlated leadership sub-styles, where each sub-style was measured by four individual items (MLQ) (Bass & Avolio, 1994). Therefore, a total of twenty items were used in creating this variable. The sub-styles were: Attributed charisma, idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These styles emphasized positive action and support. An example item from the Inspirational Motivation sub-style is, "Provides an exciting image of what is essential to consider" (0 = Not at all; 4 = Frequently/Always). Average scores for the sub-styles were combined to form the final scale, which had an alpha of .95.

Active Management by Exception (Active MBE): Active MBE is a leadership style that focuses on correcting subordinate behavior when an error is made. An example item is, "The manager directs their attention towards failures to meet standards" (0 = Not

at all; 4 = Frequently/Always). Four items were averaged for analysis, and the final scale had an alpha of .72.

Passive Management by Exception (Passive MBE): The passive management by exception leadership style is characterized by an extreme reluctance to take any action until a serious problem is present. An example item is, "The manager takes no action until complaints are received" (0 = Not at all; 5 = Frequently/Always). Four items were averaged to provide a summary scale, which had an alpha of .76.

Laissez-Faire: Laissez-Faire leaders avoid involvement in workplace issues and allow subordinates to manage themselves with little or no direction. An example item is, "The manager avoids dealing with chronic problems" (0 = Not at all; 4 = Frequently/ Always). Four items were averaged to provide a scale, which had an alpha of .81.

Supportive Leadership: Supportive leadership was measured using five items from the climate scale of the QPASS (Hart et al., 1996). The items assessed the degree to which managers were approachable, dependable, supportive, knew the problems faced by staff, and communicated well with them. An example item is, "There is support from the supervisors in this workplace" (1 = Strongly disagree; 5 = Strongly agree). The five items were averaged to provide a summary scale, which had an alpha of .84.

Team Climate: The TCI (Anderson & West, 1996) was used to measure the team climate dimension of Team Orientation, Support for New Ideas, Support for Team Objectives and Team Participation. A total of 38 items were used. An example item is, "This team is open and responsive to change" (1 = Strongly disagree; 5 = Strongly agree). The 38 items were averaged to provide a summary index of team climate for innovation, which had an alpha of .97. The four scales comprising the TCI are described next.

Vision (or team objectives) is the notion that team members share common aspirations and ideas about goals that act as motivators at work. Evaluating perceptions of

shared vision provides a measure of an individual's understanding of the objectives and goals of the team. The involvement of the organizational members in goal setting and achievement has been linked with both innovation (West, 1990) and leadership performance and effectiveness.

Participative safety embraces three aligned concepts; participation, safety and interaction frequency. Participative safety exists where team members' involvement in decision-making is motivated and reinforced in an environment perceived as interpersonally non-threatening (West, 1990, p. 311).

Task orientation, also termed *climate for excellence,* refers to the shared concern for excellence and quality on all tasks performed by the team. Tasks contribute to the vision or shared outcomes of the team and are subjected to evaluations, modifications, control systems and critical appraisal (West, 1990, pp. 310-315).

Support for innovation is the fourth construct in the model and occurs where group members are encouraged and expected to generate creative ideas and to introduce new and improved ways of doing things within the work environment. Other members provide both approval and practical support for inventiveness and demonstrate willingness to experiment with novel ways of working and trialing new products (West, 1990, p. 315).

Results

Group Level Agreement. For each group, responses from employees within the workgroup were averaged to provide a single score for the group. The degree of within group agreement was examined using mean rwg(j) (James, Demaree & Wolf, 1984; Kahn & Byosiere, 1992). Rwg(j) ranges from 0, which indicates the level of agreement expected by change, to 1, which indicates perfect agreement. The statistic revealed moderate to high levels of agreement for all variables. The rwg(j) index was below the recommended cut off value of .7 for active MBE (.5), passive MBE (.5), laissez-faire (.6) and contingent reward

(.6). However transformational leadership, which was aggregated over a greater number of items than was true for the other leadership styles, reached a value of .8. The deflated values of the other leadership scales was probably due to the effect of combining managers' ratings of their leader with subordinates' ratings of the workgroup manager. This could have created two targets for the leadership items within each group, which would have reduced agreement. Unfortunately, it was not possible to identify responses from the group manager and remove them. However, whilst low, these levels of agreement are considered to be adequate for treating the aggregated data as a group level construct.

Factor Analysis. *Team Climate Inventory (TCI).* The factor structure of the TCI was explored given the empirical evidence in support of both five (Kivimaki et al., 1997) and four factor solutions (Anderson & West, 1996) as discussed earlier in this chapter. Initial analyses of scale reliabilities were examined through item-scale correlations and the Cronbach alpha statistic. All items related to the corresponding theoretical scale. Consistent with previous studies (Agrell & Gustafson, 1994; Anderson & West, 1996; Anderson & West, 1998), only four factors emerged from the data set using Principle Axis Factoring with varimax rotation of all the items in the TCI. Using this approach, eigenvalues were above 1 on all four factors, which conformed to the theoretical model and accounted for over 70% of the variance. A five factor solution was requested, however, and none of the items loaded on the factors at levels greater than 0.30. Further, the items did not form a coherent scale of interaction frequency as suggested in other factor analytic studies of the TCI (Kivimaki et al., 1997) and no items loaded above 26. Correlations between the final scales, along with means, standard deviations and Cronbach alphas are shown in Table 2. All of the alpha coefficients are above .92.

Table 2: Scale means, standard deviations and correlations. Cronbach alphas appear in the diagonal in parenthesis

Scale	Mean	SD	1.	2.	3.	4.
1. Team O ientation	4.66	1.33	(0.92)			
2. Support ro. New Ideas	3.40	0.91	0.69**	(0.96)		
3. Team Objectives	4.83	1.25	0.62**	0.58**	(0.97	
4. Participative Safety	3.54	0.85	0.67**	0.75**	0.60**	(0.96)

n =501
*p<.05, **p<.01

The first factor accounted for 53.9% of the variance and was composed of all items of the Support for Team Objectives scale. The second factor accounted for 9.08% of the variance and was composed of all items of the Participative Safety scale. The third factor was composed of all items of the Support of Team Objectives scale and accounted for a further 5.78% of the variance. Finally, the fourth factor accounted for 4.60% of the variance and was composed of all items of the Team Orientation Scale. The four scales in total accounted for 70.8% of the variance. Fifth and sixth factors only added another 2.1% and 1.8% respectively to the explained variance and therefore were not included the solution.

Multifactor Leadership Questionnaire. Given the active debate in the literature regarding the factor structure of the MLQ, the factor structure of the MLQ 5X was explored here. Initial analyses included an examination of scale reliabilities as well as an exploratory factor analysis. These analyses then formed the basis for a series of confirmatory factor analyses (CFA) examining five models of the MLQ factor structure.

Scale reliabilities were examined through item-scale correlations and the Cronbach alpha statistic. Five items did not relate sufficiently to their theoretical scale, and were removed from subsequent analyses. In all cases, these variables shared less than 25% of their variance with the rest of the scale, and removing them was necessary to avoid subsequent problems in the exploratory and confirmatory factor analyses. The items were, "Seeks differing perspectives when solving problems" (intellectual stimulation), "Talks

about their most important values and beliefs" (charisma), "Displays a sense of power and confidence" (charisma), "Shows that he/she is a firm believer in 'If it isn't broken, don't fix it'" (passive MBE), and "focuses attention on irregularities, mistakes, exceptions, and deviations from standards" (active MBE). Correlations between the final scales, along with means, standard deviations and Cronbach alphas are shown in Table 3. All of the alpha coefficients are above .70 except for active MBE, which returned very low item intercorrelations (mean $r = 0.39$) in this sample.

Table 3: Scale means, standard deviations and correlations. Cronbach alphas appear in the diagonal in parenthesis

Scale	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Charisma	2.59	0.96	(0.89)							
2. Inspiration	2.59	0.98	0.85**	(0.86)						
3. Intellectual Stimulation	2.28	0.99	0.73**	0.73**	(0.80)					
4. Individualized Consideration	2.35	1.04	0.84**	0.72**	0.78**	(0.82)				
5. Contingent Reward	2.39	0.98	0.84**	0.78**	0.71**	0.81**	(0.83)			
6. Active MBE	2.23	1.01	0.15**	0.16**	0.09	0.08	0.08	(0.69)		
7. Passive MBE	1.13	1.06	-0.43**	-0.39**	-0.28**	-0.41**	-0.43**	0.10*	(0.84)	
8. Laissez-Faire	1.00	0.92	-0.47**	-0.45**	-0.29**	-0.51**	-0.46**	0.05	0.76**	(0.80)

$n = 464$
*$p<.05$, **$p<.01$

Exploratory factor analysis. As discussed earlier, a number of different factor structures have been proposed for the MLQ, ranging from two factor models (Bycio et al., 1995) to seven factor models (Avolio, Bass & Jung, 1999), as well as hierarchical models (Carless, 1998). In order to determine the approach to CFA, it was decided to first conduct an exploratory analysis of the factor structure of the data. Principle axis factors extraction with varimax rotation were performed on the 31 items remaining in the study. Five factors with eigenvalues greater than one were found. The fourth and fifth factors, however, accounted for only 3.6% and 2.9% of the variance respectively, and none of the items

loaded on these factors at levels greater than 0.40. For these reasons, a three factor solution was requested. This extraction was interpretable, however, four cross-loadings were found (using a 0.30 criterion). An oblique rotation removed these cross-loadings, while producing only moderate correlations between factors, and the interpretation is based on this solution.

The first factor accounted for 42.1% of the variance and was composed of all the transformational items as well as the contingent reward items. This factor is referred to as a general leadership factor, as it includes a wide range of transformational and transactional items. Although contingent reward is traditionally regarded as distinct from transformational leadership, these items do share a common focus on active rather than passive leadership actions. They also have a more positive affective tone than the other items in the MLQ, and Lowe, Kroeck and Sivasubramaniam (1996) showed that subordinates associate these leadership characteristics with increased unit performance. In contrast, the remaining items assess either checking-monitoring or passive-avoidant behaviors, both of which may be viewed negatively by subordinates.

The second factor accounted for 10.2% of the variance, and was composed of passive MBE and laissez-faire items. This factor is identical to the passive-avoidant factor reported by Bass (1985) in his initial analyses of the MLQ. The third factor explained 5.8% of the variance, and consisted of the three remaining active MBE items. The general leadership factor correlated negatively with the passive-avoidant factor (r= -0.48), but not with the active MBE factor (r= 0.00). The passive-avoidant factor and the active MBE factor were also mostly uncorrelated (r= –0.13). Factor loadings for this model are shown in Table 4.

Confirmatory factor analyses. In order to more rigorously examine the three-factor solution that emerged from the analysis, CFA was used to compare it to other plausible

models. As before, only 31 of the 36 MLQ items with acceptable psychometric properties were used in these analyses. Initial tests included three models, each of which are described below. These are followed up with a further two models suggested by the data. The full results are reported in Table 5.

Table 4: Factor loadings from principle factors analysis using oblique rotation

Item	Scale	Factor		
		Combined	Passive-Avoidant	Active MBE
Suggests new ways	IS	**0.84**		
Develops my strengths	IC	**0.84**		
Different angles	IS	**0.82**	0.19	
Instils pride in me	CH	**0.81**		
Sense of mission	CH	**0.76**		
Expresses satisfaction	CR	**0.74**		0.10
Discusses specific terms	CR	**0.73**		
Sense of purpose	CH	**0.72**		-0.16
Expresses confidence	IP	**0.72**		
Talks enthusiastically	IP	**0.72**		-0.14
Builds my respect	CH	**0.72**	-0.19	
Treats as an individual	IC	**0.71**		0.11
Makes clear	CR	**0.69**		
Talks optimistically	IP	**0.69**		
Considers different needs	IC	**0.69**	0.17	
Compelling vision	IP	**0.68**	-0.13	-0.14
Goes beyond self interest	CH	**0.67**		
Assistance for effort	CR	**0.63**	-0.16	
Teaching and coaching	IC	**0.59**	-0.21	
me-examines assumptions	IS	**0.58**	-0.15	
Moral and ethical	CH	**0.53**	-0.22	-0.19
Waits for things	PA		**0.83**	
Fails to interfere	PA		**0.74**	
Reacts to chronic probs	PA		**0.74**	-0.10
Avoids getting involved	LF		**0.69**	
Avoids decisions	LF		**0.68**	
Delays responding	LF		**0.67**	
Absent when needed	LF	-0.11	**0.60**	
Tracks mistakes	AC			**-0.71**
Concentrates on mistakes	AC		-0.13	**-0.62**
Attention towards failures	AC		0.14	**-0.56**

N=464

CH = Charisma, IP = Inspiration, IS = Intellectual Stimulation, IC = Individualized Consideration, CR = Contingent Reward, AC = Active MBE, PA = Passive MBE, LF = Laissez-Faire.

Factor loadings lower than 0.1 are not reported. Factor loadings higher than 0.5 are in bold.

Table 5: Summary of CFA results for six models

Model	1. 3 factors: passive, transactional, transformational	2. 3 factors: passive, active MBE, general	3. 6 factors: passive, active MBE, contingent rew., 3 transformational	4. 7 factors: passive, active MBE, contingent rew, 4 transformational	5. 7 factors: passive, active MBE, contingent rew, 4 transformational, + 1 higher order
χ^2 (d.f.)	1876 (431)	1675 (431)	1456 (419)	1233 (413)	1403 (427)
$\Delta\chi^2$ (d.f.)[a]	-	201 (0)	219 (12)	223 (6)	-170 (14)
CFI	0.84	0.86	0.89	0.91	0.89
NNFI	0.83	0.85	0.87	0.89	0.88
GFI	0.76	0.78	0.81	0.84	0.82
RMSR	0.10	0.08	0.08	0.08	0.08

$N = 446$.
[a] χ^2 difference test between the model and the previously estimated model. All differences were significant at $p < .001$

Model 1: Three factors (transformational, transactional, passive-avoidant). A 3-factor model comprising transformational, transactional, passive-avoidant distinguishes between transformational leadership and an active form of transactional leadership composed of contingent reward and active MBE. The passive-avoidant factor includes passive MBE and laissez-faire items. This model represents a traditional interpretation of the large scale structure of the MLQ (Avolio, Bass & Jung, 1999) and forms an effective baseline against which the observed three-factor model can be compared. The results showed that this model did not fit the data (R^2 = 1876(431), p<.001). In addition to the highly significant chi-square, the Confirmatory Fit Index (CFI = 0.84), the Non-Normed Fit Index (NNFI = 0.83), the Goodness of Fit Index (GFI = 0.76), and the Root Mean Square Residual (RMSR = 0.10) all indicated poor model fit.

Model 2: Three factors (general, active MBE, passive-avoidant). This model represents the results of exploratory analysis. It differs from the previous model only in that contingent reward loads on the transformational (general leadership) factor, rather than the transactional factor. The active MBE items form a factor by themselves, and the laissez-faire and passive MBE items together form a passive-avoidant factor. These

changes resulted in a drop in chi-square of 201 without any change in the degrees of freedom. The CFI (0.86) and the NNFI (0.85) were also improved. This model clearly fits better than the more traditional structure, however, a less restricted model may be required to fully represent the data.

Model 3: Six factors (three transformational factors, contingent reward, active MBE, passive-avoidant). This model was reported by Bass (1985) in his initial description of the MLQ factor structure. Rather than a general leadership factor, the model identifies charisma, intellectual stimulation, individualized consideration and contingent reward as separate aspects of leadership. The charisma factor includes items relating to behavioral and attributed charisma, as well as items designed to assess inspirational leadership. It was argued by Bass (1985; Avolio, Bass & Jung, 1999) that inspirational leadership represents an additional behavioral form of charisma. The final two factors are active MBE and passive-avoidant. Moving to this model produced a drop in chi-square of 219 for 12 degrees of freedom ($p<.001$), and raised the CFI to 0.89 and the NNFI to 0.87.

In summary, the best fitting model tested so far is the six-factor model originally reported by Bass (1985). At a large scale this model distinguishes transformational leadership from two transactional forms (active MBE and contingent reward), as well as a laissez-faire factor. The transformational component is represented by three-related but distinct factors: attributed charisma, behavioral charisma and inspiration. The factor loadings for this six-factor model are presented in Table 6. Correlations between the latent factors are shown in Table 7.

Table 6: Factor loadings from CFA of indicators for six-factor model

		Factor					
Item	Scale	CH	IS	IC	CR	AC	P/A
instils pride in me	CH	0.77					
sense of mission	CH	0.78					
sense of purpose	CH	0.82					
builds my respect	CH	0.80					
goes beyond self interest	CH	0.69					
moral and ethical	CH	0.69					
expresses confidence	IP	0.81					
talks enthusiastically	IP	0.82					
talks optimistically	IP	0.68					
compelling vision	IP	0.79					
suggests new ways	IS		0.87				
different angles	IS		0.81				
me-examines assumptions	IS		0.51				
develops my strengths	IC			0.87			
treats me as an individual	IC			0.70			
considers different needs	IC			0.60			
teaching and coaching	IC			0.71			
expresses satisfaction	CR				0.76		
discusses specific terms	CR				0.74		
makes clear expectations	CR				0.74		
assistance for effort	CR				0.70		
tracks mistakes	AC					0.72	
concentrates on mistakes	AC					0.64	
attention towards failures	AC					0.58	
avoids getting involved	LF						0.75
avoids decisions	LF						0.70
delays responding	LF						0.66
absent when needed	LF						0.66
Waits for things	PA						0.84
Fails to interfere	PA						0.74
reacts to chronic probs	PA						0.78

N = 446.
CH = Charisma, IP = Inspiration (Inspirational Motivation), IS = Intellectual Stimulation, IC = Individualized Consideration, CR = Contingent Reward, AC = Active MBE, PA = Passive MBE, LF = Laissez Faire, P/A = Passive-avoidant

Table 7: Factor correlations for six-factor model

Scale	1.	2.	3.	4.	5.	6.
1. Charisma	-					
2. Intellectual Stimulation	0.86*	-				
3. Individualized Consideration	0.92*	0.99*	-			
4. Contingent Reward	0.96*	0.88*	0.98*	-		
5. Active MBE	0.21*	0.13*	0.13*	0.13*	-	
6. Passive-Avoidant	-0.54*	-0.37*	-0.53*	-0.56*	0.10	-

N=446
*$p<.05$

Model modification

An examination of the model modification indices for the six-factor model suggested that fit could be improved by further differentiating between the items composing the charisma factor. Although *post-hoc* model adjustment can lead to spurious changes in fit, adjustments were limited to decomposing the three theoretically distinct scales forming the charisma factor. Results showed that fit could be improved by distinguishing between the attribution of charisma (attributed charisma) and the behavioral manifestations of charisma (inspirational leadership and behavioral charisma), which will be termed here as inspirational charisma. Thus, inspirational charisma includes items assessing behavioral actions such as "emphasises the importance of a collective sense of mission" and "articulates a compelling vision of the future". Attributed charisma includes personal qualities of the leader, such as "instils pride in me for being associated with him/her".

These modifications resulted in a fourth model with seven factors: four transformational factors (attributed charisma, inspirational charisma, intellectual stimulation, individualized consideration), a contingent reward factor, an active MBE factor and a passive-avoidant factor. Moving to this model resulted in a drop in chi-square of 223 for six degrees of freedom ($p<.001$) when compared to the six-factor model.

Furthermore, the CFI now indicated adequate model fit (0.91), although the NNFI was still marginal (0.89) as was the GFI (0.84) and the RMSR (0.08).

A range of other seven-, eight- and nine-factor models were examined, however, none of these produced substantial improvements in fit. Further improvements in fit over the seven-factor model would result only from allowing items to cross-load, or from correlating errors. Given the uncertain theoretical gains of these moves, further modification was decided against. The factor loadings for this best fitting model are reported in Table 8, and the latent factor correlations are reported in Table 9.

Higher order factors

An examination of the latent factor correlations for the final model show that all of the transformational factors are highly correlated with each other (mean $r = 0.88$) and with the contingent reward factor (mean $r = 0.93$). As discussed above, these factors were part of a general leadership factor produced by EFA. Within CFA, however, it may make sense to model this general factor as a second order factor. Therefore, a hierarchical model (model 5) was constructed which included a general leadership factor, with behavioral charisma, attributed charisma, individualized consideration, intellectual stimulation and contingent reward as sub-factors. The remainder of the model was unchanged. The results showed that this model did not fit the data as well as the final seven-factor model (model 4), resulting in an increase in chi-square of 170 for 14 degrees of freedom ($p<.001$). It did, however, fit slightly better than the six-factor model, resulting in a drop in chi-square of 53 for 8 degrees of freedom ($p<.001$).

Table 8: Factor loadings from CFA of indicators for seven-factor model

		Factor						
Item	Scale	ACH	ICH	IS	IC	CR	AC	P/A
instils pride in me	CH	0.81						
builds my respect	CH	0.87						
goes beyond self interest	CH	0.74						
sense of mission	CH		0.81					
sense of purpose	CH		0.85					
moral and ethical	CH		0.67					
expresses confidence	IP		0.81					
talks enthusiastically	IP		0.85					
talks optimistically	IP		0.81					
compelling vision	IP		0.81					
suggests new ways	IS			0.87				
different angles	IS			0.81				
re-examines assumptions	IS			0.50				
develops my strengths	IC				0.86			
treats me as an individual	IC				0.72			
considers different needs	IC				0.61			
teaching and coaching	IC				0.70			
expresses satisfaction	CR					0.76		
discusses specific terms	CR					0.74		
makes clear expectations	CR					0.74		
assistance for effort	CR					0.70		
tracks mistakes	AC						0.72	
concentrates on mistakes	AC						0.63	
attention towards failures	AC						0.58	
avoids getting involved	LF							0.75
avoids decisions	LF							0.70
delays responding	LF							0.66
absent when needed	LF							0.66
Waits for things	PA							0.84
Fails to interfere	PA							0.74
reacts to chronic probs	PA							0.78

N = 446.
ACH = Attributed charisma, ICH = Inspirational charisma, CH = Charisma, IP = Inspiration, IS = Intellectual Stimulation, IC = Individualized Consideration, CR = Contingent Reward, AC = Active MBE, PA = Passive MBE, LF = Laissez Faire, P/A = Passive-avoidant

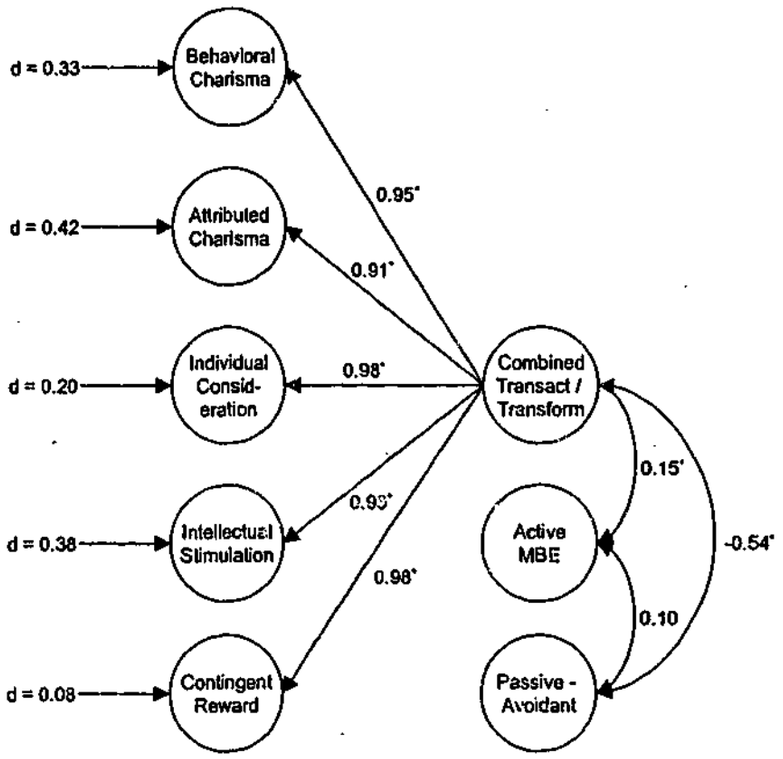
Table 9: Factor correlations for seven-factor model

Scale	1.	2.	3.	4.	5.	6.	7.
1. Attributed Charisma	-						
2. Behavioral Charisma	0.85*	-					
3. Intellectual Stimulation	0.80*	0.84*	-				
4. Individualized Consideration	0.97*	0.86*	0.99*	-			
5. Contingent Reward	0.94*	0.93*	0.88*	0.98*	-		
6. Active MBE	0.09	0.23*	0.13*	0.12	0.13	-	
7. Passive-Avoidant	-0.56*	-0.50*	-0.37*	-0.53*	-0.56*	0.10	-

N=446
*$p<.05$

Although the hierarchical model does not fit as well as the seven-factor model, it is instructive to examine its structural components (See Figure 8). It can be seen that on average, the second order factor explained between 33 and 85% of the variance in the transformational and contingent reward factors (mean variance extracted = 51%). Thus, the second order factor was quite successful in predicting the other factors. These results match those found by Carless (1998), in which a higher order factor accounted for an average of 55% of the variance in transformational factors only. The results therefore appear to support her conclusion that the MLQ items measure an overarching factor, however, in this case that factor would appear to include contingent reward, as well as the transformational factors.

Figure 8: Structural components of a hierarchal MLQ model



* $p<.05$

In conclusion, it is argued that the broad structure of the MLQ consists of three types of factors. The first are positively laden transformational/contingent reward factors. There seems to be some agreement that these are effective behaviors/characteristics for leaders to possess, and that they are consistently associated with positive outcomes. One may model these factors as sub-factors of a general leadership factor, or as very highly intercorrelated first order factors. The next factor is an active MBE factor, which represents checking and monitoring behaviors, and is very nearly orthogonal to the general leadership factor. The final factor is a passive-avoidant factor consisting of passive MBE and laissez-faire behaviors. This factor is moderately negatively correlated with the general leadership factor, and orthogonal to the active MBE factor.

Notwithstanding these findings, all 45 items of the MLQ were included in subsequent analyses as the purpose of this study was twofold. First, to explore synergies among two theoretical models, transformational leadership and climate for innovation and,

second, to ascertain which leadership styles cultivate positive climates within workgroups. Therefore, the analysis was conducted at a group level. Participants in each workgroup rated their own leadership style, as well as the style of their managers, but only subordinates' ratings of manager's leadership styles are reported in this research.

In summary, the research compares elements of transformational leadership, the full range nine-factor structure of leadership measured by the MLQ and the supportive leadership scale from QPASS with the climate for innovation (as measured by the TCI).

Correlational Analysis. Means, standard deviations and correlations between variables in the analysis are reported in Table 10. It is important to note that the following results are based on subordinates' ratings of their manager's leadership style. The correlation matrix shows clearly that managers adopting a transformational style are very likely to have a positive team climate for innovation. The other leadership styles were not related to team climate. Correlations of the leadership styles with transformational leadership were high, with laissez-faire and passive MBE showing strong negative correlations, and supportive leadership showing a strong positive correlation.

Table 10: Means, standard deviations and correlations between variables in the study

Variables	Mean	SD	1.	2.	3.	4.	5.	6.
1. Transformational	59.26	11.53	-					
2. Laissez-Faire	28.07	13.87	-.65**	-				
3. Active MBE	52.01	12.62	.03	.15	-			
4. Passive MBE	32.80	12.44	-.41**	.81**	.28	-		
5. Supportive Leadership	53.92	12.82	.47**	-.49**	-.32*	-.57**	-	
6. Team Climate	63.22	7.96	.53**	-.19	-.13	-.17	.16	-

*P<.05 ** p<.01
n = 45 workgroups

Analysis of the relationship among elements of transformational leadership and group climate for innovation showed strong positive correlations, all of which were significant at the p<.01 level (range .40 to .99). From Table 11, note the following

correlations in accordance with Hypothesis 1: idealized influence and team orientation were positively correlated .55; inspirational motivation and team objectives were positively correlated at .48; intellectual stimulations and support for new ideas were positively correlated at 45; and individualized consideration and participative safety were positively correlated at .51. High inter-correlations were also observed among the subscales of the TCI and the Transformational Leadership Scale of the MLQ (Table 10).

Table 11: Correlation among elements of Transformational Leadership and Team Climate for Innovation

Variables	1	2	3.	4	5	6	7	8
1. Team Orientation	-	.783**	.770**	.823**	.545**	.531**	.554**	.508**
2. Support for Ideas	-	-.	.717**	.779**	.407**	.399**	.454**	.400**
3. Team Objectives	-	-	-	.782**	.493**	.481**	.488**	.451**
4. Participative Safety	-	-	-	-	.527**	.514**	.543**	.512**
5. Idealized Influence	-	-	-	-	-	.998**	.962**	987**
6. Inspirational Motivation	-	-	-	-	-	-	.956**	.986**
7. Intellectual Stimulation	-	-	-	-	-	-	-	.950**
8. Individualized Consideration	-	-	-	-	-	-	-	-

*P<.05 ** p<.01
n = 45 workgroups

Regression Analysis. To examine the effect of manager's leadership style on team climate, team climate was regressed on all five leadership styles simultaneously. The results are shown in Table 12.

Table 12: Multiple Regression Results: Managers leadership style and team climate

Leadership style	□	R^2
Transformational	.93**	
Laissez-Faire	.67*	
Active MBE	-.23	
Passive MBE	-.42	
Supportive Leadership	-.27	.43**

Note. * p<.05 **p<.01

As one would expect, the zero order correlations show that transformational leadership had the largest effect on team climate, with a beta weight of .93 ($p<.01$). Laissez-faire leadership also had a significant beta weight, however, it had a non-significant zero-order correlation with team climate, and a large negative correlation with transformational leadership. Given this set of results, it is apparent that laissez-faire leadership is acting as a suppressor variable, and its contribution to the regression is an artefact of its high negative correlation with transformational style. In other words, laissez-faire leadership has no real effect on team climate.

This analysis shows that employees who rate their leaders as demonstrating a transformational style tend to report a positive team climate. A limitation in the design of the study is that data on all variables were obtained at the same time, using the same measure. Therefore, it is not possible to conclude that transformational leadership causes a positive team climate, only that the two are significantly related.

Discussion

So how do managers generate a climate for innovation? Is leadership important (Scott & Bruce 1994) or are group processes the key (West, 1989; West & Anderson 1996; West, Smith et al., 1998; West & Wallace 1991)? This chapter sought to answer this question by taking a closer look at theories of innovation and leadership amongst which certain behavioral analogies were identified. This observation led to the development of an alternative conceptual framework, one that explicates leadership *for* innovation.

The first hypothesis proposed that there were conceptual synergies among theories of transformational leadership and workgroup innovation, which would be evidenced by correlations among constructs in the theoretical models. The findings support this contention. Significant positive correlations were found among elements of Bass and Avolio's (1995) model of transformational leadership and West's (1990) theory of

workgroup climate for innovation. Intrascale correlations for the TCI were between .71 and .82 (p.< .001) and even higher for the MLQ at .95 to- .99 (p.< .001). On the other hand, interscale correlations between the MLQ and TCI were lower but still highly significant .4 0 to .55 (p.< .001).

Accordingly, it may be concluded that transformational leadership is an antecedent of innovative climate, suggesting that transformational leadership is a factor that should be used to augment West's (1990) theory. Thus, leadership *for* innovation is articulated as a composite of the two theoretical constructs of transformational leadership and climate for innovation. Such integration of theories contributes to the understanding of leader-group interaction in the innovation process. In the workplace, groups rarely exist without leaders, whether formal or informal, and transformational leaders need groups through which to achieve their goals.

The results suggest that transformational leaders are likely to have the capacity to create a climate for innovation. It is proposed that leadership should be defined in terms of a defining context much in the same way that Schneider (1990, p.63) argues climate should be conceptualized. This contrasts with the generic situational approach suggested by contingency theorists (Fiedler, 1978, p. 78; Fiedler & Garcia, 1987, p. 94; House & Podsakoff, 1994, p. 268) because leadership style can be viewed as purposeful. In this case, the purpose is to achieve innovation.

The results of this study support and extend the findings of other scholars who have found a link between leadership and innovation specifically, or superior performance more generally. (Amabile & Gryskiewicz, 1997, p. 180; Bass, 1985, p. 69; Bass & Avolio, 1994, p. 29; Bass, 1998, p. 260; Burpitt & Bigoness, 1997; Dahlgaard et al., 1997; Flood et al., 2000; Guastello, 1995; Howell & Avolio, 1993; Keller, 1992; Kouzes & Posner, 1987, p.

65; Morrison, 1999; Parry, 1999, p. 195; Shin & McClomb, 1998; Wilson-Evered et al., 2000; Wilson-Evered et al., 2001, p. 241; Yammarino et al., 1993).

Clear evidence was found for arguing that transformational leadership and climate for innovation are likely to occur together. The highly significant correlations indicate a strong association among constructs in both theories. This finding provides support for Agrell and Gustafson's argument that leadership style should coincide with the four-factor model of group climate proposed by West (1990) to predict innovation (Agrell & Gustafson, 1996). The present research extends the proposal of these authors by explicating significant positive correlations among construct pairs with similar meaning in West's, and Bass and Avolio's, theories. Further, this research ascertained which leadership style has the stronger influence on climate for innovation.

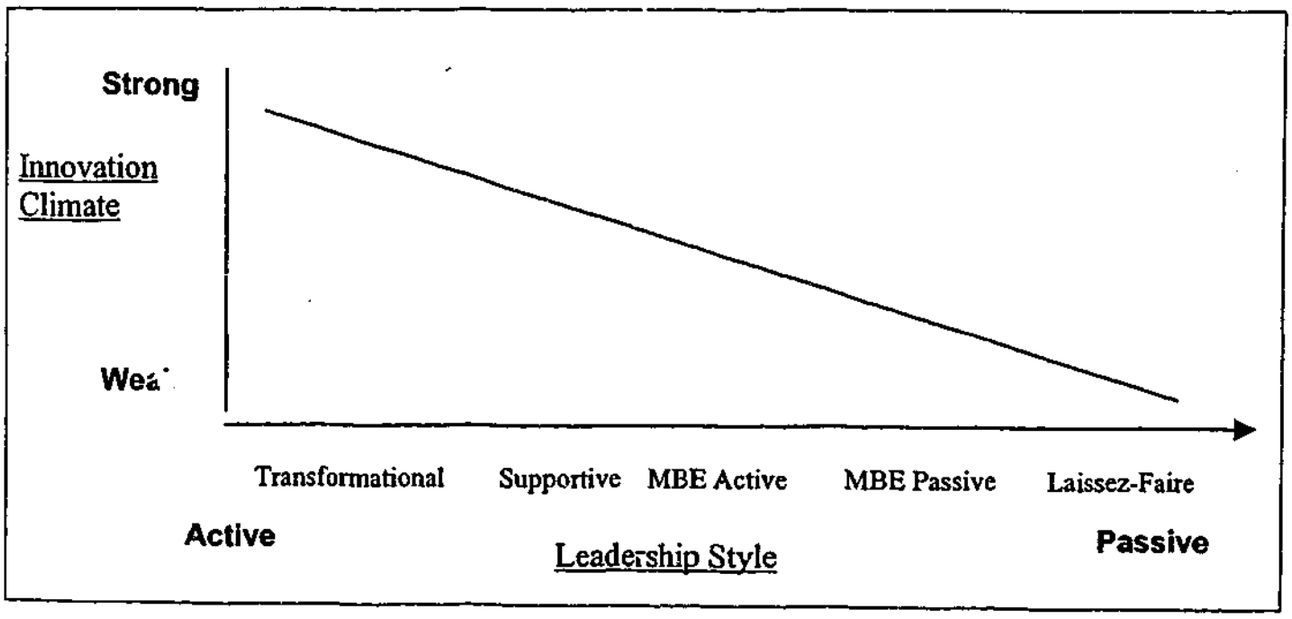
When comparing the differential effect of leadership style on team climate for innovation, two predictions were made (See Hypothesis 2). First, it was expected that a strong positive relationship between transformational leadership and climate for innovation would be found and second, that a negative (or no) relationship would be observed between laissez-faire leadership and climate for innovation. The results supported both predictions.

Literature on the topic has produced little research comparing leadership styles on an outcome such as innovation. A notable exception is Howell and Avolio's (1993) study of predictors of consolidated business unit performance. These scholars found the three transformational measures were significantly positively related to business unit performance over a one year interval and that transactional leadership was negatively related to business unit performance. Of relevance to my work is their finding that transformational leadership behaviors and unit performance were moderated by the level of support for innovation in the business unit. (Howell & Avolio, 1993) and that transactional

leadership including contingent reward and active and passive management by exception were negatively related to business unit performance.

Congruent with Howell and Avolio (1993), the research observed that a leader demonstrating transformational qualities .53; (p.< .001)) is more likely to produce a climate for innovation than other leadership styles. The next findings, however, digress from those of Howell and Avolio (1993) on the latter point, as contingent reward was found to be highly correlated at .90 (p.<.001) with the transformational scales. The contingent reward scale was therefore removed from further analysis. However, active MBE (-.13, ns) and passive MBE (-.17, ns) were negatively related to innovation though not significantly so. The relationship between innovation and laissez-faire leadership was also negative. (-.19, ns). Although non-significant, these results are in the direction predicted. If these leadership styles are placed on a continuum, from most active to most passive, an inverse relationship to climate for innovation is apparent as depicted in Figure 9.

Figure 9: Diagram depicting the relationship between leadership style and climate for innovation



Supportive leadership, though highly correlated with transformational leadership (r=.47, p.< .001), was not related to climate for innovation, as identified in the previous chapter (Wilson-Evered et al., 2001, p. 241; Wilson-Evered et al., 2001, p. 264). The finding that supportive leadership was important was only part of the picture. The rest of the picture came into view when other leadership styles were added for comparison. From this step, it was clear that transformational leadership overwhelmed the influence of supportive leadership for generating a climate of innovation.

The previous discussion supports the second hypothesis that innovation is least likely with very passive styles of leadership or those adopting a "hands off" approach. Transformational leadership is an important factor in producing a climate for innovation and the claim that systems that are working well should not be changed is unequivocally disputed. The phrase, "If it is working well, don't fix it" is surprisingly common in boardrooms despite being counterproductive to innovation (Bass, 1998). These results suggest this type of leadership has no place in organizations that value innovation.

Limitations. This study has three main limitations. First, a measure that described a climate for innovation rather than a measure of actual innovation was used. Nonetheless, climate for innovation has been linked to innovative outcomes in previous work (Anderson & West, 1998; West & Anderson, 1996).

Second, the measures were used in a single survey at the same point in time from the same sample. Therefore, this research is exposed to the consequences of common method variance where the "true" relationship (expressed by the calculated correlation coefficient) includes some measure of a "spurious" relationship. That is, if high levels of innovation at work were found, the survey might also report high levels of transformational leadership due to some "common third" variable such as level of education. The issue of common method variance frequently arises in organizational

studies using self reports (Podsakoff & Organ, 1986, p. 284). To avoid this effect, data should be collected from the same source at different times or by the use of different methods (such as qualitative and quantitative) using separate tools so that data sources converge on the same criterion. This is the value added by the previous and subsequent longitudinal studies to the overall thesis research program.

Third, the exploratory factor analysis suggests three major factors and the removal of some items from the transformational leadership scale. The original item content and factor structure for subsequent analyses were retained as the purpose of the study was to examine the theoretical concept in a field context. However, although this research did not determine the relationship to innovation of factors emerging from the analysis, maintaining integrity of the full range leadership model allowed theoretically grounded assumptions about implications of these findings to be made.

In light of the debate in the literature regarding the factor structure of the MLQ, the next section presents the confirmatory factor analysis results of the MLQ, which results inform the third and final study.

Conclusion

Limitations of the study prevent conclusions about causality in the leadership-innovation linkage but future research should assess such relationships by conducting longitudinal studies using actual innovations generated in the workplace as the criterion measure.

This chapter builds on Chapter 5 where leadership was identified as an important antecedent of innovation and clarifies the most effective style of leadership *for* innovation. The chapter also examines how the theoretical constructs for transformational leadership, as a component of the Full Range Leadership model, and climate for innovation have been operationalized by two psychometric measures. Each of these measures was explored in

detail to determine their point of synergy in determining prerequisites of innovation of high performing groups. This is the first time these two models and their measures have been compared and expected consequences implied from each drawn out and compared.

Chapter 7: Study 3

This chapter builds on the findings of Chapter 6 where transformational leadership was found to be synergistic with climate for innovation, and extends on the assumptions to argue that where these two co-exist, there will be overt evidence of innovations implemented in the workplace.

The aims of Study 3 are to test the assumption that transformational leadership and climate for innovation relate to actual innovations produced in the workplace. The steps involved include exploration of the relationship among leadership, morale, and climate for innovation. Second, the relationship among factors in the climate and implemented innovation in the subsequent year are tested. Finally, the relationship among transformational leadership, morale, and innovation over a two year time period are examined.

As noted in the previous chapter, it is proposed that transformational leaders will influence staff to be creative by stimulating their intellect, providing practical support for innovation, addressing individual requirements, and inspiring and motivating the individual to achieve beyond expectations (Bass, 1998). When the group is clear about their goals and actively contribute to determining them, members feel encouraged and liberated to offer new solutions and experience the practical and interpersonal support they need to develop their innovativeness (West, 1990). In the two previous studies, it was confirmed that leadership is important for establishing a climate for innovation. The third and final study in the thesis research takes the next logical step and tests whether such a climate results in implemented innovations seen to benefit end-users.

Apart from increasing comprehension of leadership-innovation linkages, this study contributes to understanding the utility of both theories within the Australian context.

Method

Sample. A field study was used to assess the impact of leadership on actual workgroup innovations and estimate the role of team climate including morale. This study was conducted in one health care facility in order to prevent confounding effects of different organizational influences on innovation. The hospital is a publicly funded 950-bed facility (with some private beds) in Northeastern Australia. It provides primary, secondary and tertiary level services to the local catchment areas and specialized services to the entire state. The hospital has significant research and teaching responsibilities and is affiliated with the major universities recognized for health care education. The hospital, as with others worldwide, has an urgent need to refocus its business, which has meant major structural and process changes. Further, it is currently subject to a major merger and rebuilding program. A significant element of the long-term corporate improvement strategy is a values-based culture program that integrates with evidence-based change management interventions.

Participants surveyed were the entire staff at the metropolitan teaching hospital specializing in women's health and childbirth as well as intensive care for neonates and women's gynaecological disorders. Participants were from 45 workgroups, with an average size of 11.38 members (range 3 to 102). The groups were comprised of mostly hospital-based clinical teams and included mixed professionals and administrative staff. The majority of the members of clinical teams were from nursing but other teams such as medical, allied health and administration featured in the sample. The mean age of the sample was 40.3 years and the majority of participants (80%) were female.

As members of natural workgroups, the participants worked together in units such as maternity wards, research centres, physiotherapy and social work departments, medical imaging, human resources, childcare services, and executive management. Each

individual's data were coded for workgroup and department enabling grouping at the work unit level and providing the opportunity to measure and compare both longitudinal and qualitative observations. Even where the entire workgroup was large, such as in the Neonatal Unit and Labor Ward, a much smaller number of staff worked together on a shift and rotating rosters enabled staff to become familiar with one another. The staff group was relatively stable with a small turnover rate per year. Junior staff, most commonly nurses and doctors completing their training, largely accounted for the turnover rate.

For the survey measures of leadership and morale, an average of 56% of the people in each workgroup responded in full (range 20% to 100%). Two sets of analyses were conducted, one in which groups with a response rate of less than one third were deleted, and the other using all groups. There were no substantive differences between the results, so only results using the full data are reported.

Measures. Leadership and morale were measured using a survey distributed to the workgroups in 1997. The variables were measured on either 7- or 5-point Likert type scales. Scores were rescaled prior to analysis to a 100 point scale, as this was the scale used by the hospital for reporting group level data as part of an ongoing organizational improvement initiative (Wilson-Evered & Griffin, 1998). Qualitative data on innovations were collected from each workgroup in 1997 and 1998. A separate expert panel rated these data in 1998 (See Appendix 1).

Transformational leadership. The transformational leadership scale was derived from the Multifactor Leadership Inventory (Avolio et al., 1995; Bass & Avolio, 1997). The score was achieved by averaging five highly correlated leadership sub-styles, where each sub-style was measured by four individual items. A total of 20 items were therefore used in creating this variable. The sub-styles were Attributed Charisma, Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration.

These styles emphasized positive action and support. An example item from the Inspirational Motivation sub-style is, "Provides an exciting image of what is essential to consider" (0 = Not at all; 4 = Frequently/Always). Average scores for the sub-styles were combined to form the final scale, which had a high reliability (Cronbach's alpha = 0.95).

Morale. Workplace morale is a group level construct and was derived from the QPASS (Hart et al., 1996) that was developed for use in collaborative research and continuous improvement programs in public sector agencies in Australia. Morale was measured by averaging five items that accessed positive feelings relating to work from the 1996 survey (Cronbach's alpha = .85). An example item is, "There is good team spirit in this workplace" (1 = Strongly Disagree; 5 = Strongly Agree).

Team climate for innovation. The TCI (Anderson & West, 1996), which is based on West's (1990) model of workgroup innovation, was used to measure team climate for innovation. The scale includes the subscales of Team Orientation, Support for New Ideas, Support for Team Objectives and Participative Safety. A total of 38 items were used, an example is, "We have a 'we are in it together' attitude" (1 = Strongly disagree; 5 = Strongly agree). The 38 items were averaged to provide a summary index. Reliability of the index was high (Cronbach's alpha = 0 .97).

Innovation. Innovation data were obtained by asking each workgroup to nominate innovations which they had implemented over the previous year. Innovations were new practices, processes, services, procedures, tools, activities and the like that had been developed, introduced and implemented by the staff of that work area. The innovations were recorded verbatim and returned to the workgroup for verification. All interventions were recorded and presented in a report that was distributed to each workgroup. The reports were anonymous apart from the name of the particular work unit, for example a ward or departmental title. Examples of innovations are listed below:

Gynaecological Outpatients: The introduction of a new community clinic, introduction of clinical pathways, "Steripeal" instruments used instead of flash sterilizing, introduction of a menopause support group.

Labor Ward: The establishment of birth plans prior to admission, implementation of self-rostering, and introduction of a communication room.

Maternity Ward One: The introduction of clinical pathways and clinical pathway audits, the involvement of clinical staff in recruiting in place of administrative staff, the introduction of new graduate professional development program (designed by staff), and the introduction of new workbooks for registered nurses.

Maternity Ward Two: The introduction of patient laundry, patient phones in rooms, various in-services education sessions, such as beauty therapy and physiotherapy, the introduction of a memorial service with the Red Cross for patients whose baby died at less than 20 weeks gestation, and providing the introduction of evaluation systems.

Perinatal Research Unit: The introduction of a Perinatal Newsletter, a questionnaire research project to evaluate how patients feel about taking part in a research project, a new-born follow-up procedure including psychometric testing developed in collaboration with the Neonatal Unit and Lions Medical Research Group, fundraising for an ultrasound probe, an informal social activity called the 'metabolic round' meeting weekly with refreshments providing the opportunity for staff to socialize, the introduction of research meetings within the hospital, and a research project initiated in collaboration with universities studying Perinatal EEGs.

The number of innovations for 1996 was 157 (mean = 7: range 4 - 16), which increased in 1998 to 347 (mean 8.7: range 4 - 25).

The reports were then distributed to a group of health industry experts who were selected on the basis of three criteria. First, the person was not working at the hospital

during that time. Second, the person was external to the hospital but part of the same state department. Third, the person was considered an authority in health care management. Expertise was also defined using specialist professional qualifications and hierarchical role in the organization as criteria. For example, Allied Health Adviser (ex-speech pathologist), Zonal Coordinator (ex-nurse), District Manager (doctor), Assistant District Manager (business administrator), and Director of Nursing and Director of Corporate Development (economist). The innovations were rated by this panel of six experts in terms of their benefit to patients, benefit to staff and benefit to administration following a procedure described in West and Anderson's (1996) study of innovation in top management teams. This resulted in three innovation variables, one for each target group. These ratings were made on a 5-point Likert type scale, where five indicated a large benefit, and 1 a marginal benefit (See Appendix 1). An average score for each of these benefits was calculated for each workgroup. Innovation data were obtained in 1997 and 1998. Only the 1998 data is reported in this study.

The degree of agreement between panel members on innovation data was assessed using the rwg(j) statistic. The average rwg(j) for each of the three measures were all above the recommended cut-off of .70, (Benefit to Patients: .71; Benefit to Administration: .76; Benefit to Staff: .74) and so it was concluded that there was substantial agreement between panel members on the nature of the innovations, confirming appropriate group level aggregation. The same procedure was applied to the team climate variables, which yielded rwg(j) values as follows; Team Objectives .83; Participative Safety .86; Support for New Ideas .72; Team Orientation .74. These data indicate substantial agreement about the work climate among workgroup members. The rwg (j) values for the leadership styles were as follows; Laissez-faire .59; Contingent reward .63; Transformational .85; Management by

exception-active .50; Management by exception-passive .49; Team objectives .83; Supportive leadership .72.

Leadership and morale. Group-level phenomena can be measured using individual member's ratings of their groups or teams on particular attributes and these ratings can be averaged to form a group score (Campion, Papper & Medsker, 1996; Hyatt & Ruddy, 1997; Irurita, 1996). For the leadership and morale data, therefore, responses from employees within a workgroup were averaged to provide a single score for each group. The degree of within group agreement was examined using mean rwg(j). Rwg(j) ranges from 0, which indicates the level of agreement expected by chance, and 1, which indicates perfect agreement. The researcher determined that the statistic demonstrated acceptable levels of agreement for all variables.

Procedure. Questionnaires were distributed in person to all workgroups by a facilitator who volunteered to be a change agent and communicator for the project. There were three groups of change agents, strategic managers, line managers and members of task focused teams that emerged during the course of the project in order to address particular issues and tasks. Line managers were viewed as key to the project success and therefore they were entrusted with the accountability for communicating about the project and creating an enabling environment for staff to be both involved in the project, and also to contribute to innovations. A communication assessment indicated that staff in the organization believed line managers and trusted them above all others.

Staff members on leave from work also received a survey and were identified and contacted as part of the communication process. A substantial information and preparation process preceded the distribution in order to define workgroup and leadership, and develop the survey measures in a contextually appropriate way for the institution. Although some clinicians worked across a number of teams (medical and allied health), respondents were

asked to nominate the group with which they most identified and possessed a leader to whom they reported.

A letter of support from senior management and information about confidentiality and feedback processes were included with the survey. Facilitators and team leaders, who delivered the surveys, reminded team members to fill out their surveys on work time, insert completed surveys into supplied addressed and reply paid envelopes, seal them, and place them in a designated mail box located in a secure area. The survey was voluntary and if any employee wished not to participate they could return the blank survey in the addressed envelope.

Results

Simple regression analysis was used to examine the effects of transformation leadership on morale. Following this analysis, hierarchical multiple regression was used to examine the effect of morale on the three innovation variables (benefit to patients, benefit to staff, benefit to administration). The hierarchical regression was structured so that innovation in 1997 was controlled when morale in 1997 was used to predict innovation in 1998.

Correlations, means and standard deviations of the variables involved in the analysis are presented in Table 13. From this table it can be seen that morale and transformational leadership are significantly correlated at .49 ($p < .01$). As expected, leadership is not directly correlated with the innovation variables. Hypothesis 1, which stated that transformational leadership would be associated with high morale, was supported. Hypothesis 2 was supported for the group process variable workgroup morale. The remaining aspects of group climate (team orientation, support for new ideas, participative safety, team objectives), however, did not correlate with innovation and so are omitted from the table.

In order to investigate the effects of leadership and morale on workplace innovations, innovation data from 1998, and leadership and morale data from 1997, were obtained. This strategy allows for conjecture about the direction of influence, as innovations in 1998 cannot influence morale or leadership in the previous year, whereas morale or leadership in 1997 can have an effect on innovation in the following year. Innovation in 1997 was controlled to rule it out as a cause of high morale and transformational leadership in 1997, and high innovation in 1998.

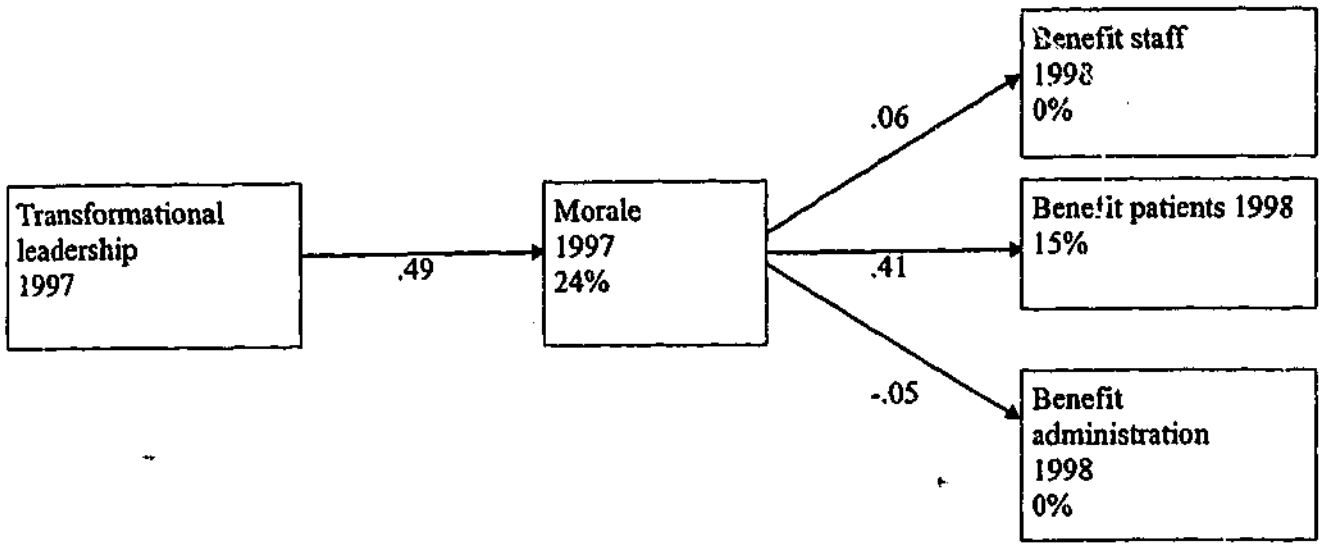
Table 13: Means, Standard Deviations and Correlations between Leadership, Morale and Innovation

Variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Morale	55.42	10.62	-							
2. Transform Ls	61.31	15.29	.49**	-						
3. Benefit to Patients 1998	2.71	.64	.56**	.14	-					
4. Benefit to Admin. 1998	2.42	.56	.16	.14	.52**	-				
5. Benefit to staff 1998	2.86	.51	.21	.13	.61**	.82**	-			
6. Benefit to Patients 1997	1.65	.59	.08	.25	.52**	.39*	.61**	-		
7. Benefit to Admin. 1997	1.54	.55	-.12	.28	.18	.39*	.54**	.73**	-	
8. Benefit to staff 1997	1.90	.81	-.07	.30	.28	.38*	.52**	.82**	.93**	-

* $p<.05$ ** $p<.01$
$n = 45$ workgroups

First, the effect of leadership on morale was investigated using regression analyses. Leadership was strongly related to morale in 1997, accounting for 24% of the variance in morale (beta = .49, $p<.01$) (See Table 13). Second, the innovation variables in 1998 were regressed on morale in 1997. In each case, the innovation data from 1997 was entered at step one as a control, followed by morale in 1997 at step two (See Table 14). Morale in 1997 was related to innovations that produced a measurable benefit to patients in 1998 (beta = .41, $p<.01$, $R^2 = .53$) (See Figure 10).

Figure 10: Model to Illustrate the Relationship between Leadership and Actual Workgroup Innovation



The data from this study show that the relationship between morale and transformational leadership is approximately linear. A plot of residuals against predicted residuals from regressing transformational leadership on morale shows no significant departure from normality. Further, there was no correlation between size of workgroup and number of innovations in each year.

Table 14: Multiple Regression Results: Morale and Innovation

DV = Benefit to Patients 1998	B	R^2
Step 1:		
Benefit to Patients 1997	.84**	
Benefit to Administration. 1997	-.61	
Benefit to Staff 1997	.16	.38**
Step 2:		
Benefit to Patients 1997	.67*	
Benefit to Administration. 1997	-.47	
Benefit to Staff 1997	.21	
Morale 1997	.41**	.53**
DV = Benefit to Administration. 1998		
Step 1:		
Benefit to Patients 1997	.39	
Benefit to Administration. 1997	.51	
Benefit to Staff 1997	-.37	.17
Step 2:		
Benefit to Patients 1997	.32	
Benefit to Administration. 1997	.49	
Benefit to Staff 1997	-.38	
Morale 1997	-.05	.17
DV = Benefit to Staff 1998		
Step 1:		
Benefit to Patients 1997	.62**	
Benefit to Administration. 1997	.63*	
Benefit to Staff 1997	-.61	.40**
Step 2:		
Benefit to Patients 1997	.59*	
Benefit to Administration. 1997	.66	
Benefit to Staff 1997	-.60	
Morale 1997	.06	.40**

* $p<.05$ ** $p<.01$
$n = 45$ workgroups

In summary, there was partial support for Hypothesis 3, which stated that workgroup climate would mediate the effect of leadership on innovation. However, of the climate processes studied (support for new ideas, team orientation, participative safety and workgroup morale), only morale emerged as influential but not as a mediator. Transformational leadership was associated with high morale in workgroups and high morale in workgroups was related to innovations that benefit patients. The effect of transformational leadership on actual innovation was not significant. The findings pertain

only to innovations that benefit patients - no relationships were found among leadership and morale and the other types of innovation. The fact that these links were found between different surveys completed by different people in different years overcomes the problem of common method variance (Podsakoff & Organ, 1986).

Chapter 8: Discussion

This dissertation had three broad aims, the first was to examine, over a period of two years, the relative importance of leadership among other variables in shaping a workplace that values innovation by supporting new ideas emanating from the staff members. The second aim was to discern which, among a number of leadership styles, was the most effective in generating an innovative climate, and to confirm apparent synergies among theories of transformational leadership and conceptual models of innovation. From this finding an assumption was made that where transformational leadership exists, so will a climate for innovation. The third aim was to test this proposition in a study of the impact of leadership on climate and the subsequent impact on implemented innovations over a two-year period in natural work settings. All research was conducted in one hospital, using the same sample over a period of three years within a methodology featuring both longitudinal and cross-sectional designs that secured both quantitative and qualitative data.

The key finding of the research was the strong positive relationship observed between transformational leadership and morale in the same year, and the link between morale and innovations that produced a measurable benefit to patients in the subsequent year. Second, leadership was not directly related to innovation that was judged to benefit patients, administration or staff, rather leadership indirectly affected innovation by increasing morale. Third, leadership did not affect climate for innovation and climate for innovation did not affect actual innovation. This finding is surprising given both the model and findings of Ekvall (described in Chapter 2) and the findings of Study 2 that indicated a positive correlation between transformational leadership and climate for innovation (Wilson-Evered, Härtel & Neale, 2001). Similarly, research reported in earlier chapters showed a predictive relationship between climate for innovation and actual innovation

(Burningham & West, 1995; West & Anderson; 1996). It is possible that this finding is idiosyncratic of these workgroups. One explanation for this contrary result may lie in the purpose of the hospital and hence the staff preferences. The hospital, with a large female workforce, is a specialist hospital focused on the health issues of women and newborns. It is possible that the emotional nature of this workplace promotes a culture underpinned by the values of cohesion, energy and esprit de corps. In such a climate, morale might be held as more fundamental to workgroup performance than other team experiences, such as objectives, orientation and participation. Nevertheless, the study demonstrates the lasting effect of leadership on morale as an element of climate to promote actual workgroup innovations.

Following a discussion of the research limitations, the next section will provide an overview of the findings that emerged from these studies in relation to the clarification of the antecedents and consequences of workgroup innovation, and show how each of the studies have contributed to an understanding of what is required for organizations to ignite and fan the flames of innovation.

Limitations and Future Research

The studies reported in this research are subject to limitations. The major ones include the restricted range of antecedents of individual innovation used in the first study, and the potential for results confounded by common method variance in Study 2. In Study 3, the shortcomings, in terms of level of analysis constraints, brought about by choice of methodology were recognized, as was the chosen focus on only the antecedent approach to the study of innovation. The limitations of the research, the way in which they might be addressed, and direction for future research are discussed in detail below.

Study 1 has weaknesses, principally in the limited range of antecedents included in the study: morale, decision-making, objectives or vision, leadership and support for new

ideas to determine a climate for innovation. The research might be improved with the inclusion of other variables such as reward and recognition (King, 1990), task characteristics, problem solving skills (Scott & Bruce, 1994), reflexivity (West, 2000), well-being (Sonnentag, Dijkstra, Evers, van Knippenberg & van Vianen, 2001), the individual's creative capacity (Amabile, 1983; Kirton, 1978) and challenge, freedom, conflict and risk taking (Ekvall, 1996).

Common method variance, as a consequence of analysis of self-report data within the same questionnaire, was discussed in Chapter 6. In order to eliminate the effects of common method variance, future research should ensure that measures of leadership and innovation are taken at different time periods and with a variety of methodologies, for example, by employing interview questionnaires and external evaluations of innovation. This approach was taken in the third study. Finally, in order to assess the generalizability of my results, subsequent studies should be conducted in different organizational settings, comparing occupational groups and industries in terms of the innovation-leadership relationship. Of particular interest would be to differentiate those teams whose purpose is to be creative from those who are driven to innovation by contemporary economic and competitive pressures.

Second, the data aggregation technique used for the team climate and innovation measures could be substituted with a team consensus technique (Kirkman & Rosen, 1999). There is some evidence that the team consensus technique is a superior predictor of group level outcomes and is more theoretically appropriate for obtaining group level data when compared with the aggregation technique (Kirkman & Rosen, 1999). A combination of aggregate and consensus measures to evaluate group level phenomena is advisable for future research.

The final study also has some methodological limitations. Whereas using natural workgroups is a suitable testing ground to evaluate innovation theory, contrary to research evidence and expectations, no relationship between transformational leadership, team climate and implemented innovations was found. However, in attempting to explain this surprising result, it is possible that characteristics of the sample, mainly female nurses and the use of a single organization, had bearing on the findings. In addition, the organizational context, a women's teaching hospital, might have limited the generalizeability of the specific findings to other situations. Nevertheless, although some of the specific findings may be influenced by the context, the theoretical implications of the findings remain convincing.

In addition to limitations relating to the study design, a qualification is made with respect to the measure of team leadership. These data could be obtained using a group level scale or one designed to measure group leadership (Avolio, 1996). However, this study sought opinions of employees in order to inform interventions. Obtaining reports from other sources, such as interviews and observations, could also enhance measurement of leadership and the information derived. While the methodology used in the study is believed to be sound, these additional approaches need to be considered in replications.

Third, the affective experiences of the workgroup were assessed largely through perceptions of workplace morale. Given the strength of this variable in predicting innovation, future studies should add other affective measures to known group level variables that stimulate innovation (George, 1990; Pirola-Merlo et al., in press). Such findings could augment the theoretical framework of workgroup innovation with a new dimension.

Finally, the research adopted an antecedent approach to the study of innovation. However, an integrated approach that examines both antecedent and processes of

innovation (Savitz et al., 2000) is recognized as appropriate for complex health care settings. Such an approach will improve understanding by providing a rich picture of the context in which innovation emerges, is supported and disseminated. Preferably, such research should also explicate antecedents and social factors influencing innovation at various stages of the innovation-diffusion process. From this work, new theories can be developed or current theories refined that will advance the knowledge of innovation. Further, the organization sciences have recently employed theories from the physical sciences to model organizational processes such as innovation. Seeing organizations as complex adaptive systems, rather than products of linear or hierarchical processes, is viewed by some authors to provide major new insights into both understanding and changing organizations, especially in the health care industry (Ashmos, Duchon & McDaniel, 2000; Zimmerman, 1999).

Future research should test the tentative sub-theory of leadership *for* innovation presented in this thesis and assess the predicted relationship among transformational leadership behaviors and group processes, the team climate for innovation, and actual innovations implemented in the workplace. Alternatively, they could use control and treatment groups and evaluate the effect of a leadership intervention designed to improve transformational leadership capacity and then assess the impact of the two groups on innovation. Also, the continuing debate on the influence of authoritarian styles or participative styles on innovation is yet to be resolved.

Further study of the factor structure of the MLQ with confirmatory factor analysis are necessary to lay to rest the debate on the factor structure of this measure of leadership styles. In this way, future studies could use the emergent rather than the theoretical models to predict innovation and enhance theory.

Implications

Contributions to theory. There are three main theoretical implications deriving from the findings of the first study of this research. First, innovation theories need to consider the incorporation of leadership (West, 1990). Leadership theorists generally agree that leadership is critical for innovation (Bass & Avolio, 1994; House, 1977; Kanter, 1986). However, innovation theories are either not developed (King, 1990) or do not explicitly include leadership (West, 1990). Second, theoretical frameworks of leadership and innovation do not include morale as an integral component. Similarly, studies of group processes or individual innovation have not specifically identified morale as an antecedent of innovation (Farr & Ford, 1990; King, 1990; Scott & Bruce, 1994; West, 1990). However, high morale, group cohesion, energy and enthusiasm have been identified widely as important for group performance (Shamir et al., 1998). Ekvall's (1996) study of innovative and stagnant companies found they were significantly different in a number of key areas: freedom, dynamism, debates and risk taking. Playfulness and dynamism (humour, ease and liveliness) are analogous to morale.

Finally, while leadership support is a necessary prerequisite for innovation and therefore also necessary to support new ideas (Kanter, 1989; Howell & Avolio, 1993), it exerts its impact indirectly through group processes rather than directly on individual behaviors. In this research, data were collated over a three-year period on the staff in a hospital setting undergoing major change. Among the group processes studied, the most significant for enabling innovations was the affectively-oriented experience of high morale. This finding aligns with the results Pirola-Merlo, Härtel, Mann and Hirst (in press) found in their study of R & D teams.

Assumed theoretical and conceptual analogies between transformational leadership and innovation were substantiated by a field study. Accordingly, transformational

leadership was identified as an antecedent of innovative climate, suggesting that the transformational leadership factor should be added to augment West's (1990) theory. The strong positive correlations between transformational leadership and climate for innovation suggest new sub-theory, namely, leadership *for* innovation, which is a composite of the two theoretical constructs of transformational leadership and climate for innovation. Transformational leaders are likely to have the capacity to create a climate for innovation by definition. This finding is endorsed in the comparisons made in Study 2 of the impact of leadership styles on climate for innovation with transformational leadership emerging at the vanguard of the group.

In Study 3, the role of leadership styles on innovation was investigated from the vantage point of integrating two previously separated theoretical perspectives: transformational leadership and climate for innovation. Finding them to be highly correlated, this research addressed the question, "Is transformational leadership effective in producing innovative outcomes?" A transformational leadership style was found to favour high levels of team morale leading to significantly better innovation outcomes with a marked benefit to patients. From the innovation perspective this research questioned, "What predicts innovation?" The predicted antecedents were transformational leadership, support for team objectives, support for new ideas, participative safety, support for team orientation and morale. The findings did not support the theory, suggesting limitations in existing group theories of innovation (West, 1990). Moreover, the results indicate the need to broaden current models of group innovation to include such influences as morale and leadership style.

The results suggest that transformational leadership and morale are related, and that morale may have an important effect on innovation. A central part of contemporary leadership theory is that transformational leaders' inspirational motivation, intellectual

stimulation and individualized consideration will be related to high morale. Certainly, the lack of these experiences among workgroups would be related to low levels of morale. Bass (1985, 1990) argues that transformational leadership will be associated with high levels of confidence in goal achievement through inspirational motivation. A high level of confidence is likely to be related to morale.

Transformational leaders by definition influence or induce change in organizations and individuals (Bass, 1998). The results of this research therefore are consistent with Ekvall's (1996) findings that change-oriented leadership style consistently showed strongest correlations with climate for innovation. Also congruent with Ekvall's (1996) finding that structure-oriented style showed weak or no correlation with climate for innovation were the findings of Study 3, which showed a declining effect on innovation with less active and more ineffective styles of leadership. The results therefore support Ekvall's (1996) conclusion that the climate of the organization is in the hands of the manager.

The findings, obtained in an Australian setting, may reflect international differences in experiences of leadership and innovation. The study used theoretical models developed in the UK and US. Although culturally similar, these nations are separated from the Australian experience by distance and demographic mix. Australia has adopted parts of both cultures and developed particular aspects of its own because of its unique history and geography. Cultural differences may explain the findings that leadership exerted its effect on innovation through stimulating morale, which was not the case in the British setting. Indeed, Alimo-Metcalfe and colleagues (2001) argue that notions of transformational leadership do not 'fit' the British culture. In Australia, notions of transformational leadership appear acceptable (See Parry 1998, 2001; Parry & Sarros, 1996), which is supported by this research. However, a finding that is distinct from that of others, apart

from the work of Shamir and colleagues (1998), is the notion that transformational leadership works through morale rather than directly on innovation, as implicated in American theories. Pirola-Merlo, Härtel, Mann and Hirst (in press) found similar results in their Australian study of R & D teams, showing that team affective climate mediated the relationship between leadership and team performance.

The research reported in this dissertation cannot discount the role of certain personality traits or other characteristics that may enable leaders to have remarkable effects upon followers. Such research, however, fails to provide theoretical links between a given trait and leadership behaviors that result in positive outcomes (Bass & Avolio, 1994; Barge & Hirokawa, 1989; Burns, 1978; House, 1977). It is these links that are necessary for a better understanding of the role of leadership *for* innovation. This research program progresses the theoretical understanding of the parallels among theories of transformational leadership and those of group innovation.

Contributions to Management Practice. In practical terms, the findings of this research indicate that if managers want individuals and workgroups to be innovative, they must ensure the action of supportive-leadership and participatory processes. For practitioners, the findings mean that leaders must be given the skills and awareness to do more than be available and supportive; they must be active in enabling group participation, establishment of shared goals, and an atmosphere of well-being, team spirit and enthusiasm. Most notable among these findings is that the leader has a key role in encouraging *esprit de corps* and generating high morale in the workplace. Morale seems to be the key to producing an environment within which employees perceive their ideas as being supported.

Most industries are expected to develop new and improved systems and ways of working in order to remain viable and competitive in a rapidly changing world. The health

care industry involves the continual introduction of new clinical interventions and technologies designed to improve patient and business outcomes. First, possible strategies to produce improvements in health care management, second, the use of workgroups to generate and implement new ideas, and third, the development of leadership capacity to promote innovativeness in others. This research contributes to management practice by arguing that these two interventions should be viewed as an integrated strategy for generating innovative workplaces, rather than two separate interventions.

Organizational Development. If it can be taken for granted that innovation is necessary and not optional, health care management must ensure the integration of interventions that promote leadership capacity, and those that promote group innovation. Leadership for innovation cannot be learnt in isolation from the group of subordinates and their performance. It is proposed that managers who develop effective transformational leadership qualities are equipped to partner with subordinates who have the contextual knowledge about what enables their performance. Together they can establish a climate supportive of innovation through the discovery and implementation of strategies that foster high morale. Further, it is proposed that these processes cascade through all levels of management with the executive team providing a role model for the operational teams.

Organizations are increasingly including innovation among their espoused and enacted values, either for survival, or for long term sustainability (Yochelson, 1998). The generation, acceptance and diffusion of new ideas and innovations are important whether an organization is embarking upon a long term cultural change program or an urgent short term change strategy (Kanter, 1983; Van de Ven, 1986). Innovation may take the form of business process improvement or broader concerns associated with social and environmental issues (Beer & Walton, 1987). This research suggests that organizational development (OD) strategies designed to increase innovation must include strategic,

structural, team and leadership interventions. These interventions are examined in the context of the systems approach to OD (Burke & Litwin, 1992), which is the framework adopted at the facility within which this research was undertaken.

At the strategic level, the survey process was an intervention (Griffin, Hart & Wilson-Evered, 2000), being part of the diagnostic phase of a large scale OD effort designed to manage both vertical and horizontal integration and cultural change. The horizontal integration strategy involved a planned merger with a major adult teaching hospital. Vertical integration sought to achieve the devolution of authority and accountability to line managers and the increased involvement of all levels of staff in innovation and decision-making.

Both structural change and staff development interventions were employed. Structural interventions assured that stakeholder groups held key roles in both designing and implementing the diagnostic process and the subsequent interventions. Team interventions included facilitation and leadership support to interpret and act on unit level findings from the diagnostic processes. To become an innovation, individual's ideas require nurturing in a context of support and encouragement (Anderson & West, 1996; Burningham & West; 1995; Ekvall, 1996; Schneider, 1990; West, 1996; West & Farr, 1990). The climate for innovation is the context in which new ideas embed, flourish and grow. The aim of the interventions was to enable groups to define the strategies needed to improve the team climate, performance and individual well-being.

Finally, a large-scale leadership development program was implemented starting with senior managers and embracing all levels of line management. The leadership program emphasized cultural change as well as skill development in enhancing team performance and the leadership of innovation and change. Moreover, the program ensured that leaders and managers from the two planned merged institutions collaboratively

worked on projects and learned about the cultural values and priorities of the other group. The plan for the subsequent values-based culture change and the integration program was introduced during the leadership program. All these efforts are ongoing, demonstrating the organizations' commitment to the goals of the initiative and also allowing time for interventions to make a difference.

Implications for Management Knowledge. This research contributes to management knowledge in a number of ways. First, this research found evidence for an indirect relationship between leadership and innovation, but that transformational leadership alone is insufficient to arouse members' innovativeness. Second, this type of leadership creates energy and involvement (high morale) among workgroup members. Applying the results to the workplace, this study suggests that a leader must concentrate on developing skills to inspire, motivate, stimulate, consider and influence others. In doing so, followers may attribute charisma to such leaders. Third, and most important of all, is the role of the transformational leader in encouraging *esprit de corps,* which is demonstrated in enthusiasm and high morale in the workplace. Morale seems to be the key to producing an environment in which employees perceive that their ideas are supported and subsequently introduced, implemented and tested.

The findings are consistent with those of Carless and colleagues (1996) who found that the relationship between transformational leadership and team performance was mediated by group cohesion. These authors emphasize that team performance was affected by the leader behaviors of *modeling the way* and *encouraging the heart* (Kouzes & Posner, 1987), leader self-efficacy and the degree to which the leader establishes cohesion among group members. Their study, however, was cross-sectional in design. This research, which used a longitudinal design, also found leadership and morale to be important for team

performance. The present findings, therefore, increase the confidence with which the critical role of morale in team performance can be accepted.

Conclusion

In the current turbulent business environment, managers need to know what to do in order to increase the innovation potential and acceptance of change in their organizations. The understanding of innovation and creativity can provide guidelines to managers. Innovation is a popular contemporary pursuit, as evidenced by the broad interest in this topic by researchers and the popular literature and the establishment of Innovation Summits (See Amabile, 1983; Damanpour, 1987, 1991; Kanter, 1983, 1997; West & Farr, 1990; Yochelson, 1998). Similarly, the study of leadership is extensive (Bass, 1985; Bass & Avolio, 1994; House, 1977; Howell & Avolio, 1993, Kanter, 1983, 1997; Yammarino et al., 1993). However, the role of leadership in supporting innovation has been a contentious issue in the study of social and organizational influences on innovation at work (King, 1990). The first study was able to contribute new understanding about the antecedents of innovation. Specifically, leadership is important and the supportive leader needs to establish a climate of excitement, encouragement, participation in decision-making, aspiration to work toward shared goals or vision, and support for new ideas in order to enable the promotion of innovation in the workplace. The study highlighted the need to further explore leadership-innovation by first examining how different leadership styles affect innovation and second, by testing the natural extension of the theoretical contention that the two are two sides of the same coin (Schein, 1987).

As both public and private sector organizations compete in a volatile fiscal environment, employees at all levels are exhorted to make changes that result in continually improved or new products, processes or procedures. This research questioned which leadership style has the most positive influence on a climate for innovation. The

study combines theories of group level innovation (West & Anderson, 1996; West, 1990) with theories of leadership, in particular transformational leadership (Bass & Avolio, 1985, 1995; House, 1977), and theories of organizational climate (James & James, 1989; James & McIntyre, 1996) to develop a framework for investigating the impact of leadership style on innovation at work. Using data from an organization-wide survey in a public hospital, this research sought to combine these theoretical approaches to produce a model that illustrates the way in which leadership characteristics engender innovativeness in workgroups. In summary, this research was able to explicate conceptual synergies among theories of transformational leadership and group climate for innovation as predicted. Moreover, the study demonstrated the importance of transformational leadership in generating a climate for innovation in workgroups and produced a sub-theory of leadership *for* innovation.

This thesis makes a significant contribution to the understanding of the role of leadership in the innovative performance of workgroups and the application of theories developed largely in the UK and US to the study of Australian health care management. However, the picture is far from complete. Future research must address structural factors that might impact on the leader-workgroup innovation process, such as tenure, size, resource allocation and group composition. Group characteristics such as length of time working together, number of innovators in the group, type of work done by the group, educational level and commitment to health care may also be important for innovation. Most important is the need to evaluate the relative influence of both affective and cognitive influences on innovation. This research found that the group feelings of *esprit de corps* explained innovation outcomes in the presence of a transformational leader more than any other group process studied. The clear message is that investing in the development of leadership behaviors that enhance workgroup morale is an important management strategy

that can lead to the generation of innovations that benefit patients. Indeed, leaders can ignite the flames of innovation if they inspire, consider and support their teams.

Appendix 1: Instructions to the Expert Team

Instructions to the Expert Team

The task that the expert team is being asked to engage in will involve rating the innovations reported by workgroups in 1997 and in 1998. Specifically, the expert team is requested to provide global ratings of the 1997 and 1998 data on the following dimensions;

1. Magnitude
2. Novelty
3. Radicalness
4. Effectiveness
5. Benefit to patients
6. Benefits to administration
7. Benefit to staff well-being

So, for example, if a workgroup indicated they had made three innovations in 1997, the expert team would need to be make a judgment, based on ALL THREE INNOVATIONS in 1997, as to the magnitude, novelty, effectiveness, benefit to patients, benefit to administration, and benefit to staff well-being of these innovations as a group.

The expert team is asked to rate the innovations reported by workgroups for 1997 first, and then to proceed to the innovations reported by the workgroups in 1998.

When all ratings are completed the expert team should return to Corporate Development the following information;

A) For 1997 there should be one sheet of paper with 7 ratings (ranging from 1-5) for each workgroup.

B) For 1998 there should be one sheet of paper with 7 ratings ging from 1-5) for each workgroup.

Thank you for your time and effort in completing this task.

Appendix 2: Inventory of Innovations

E. Wilson-Evered (2003). "The leadership and workgroup requirements that organizations need to ignite and fan the flames of innovation"

Appendix 3: Staff Involvement Questionnaire

1. What improvements to work processes or work practises are you doing currently (eg the way you do you tasks and organize your work and how you work with other areas of the hospital to improve services).

2. What improvements to the work environment or workplace relations are you currently doing? (may include team/staff meetings, developing plans for managing change in your group, discussions to aid in the improvement of workgroup performance and satisfaction)

3. What have you done to involve or inform staff about the integration of selected services and the hospital redevelopment?

4. Are there any issues you see affecting or have impacted on your workgroup associated with the integration?

5. What would be the best way to collect staff opinions about the integration?

6. At what level would you place you department's level of morale? (Could use a scale for comparison against results of SOS)

Very Low Level Morale						Very High Level Morale
1	2	3	4	5	6	7

Comments

E. Wilson-Evered (2003). "The leadership and workgroup requirements that organizations need to ignite and fan the flames of innovation"

7. Even though it is a time for great change, we know staff are being very creative so are interesting in hearing about any NEW (to your area) services, products, procedures, processes, initiatives including research and quality programs that have been introduced over the last year. (Just has to be new for your area – may have been already used or tried elsewhere). List below then rate EACH INTIATIVE according to table – below.

Ask the interviewee to rate all initiatives mentioned including those over the page in terms of their impact. Specifically, the person requested to provide global ratings of the 2000-2001 initiatives on the following dimensions;

2. Magnitude (1-5) — **Magnitude:** How great was the consequences of this change or new activity (1 = not at all great in comparison to other changes. 5= very great in comparison to other changes

3. Novelty (1-5) — **Novelty:** How new or unusual was this change or new activity (1 = not at all novel. 5= extremely novel

4. Radicalness (1-5) — **Radicalness:** The extent to which this change or new activity will change the status quo (1 = not at all radical. 5= extremely radical

5. Effectiveness (1-5) — **Magnitude:** The degree to which the new process or action achieved what you wanted it to do. 1= not at all effective 5 = significantly effective

6. Benefit to patients (1-5) — **Benefit to Patient Care:** 1 = will not benefit patient care directly 5 = will very greatly benefit patient care

7. Benefits to administration (1-5) — **Benefit to Administrative Efficiency:** 1 = will not benefit administrative efficiency compared to other changes 5 = will benefit administrative efficiency compared to other changes

8. Benefit to staff well-being (1-5) — **Benefit to Staff Well Being:** 1 = will not benefit staff well being or team functioning 5 = will greatly benefit staff well being or team functioning

Appendix 4: Survey on Working in the Health Service

ID_____

This identification number will be kept separately from your name.

A Survey on Working in the Health Service

IT IS IMPORTANT TO READ THIS PAGE

What is this survey?

This is a survey of your views about your work within this health facility. The survey concerns your opinions of the job that you do, and the health facility where you work.

We want to know *your* personal views. This is not a test. There are no right or wrong answers.

What are the questions about?

The survey is divided into 3 sections. The **first section** asks you for background details about you and the work you do. It is important for us to have this information so we can distinguish between different groups, such as doctors, nurses and managers. The **second section** is concerned with your views about your job. The **third section** allows you to add your comments.

How should I respond? Please read each question carefully. For each statement you are asked to circle one response which best fits your views. Please answer all the questions as openly and honestly as possible. Respond according to your first reaction. Do **not** spend too long on any one question.

For example, the question below asks about who plans your work. If you plan quite a lot of your work, you would answer like this:

	Not at all	Just a little	Moderate amount	Quite a lot	A great deal
	1	2	3	4	5
To what extent do you plan your own work?			(3)		

YOUR ANSWERS ARE ABSOLUTELY CONFIDENTIAL

You will be sending your survey directly to the University of Queensland (via internal mail). There, they will be analysed by University of Queensland staff.

Findings will be made available on request to all who participate in such a way that it is not possible for individuals to be identified. The health facility where you work will **at no time** have access to any of the surveys completed by individuals.

Please read every question carefully before responding and answer every question.

PART 1: DEMOGRAPHIC DETAILS

It is important that we know some of your demographic details. This will enable us to compare the views of different groups of staff. Remember that your individual responses are totally confidential.

1. Gender ❑ Female ❑ Male
2. Age in years _____
3. What is the title of your position *(e.g., clinical nurse, administrative officer level 2)*

   _____
4. Please describe your duty roster *(More than one response may be ticked)*

❑ Day shifts only (between 7:30 am and 5:00 pm or similar) Mon - Fri

❑ Rotating days off - Day shift

❑ Rotating days off - Night shift

❑ Day, afternoon and night shifts

❑ Part time employment

❑ Other *(Please explain)* _____

5. Length of employment at this Health Service Facility? _____ years.
6. Length of employment in your current job role? _____ years.
7. Are you employed on fixed-term or rotation? ❑ Yes ❑ No
8. If yes, how much longer will you be at this Health Facility? _____years _____months

CLIMATE SCALES
(Supportive Leadership, Morale and Participative Decision-Making - PDM)

*Listed below are a number of statements that could be used to describe some aspects of your workplace. Please read each statement carefully and indicate the extent to which you **AGREE** that the statement **actually applies to your workplace** by circling the appropriate number on the following scale.*

	Strongly Disagree 1	2	3	4	Strongly Agree 5

1.	I am able to approach the supervisors in this workplace to discuss concerns and grievances. (Supportive Leadership)	1	2	3	4	5
2.	There is a good team spirit in this workplace.(Workplace Morale)	1	2	3	4	5
3.	There are forums in this workplace where I can express my views and opinions.(PDM)	1	2	3	4	5
4.	The supervisors don't really know the problems faced by staff in this workplace. (Supportive Leadership)	1	2	3	4	5
5.	There is a lot of energy in this workplace. (Workplace Morale)	1	2	3	4	5
6.	I am happy with the decision-making processes used in this workplace. (PDM)	1	2	3	4	5
7.	There is support from the supervisors in this workplace. (Supportive Leadership)	1	2	3	4	5
8.	The morale in this workplace is high. (Workplace Morale)	1	2	3	4	5
9.	Staff are frequently asked to participate in the decisions concerning administrative policies and procedures in this workplace. (PDM)	1	2	3	4	5
10.	There is good communication between the staff and supervisors in this workplace. (Supportive leadership)	1	2	3	4	5
11.	Staff go about their work with enthusiasm. (Workplace Morale)	1	2	3	4	5
12.	The supervisors in this workplace can be relied upon when things get tough.(Supportive Leadership)	1	2	3	4	5
13.	Staff take pride in this workplace. (Workplace Morale)	1	2	3	4	5
14.	There is opportunity for staff to participate in workplace policy and decision-making. (PDM)	1	2	3	4	5

TEAM CLIMATE [1]

The following questions ask about the climate or atmosphere in your workgroup or team. A team is defined here as a group of staff working together. Although you may be involved with many different teams, respond to the questions in reference to the team with whom you are most involved, or share the most common goals. For Allied Health Professionals, this may mean your own Department, but it is up to you to decide.

For each question, consider how your team tends to be in general, or how you feel in general about the team. Please circle the most appropriate response for each question.

Please indicate below which team you are referring to when responding to the questions.

The team with whom I am most involved is *(please tick one box)*:

- ☐ my work area *(e.g., Pharmacy; Medical Records)*
- ☐ other staff from my profession *(e.g., Obstetrics medical team)*
- ☐ a multi-disciplinary team *(e.g., M17; clinic; theatre)*
- ☐ other *(Please explain)* _____

Team Orientation

This part is about how you feel the team monitors and appraises the work it does. Consider to what extent each of the following questions describes your team. Please circle the response which you think best describes your team.

		Not At All			Somewhat			Completely
		1	2	3	4	5	6	7
1.	Do your team colleagues provide useful ideas and practical help to enable you to do the job to the best of your ability?	1	2	3	4	5	6	7
2.	Do you and your colleagues monitor each other so as to maintain a high standard of work?	1	2	3	4	5	6	7
3.	Are team members prepared to question what the team is doing?	1	2	3	4	5	6	7
4.	Does the team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome?	1	2	3	4	5	6	7
5.	Do members of the team build on each other's ideas in order to achieve the best possible outcome?	1	2	3	4	5	6	7
6.	Is there a real concern among team members that the team should achieve the highest standards of performance?	1	2	3	4	5	6	7
7.	Does the team have clear criteria which members try to meet in order to achieve excellence as a team?	1	2	3	4	5	6	7

[1]Team Climate Inventory (TCI) Used with permission of Professor Michael West
Anderson, N. and M. A. West (1996). The Team Climate Inventory: Development and its applications in team building for innovativeness. *European Journal of Work and Organisational Psychology 5*, 53-66.

Support for New Ideas

This part deals with attitudes towards change in your team. Please indicate how strongly you agree or disagree with each of the following statements as a description of your team by circling the appropriate number.

Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1	2	3	4	5

1.	This team is always moving toward the development of new answers	1	2	3	4	5
2.	Assistance in developing new ideas is readily available	1	2	3	4	5
3.	This team is open and responsive to change	1	2	3	4	5
4.	People in this team are always searching for fresh, new ways of looking at problems	1	2	3	4	5
5.	In this team we take the time needed to develop new ideas	1	2	3	4	5
6.	People in the team cooperate in order to help develop and apply new ideas	1	2	3	4	5
7.	Members of the team provide and share resources to help in the application of new ideas ...	1	2	3	4	5
8.	Team members provide practical support for new ideas and their application	1	2	3	4	5

Team Objectives

This part of the survey is concerned with the objectives of your team. The following statements concern your understanding of your team's objectives. Circle the appropriate number to indicate how far each statement describes your team.

Not At All			Somewhat			Completely
1	2	3	4	5	6	7

1.	How clear are you about what your team's objectives are?	1	2	3	4	5	6	7
2.	To what extent do you think they are useful and appropriate objectives?	1	2	3	4	5	6	7
3.	How far are you in agreement with these objectives?	1	2	3	4	5	6	7
4.	To what extent do you think other team members agree with these objectives?	1	2	3	4	5	6	7
5.	To what extent do you think your team's objectives are clearly understood by other members of the team?	1	2	3	4	5	6	7
6.	To what extent do you think your team's objectives can actually be achieved?	1	2	3	4	5	6	7
7.	How worthwhile do you think these objectives are to you?	1	2	3	4	5	6	7
8.	How worthwhile do you think these objectives are to the team?	1	2	3	4	5	6	7
9.	How worthwhile do you think these objectives are to the wider society?	1	2	3	4	5	6	7
10.	To what extent do you think these objectives are realistic and can be achieved?	1	2	3	4	5	6	7
11.	To what extent do you think members of your team are committed to these objectives?	1	2	3	4	5	6	7

Participation in the Team

This part deals with the amount of participation in your team.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

1.	We share information generally in the team rather than keeping it to ourselves	1	2	3	4	5
2.	We have a 'we are in it together' attitude	1	2	3	4	5
3.	We all influence each other	1	2	3	4	5
4.	People keep each other informed about work-related issues in the team	1	2	3	4	5
5.	People feel understood and accepted by each other	1	2	3	4	5
6.	Everyone's view is listened to even if it is in a minority	1	2	3	4	5
7.	There are real attempts to share information throughout the team	1	2	3	4	5
8.	We keep in regular contact with each other	1	2	3	4	5
9.	We interact frequently	1	2	3	4	5
10.	There is a lot of give and take	1	2	3	4	5
11.	We keep in touch with each other as a team	1	2	3	4	5
12.	Members of the team meet frequently to talk both formally and informally	1	2	3	4	5

E. Wilson-Evered (2003). "The leadership and workgroup requirements that organizations need to ignite and fan the flames of innovation"

MULTIFACTOR LEADERSHIP QUESTIONNAIRE (MLQ)[2]

Your supervisor's leadership style

This section of the survey is to describe the leadership style of your direct supervisor as you perceive it.

Please answer all items on this answer sheet. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank. Judge how frequently each statement fits the person you are describing.

Use the following rating scale:

Not at all	Once in a while	Sometimes	Fairly often	Frequently or always
0	1	2	3	4

THE PERSON I AM RATING. . .

1.	Provides me with assistance in exchange for my efforts	0	1	2	3	4
2.	Re-examines critical assumptions to question whether they are appropriate	0	1	2	3	4
3.	Fails to interfere until problems become serious	0	1	2	3	4
4.	Focuses attention on irregularities, mistakes, exceptions, and deviations from standards	0	1	2	3	4
5.	Avoids getting involved when important issues arise	0	1	2	3	4
6.	Talks about their most important values and beliefs	0	1	2	3	4
7.	Is absent when needed	0	1	2	3	4
8.	Seeks differing perspectives when solving problems	0	1	2	3	4
9.	Talks optimistically about the future	0	1	2	3	4
10.	Instills pride in me for being associated with him/her	0	1	2	3	4
11.	Discusses in specific terms who is responsible for achieving performance targets	0	1	2	3	4
12.	Waits for things to go wrong before taking action	0	1	2	3	4
13.	Talks enthusiastically about what needs to be accomplished	0	1	2	3	4
14.	Specifies the importance of having a strong sense of purpose	0	1	2	3	4
15.	Spends time teaching and coaching	0	1	2	3	4
16.	Makes clear what one can expect to receive when performance goals are achieved	0	1	2	3	4
17.	Shows that he/she is a firm believer in "If it isn't broken, don't fix it."	0	1	2	3	4
18.	Goes beyond self-interest for the good of the group	0	1	2	3	4
19.	Treats me as an individual rather than just as a member of a group	0	1	2	3	4
20.	Demonstrates that problems must become chronic before taking action	0	1	2	3	4
21.	Acts in ways that builds my respect	0	1	2	3	4
22.	Concentrates his/her full attention on dealing with mistakes, complaints, and failures	0	1	2	3	4
23.	Considers the moral and ethical consequences of decisions	0	1	2	3	4
24.	Keeps track of all mistakes	0	1	2	3	4
25.	Displays a sense of power and confidence	0	1	2	3	4

26.	Articulates a compelling vision of the future	0	1	2	3	4
27.	Directs my attention toward failures to meet standards	0	1	2	3	4
28.	Avoids making decisions	0	1	2	3	4
29.	Considers me as having different needs, abilities, and aspirations from others	0	1	2	3	4
30.	Gets me to look at problems from many different angles	0	1	2	3	4
31.	Helps me to develop my strengths	0	1	2	3	4
32.	Suggests new ways of looking at how to complete assignments	0	1	2	3	4
33.	Delays responding to urgent questions	0	1	2	3	4
34.	Emphasizes the importance of having a collective sense of mission	0	1	2	3	4
35.	Expresses satisfaction when I meet expectations	0	1	2	3	4
36.	Expresses confidence that goals will be achieved	0	1	2	3	4
37.	Is effective in meeting my job-related needs	0	1	2	3	4
38.	Uses methods of leadership that are satisfying	0	1	2	3	4
39.	Gets me to do more than I expected to do	0	1	2	3	4
40.	Is effective in representing me to higher authority	0	1	2	3	4
41.	Works with me in a satisfactory way	0	1	2	3	4
42.	Heightens my desire to succeed	0	1	2	3	4
43.	Is effective in meeting organizational requirements	0	1	2	3	4
44.	Increases my willingness to try harder	0	1	2	3	4
45.	Leads a group that is effective	0	1	2	3	4

[2]Avolio, B. J., Bass, B. M. and Jung, D. I. (1995). *MLQ Multifactor Leadership Questionnaire: Technical Report.* Palo Alto, CA: MindGarden. Produced with permission of MindGarden 1997.

PART 3: YOUR COMMENTS

This page is optional.

☐ *Please tick here if you do not wish this information to be used as quotes in the feedback report.*

1. Please indicate any areas of your work life that are of concern to you (not covered in this survey). Please list them in order of importance.

2. Please make suggestions about ways that you think each of these problems may be resolved. Please list them in order of importance.

3. Please comment on any other areas of your work that you really enjoy.

4. Are there any suggestions that you can make to improve this survey?

5. Please comment on any changes in practice, processes, procedures or any other aspects of work in your area that have resulted in improvements. State what was done, what was improved and how this was done.

Collaborative Initiative of Health Department, University of Queensland and University of Melbourne.

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