

# **Loneliness in the Workplace**

---

**A thesis submitted in fulfilment  
of the requirements for the degree of**

**Doctor of Philosophy  
in  
Psychology**

**at the  
University of Canterbury**

**Sarah Louise Wright**

**2005**

## Abstract

Loneliness in the workplace has received relatively little attention in the literature. The research surrounding loneliness tends to focus almost exclusively on personal characteristics as the primary determinant of the experience, and largely ignores the workplace as a potential trigger of loneliness. As such, personality tends to be overestimated as the reason for loneliness, whilst only modest emphasis is given to environmental factors, such as organisational environments. Therefore, the overall aim of this thesis was to explore the notion of loneliness in the workplace, with a particular emphasis on examining the antecedents and outcomes of its development in work contexts. The first stage of the research included the development and empirical examination of a scale measuring work-related loneliness. A 16-item scale was constructed and tested for its reliability and factor structure on a sample of 514 employees from various organisations. Exploratory factor analysis indicated two factors best represent the data, namely Social Companionship and Emotional Deprivation at Work. For the main study, a theoretical model was constructed whereby various antecedents (personal characteristics, social support, job characteristics, and emotional climate) were hypothesised to influence the development of work-related loneliness, which in turn was thought to affect employee attitudes and wellbeing. Employees from various organisations were invited to participate in the online research via email, which generated 362 submissions from diverse occupational groups. Structural equation modelling techniques were used to assess the hypothesised model, which was evaluated against a number of fit criteria. The initial results provided limited support for the Loneliness at Work Model. Consequently, a number of adjustments were necessary to obtain sufficient fit. The modified model suggests that organisational climate (comprising climate of fear, community spirit at work, and organisational fit) serves to simultaneously predict the emotional deprivation factor of loneliness (made up of seven items) and employee attitude and wellbeing. The results indicate that environmental factors such as fear, lack of community spirit, and value congruence play a role in the experience of work-related loneliness and have an overall negative effect on employee withdrawal behaviours and job satisfaction. The findings from this study offer insight into possible areas for organisational intervention and future research.

## Acknowledgements

Carrying out a doctoral degree can potentially be a lonely and isolating experience. Fortunately, I have the following people to thank for keeping loneliness and stress at bay during the past three years:

First and foremost I would like to thank my husband John, as without his dedication, plentiful support and unwavering encouragement the completion of this research degree would not have been possible.

Generous thanks go to Dr Chris Burt and Professor Ken Strongman for their joint supervision of this thesis, and for responding so readily and insightfully to requests for advice – irrespective of their own time constraints. Thanks go to Robyn Daly and John Barton in the Psychology Department for always being exceptionally helpful and infinitely resourceful. Thanks also to Averil Overton, who provided timely psychological insight regarding the thesis topic.

This research was generously supported by the Foundation for Research, Science and Technology by way of a Top Achiever Doctoral Scholarship. I am exceptionally grateful to the Foundation for their provision of financial assistance and numerous professional developmental opportunities. A research grant and two conference grants were also provided by the University of Canterbury Psychology Department. Finally, I am thankful for the cooperation of the respondents who selflessly took the time to participate in the research.

Various sections from Chapters Three and Four appear in the following book chapter:

Wright, S. L. (2005). Organisational climate, social support and loneliness in the workplace. In N. Ashkanasy, C. Hartel and W. Zerbe (Eds.), *The effect of Affect in Organizational Settings - Research on Emotion in Organizations*. Elsevier.

## CONTENTS

	<b>Page</b>
Abstract .....	ii
Acknowledgements .....	iii
<b>Chapter One ~ An Overview of the Research</b> .....	<b>1</b>
Background to the Study .....	2
Significance of the Study .....	3
Why Study Loneliness at Work? .....	4
Research Objectives and Purpose of the Study .....	6
<b>Chapter Two ~ The Concept of Loneliness</b> .....	<b>8</b>
A Brief History on the Study of Loneliness.....	9
Defining and Conceptualising Loneliness .....	11
Distinguishing Loneliness from Similar Psychological Constructs .....	16
Theories and Perspectives on Loneliness .....	20
Empirical Studies on the Correlates of Loneliness .....	28
Factors Relating to the Person .....	29
Factors Relating to the Situation .....	35
An Interaction Approach to the Study of Loneliness .....	37
Coping with Loneliness .....	38
<b>Chapter Three ~ Loneliness in the Workplace</b> .....	<b>41</b>
Loneliness at Work ~ A Neglected Area of Research .....	44
General Literature on Loneliness in Relation to the Workplace .....	45
Empirical Studies on Workplace Loneliness .....	48
Related Areas of Research and Literature .....	55
Towards a Conceptualisation and Definition of Workplace Loneliness ...	62
<b>Chapter Four ~ Development of the Loneliness at Work Scale</b> .....	<b>68</b>
Methodological Approaches to Assess Loneliness .....	68
Unidimensional and Multidimensional Measures of Loneliness .....	70

The Measurement of Emotional and Social Loneliness .....	75
The Measurement of Work-Related Loneliness .....	77
Development of the Loneliness at Work Scale Items .....	77
Study One ~ Exploratory Factor Analysis and Reliability .....	82
Study Two ~ Confirmatory Factor Analysis .....	87
<b>Chapter Five ~ The Loneliness at Work Model: Conceptual and</b>	
<b>Theoretical Development .....</b>	<b>98</b>
Core Assumptions Underlying the Loneliness at Work Model .....	100
Personal Characteristics .....	103
Sources of Social Support .....	106
Job Characteristics .....	110
Organisational Climate .....	113
Employee Attitudes .....	117
Wellbeing Outcomes .....	119
<b>Chapter Six ~ Evaluating the Loneliness at Work Model using Structural</b>	
<b>Equation Modelling Techniques .....</b>	<b>124</b>
Research Measures .....	124
Piloting the Questionnaire .....	131
Procedure and Sample .....	132
Descriptive Statistics and Preliminary Analyses .....	132
Correlations between the Research Variables .....	135
Justification for Structural Equation Modelling .....	138
Structural Equation Modelling Method .....	139
Model Refinement Process .....	144
Results: Measurement Models .....	146
Results: Structural Model .....	155
Summary .....	161
<b>Chapter Seven ~ Discussion and Conclusions .....</b>	<b>162</b>
Methodological Approach .....	163
The Loneliness at Work Scale .....	170

The Loneliness at Work Model .....	178
Alternative Frameworks for Understanding Loneliness at Work .....	184
Interventions for Loneliness .....	190
Conclusions .....	197
References .....	198
Appendices .....	234
Appendix 1: Initial Pool of Items for the Loneliness at Work Scale .....	235
Appendix 2: Revised Pool of Items for the Loneliness at Work Scale .....	238
Appendix 3: Research Questionnaire for Main Study .....	241
Appendix 4: Table of Means, Standard Deviations, Ranges and Correlations Before and After Multiple Imputation Calculations .....	266

**LIST OF TABLES**

<b>Table</b>		<b>Page</b>
4.1	Item-Total Correlations and Factor Analysis Pattern Matrix for the Loneliness at Work Scale .....	86
4.2	Fit Statistics for the Single-Factor and Two-Factor Loneliness at Work Measurement Models .....	95
6.1	Means, Standard Deviations, Ranges and Alpha Coefficients of the Variables in the Study .....	133
6.2	Correlation Matrix of the Research Variables .....	137
6.3	Fit Statistics for the Original and Final Measurement Models for the Antecedents of Loneliness at Work .....	150
6.4	Fit Statistics for the Original and Final Measurement Models for the Outcomes of Loneliness at Work .....	154
6.5	Fit Statistics for the Original and Final Structural Models .....	159

## LIST OF FIGURES

<b>Figure</b>	<b>Page</b>
4.1 Single-Factor Structure of the Loneliness at Work Scale .....	93
4.2 Two-Factor Structure of the Loneliness at Work Scale .....	94
5.1 The Loneliness at Work Model .....	99
6.1 Architecture for the Measurement and Structural Models .....	141
6.2 Original Measurement Model for the Antecedents of Loneliness at Work .....	147
6.3 Final Measurement Model for the Antecedents of Loneliness at Work .....	150
6.4 Original Measurement Model for the Outcomes of Loneliness at Work .....	152
6.5 Final Measurement Model for the Outcomes of Loneliness at Work .....	154
6.6 Original Structural Model .....	156
6.7 Final Structural Model .....	159



## CHAPTER ONE

### An Overview of the Research

*“I’m feeling very lonely at work. I can spend an entire day here without anyone in my department talking to me. I am usually very friendly and chatty and make friends wherever I work. I can’t seem to get people here to warm up at all – they’re nice but not very sociable. It depresses me, and now I feel as if I hate my job and everyone here.”*

The note above was recently posted on a British work and career website ([www.ivillage.co.uk](http://www.ivillage.co.uk); Mitchell, 2003). In responding to this person’s post, a counsellor provided advice focussing on the individual’s negative reaction to their work environment. The counsellor advised that the lonely person was being self-interested in not demonstrating a reciprocal interest with other employees in the organisation. Moreover, according to the counsellor, if this individual happened to look upon their job as an opportunity to socialise it could be misconstrued and resented by fellow co-workers. In this ‘Aunt Agatha’ type response, the source of the employee’s loneliness rests entirely with the individual’s self-indulgent social perception, despite their reported gregarious nature. While it is true that many lonely people fail to capitalise on interpersonal engagements (Marangoni & Ickes, 1989) and learn to expect rejection from others (Goswick & Jones, 1981), research shows that loneliness has no relationship with self-focus (Green & Wildermuth, 1993), despite popular opinion indicating that loneliness is driven by self-centred cognitions and behaviours.

In essence, the advice given to the lonely worker makes no mention of possible mitigating factors contributing to their feelings of loneliness. Such extenuating factors could include for example, the social and emotional climate of the organisation, support from supervisors and co-workers, or heavy workload and pressure. Whilst it is recognised that personality, shyness and social competence do play a significant role in the development of loneliness (e.g. Wittenberg & Reis, 1986) recurring organisational factors are often overlooked as reasons for the onset of work-based loneliness.

The overall purpose of this thesis is to consider the role of loneliness in the workplace, and to explore the antecedents and outcomes of its development in the work environment. Therefore, the goal of this introductory chapter is to briefly consider the nature and objectives of the research topic and to introduce the components of the study, each of which will be detailed more fully in subsequent chapters.

### ***Background to the Study***

It is generally agreed by contemporary researchers that loneliness is a psychological state that results from deficiencies in a person's social relationships, either qualitatively or quantitatively (Peplau & Perlman, 1982). Research suggests that loneliness is a distressing experience, which is detrimental to psychological health and wellbeing (Murphy & Kupshik, 1992). When asked, most people can quite readily report whether or not they feel lonely, and in fact few people go through life and escape the feelings of being lonely. However, loneliness is often perceived as a selfish pursuit which is driven by interpersonal incompetence or social inhibition. Both in research settings and in the wider population, there appears to be a 'blame the victim' mentality for the development of loneliness. As such, personal factors tend to be overestimated as reasons for social difficulties, whilst only modest emphasis is given to environmental factors. However, it is reasonable to assume not all people are lonely simply because of their disposition. Indeed, there are social situations and environmental characteristics that can contribute to or bring about loneliness.

In order to understand loneliness more accurately, one must not only consider the personality of the individual and the ways in which they operate in their social environment, but also the ways in which the social environment operates on the individual, either causing or perpetuating loneliness. When the environment is not fulfilling social provisions adequately, a usually well-adjusted sociable character can develop the behaviours and thought processes typically attributable to lonely individuals (Ernst & Cacioppo, 1998). It is therefore just as likely that loneliness stems in part from factors in the person's social environment (including the individual's place of work) rather than being exclusively determined by personal deficiencies. Characteristics of the working environment might therefore be

considered “loneliness-provoking factors” (de Jong-Gierveld, 1987, p. 127).

As a general rule, fostering healthy social relationships is important for the effective functioning of an organisation and is considered a necessary prerequisite for organisational health (Moore, 1996; Pfeifer & Veiga, 1999). In many cases, workplace relationships provide companionship for individuals who may not find it elsewhere. However, in some work environments the emphasis is often on individual achievement and competitiveness, volatility, and impersonal social relationships. Such alienating values can hinder the development of sincere relationships, and can potentially conjure up feelings of isolation and loneliness. Although work is largely a social institution, for some employees merely being in a social environment is not sufficient to conquer feelings of loneliness, as was depicted in the opening quote. Most relationships in the workplace are heavily influenced by organisational and job characteristics, such as hierarchical structure, individual competition, and seniority. In some extreme cases, organisations strongly discourage friendship at work for fear of improper behaviour or reduced productivity (Berman, West & Richter, 2002). Despite workplace policy however, it would be expected that a large proportion of employees anticipate some sort of natural socialisation process, which leads to the development of social relationships at work.

### *Significance of the Study*

Despite its pervasiveness in society, the experience of loneliness at work has generated little conceptual discussion and empirical substantiation. In Peplau and Perlman’s (1982) edited book on loneliness, there are five chapters on the developmental perspectives of loneliness. The first chapter discusses childhood loneliness, the second studies loneliness during adolescence while the third chapter examines loneliness during the transition to college. The fourth and fifth chapters then jump to studying loneliness amongst widows or the elderly. There is no mention of the development of loneliness during the years 20-70. It could well be that very few people suffer from loneliness during this time, however a conclusion of this nature is doubtful. Rokach and Brock (1997) have reviewed the literature on loneliness across the life changes and suggest that loneliness is prevalent during childhood, adolescence, retirement, and older age. However, there is very limited research

examining loneliness during an adult's working years where career and family roles are often at their most demanding, in terms of time and available resources. As such, the role of work and the workplace environment have not been appreciated in the loneliness literature or in empirical studies on the development of loneliness. While it is important to study loneliness in vulnerable groups and to isolate effective treatments, it is also equally important to examine loneliness across a wider range of the population to allow for valid and generalisable conclusions and interventions.

To date, and to the author's knowledge, only a small number of published studies have specifically examined the nature of loneliness in the workplace. Few, if any, studies have specifically mentioned how the culture of the organisation can affect social isolation and loneliness. Borrowing concepts from the poet Wordsworth (de Botton, 2002), who accused cities of fostering life-destroying emotions, organisations too can harbour unpleasantness, which erodes the potential benefits of being part of a working community. Individuals within the work environment may feel anxious about their employment status or position within the organisational hierarchy. Moreover, in a fearful, untrusting or self-serving environment, some organisations have the potential (either through their operations or through their organisational culture) to foster an 'anxious' environment where genuine or sincere social relationships with other co-workers are not feasible. Such an environment would, to some extent, have a negative effect on even the most gregarious, sociable individuals. Such notions have not however been examined, either theoretically or empirically. Moreover, despite the number of existing scales available to measure various aspects of loneliness, no published scale specifically measures loneliness at work. It would therefore appear that loneliness in the workplace is a neglected topic worthy of further exploration, particularly in the realm of organisational psychology.

### ***Why Study Loneliness at Work?***

Perhaps the most simple and obvious answer to this question is that loneliness is an intuitively interesting phenomenon. Indeed, it is a fact of life for millions of people on a daily basis, and as such tends to have an appeal to a wide-ranging audience. Furthermore, it appears the topic has not previously been studied in any great depth, which makes it more valuable for doctoral research. More broadly however,

loneliness is an experience that can have detrimental consequences; it is therefore important to recognise where it stems from and the best way to overcome or manage it. Because workplaces can potentially exhibit characteristics that can lead to social and emotional isolation, the potential for work-related loneliness to be a personal or an organisational problem should not be overlooked. Loneliness reflects a breakdown in social interaction and the quality of interpersonal relationships. Studying loneliness may therefore give us insight into communication problems in the workplace, or denote the manifestation of a negative organisational climate. It is also equally important for Employee Assistance counsellors, or other mental health workers to have a better understanding of what mediates and influences loneliness in the workplace, in order to provide effective interventions.

An obvious question to ask regarding this type of research is ‘what difference does it make whether or not people are lonely at work?’ Additionally, one may query why this is an important phenomenon for organisational psychologists to analyse and understand. As an aside, it is important to recognise here that the aim of the research is not to suggest that loneliness should be, or can be, completely eliminated. Many employees, particularly those new to management roles would expect to experience a certain degree of loneliness, which may provide important regulatory feedback. However, recognising and appreciating the conditions in which people feel lonely at work may contribute to efforts to avert the more severe, persisting consequences that can result from being chronically lonely. Feeling lonely at work may also affect one’s reasoning, decision making ability, and withdrawal behaviour which may have an adverse impact on personal and organisational effectiveness.

To enable further enquiry into loneliness, it is first necessary to develop a theoretical platform from which future research endeavours can be built. In many respects, the present research would perhaps have been more appealing to a wider audience if it were to research specific issues relating to loneliness, such as examining lay beliefs (e.g. ‘lonely at the top’) or studying loneliness in particular occupational groups. However, such inquiries cannot be answered sufficiently until preliminary research examines the theoretical foundations of loneliness at work, the measurement of the phenomenon, and whether the organisational environment does in fact contribute to loneliness in the workplace.

In their conclusion Marangoni and Ickes (1989, p.124) note that "... in addition to the variables documented to be individually and interactively influential in the experience of loneliness, researchers should focus greater attention on the domain where such variables would be most acutely felt: in the individual's ongoing, long-term, naturalistic patterns of relationship formation, elaboration and dissolution". What better place to start than the workforce; an institution that consumes the majority of waking hours and absorbs most of our social opportunities?

### ***Research Objectives and Purpose of the Study***

In essence, the research described in this thesis is designed to augment our understanding of loneliness and to explore the influence the workplace environment has on the development of loneliness. The research has four broad objectives, which formed the basis for the study:

- 1 To develop a conceptual understanding and definition of loneliness in the workplace through canvassing existing literature and research.
- 2 To develop a psychometrically robust scale to measure loneliness at work.
- 3 To develop a theoretical model for loneliness at work based on relevant literature and anecdotal evidence.
- 4 To test the theoretical model developed in objective 3 for degree of fit, using structural equation modelling.

The concepts from the following two chapters on loneliness and loneliness at work will be carried into subsequent chapters on the development of the Loneliness at Work Scale, the generation of a 'Loneliness at Work' model, and model testing. A general discussion from these studies will be presented and the thesis drawn to a conclusion, with recommendations for future research.

## CHAPTER TWO

### **The Concept of Loneliness**

The phenomenon of loneliness is not easy to conceptualise, yet it is readily reported by many people in a wide range of social circumstances. The importance of loneliness is often reflected in self-help books and in the media, signifying an ever-present societal problem. Celebrities, for instance are often commenting on the loneliness of stardom, despite their social revelry. Judy Garland once reported 'If I am a legend, then why am I so lonely? Let me tell you, legends are all very well if you've got somebody who loves you'. Allen Fromme (1965) who wrote a pocket book on the ability to love argued that loneliness is like the common cold, in that it is easy to catch, difficult to cure, rarely fatal but always unpleasant and sometimes wretched beyond bearing. Loneliness is also a regular topic of enquiry for callers to Lifeline; a telephone counselling service based in New Zealand. According to 2003 statistics approximately 5000 of the 20,000 calls received by Lifeline related to loneliness, reflecting a widespread and pervasive problem.

It is the intention of this chapter to present a conceptual discussion of loneliness followed by a relevant and brief overview of the various theories and empirical literature on the topic. This chapter cannot comprehensively cover all the literature on all aspects of loneliness. To do so would mean canvassing several thousand pieces of literature which could result in tedium and redundancy. Loneliness is a psychologically complex and involved phenomenon, and traverses a wide range of psychological disciplines. For instance, loneliness tends to relate to developmental, cognitive, behavioural, social, biological, and abnormal psychology. Furthermore, the study of loneliness invokes wide-ranging theoretical and methodological issues within each of those subject areas.

Given the ubiquitous nature of loneliness it is not surprising to find a vast empirical base of loneliness literature spanning various disciplines. However, the majority of the research reflects studies on children, adolescents, college students, the elderly, and other social groups expected to be lonely. Such studies, although interesting and valid in themselves, are not fundamental to the present aims of the research. The purpose of

the literature review therefore is to provide a précis and critique of the theoretical and empirical literature which is, in part relevant to the issue of loneliness in organisations.

### *A Brief History on the Study of Loneliness*

Although psychologists have been concerned with loneliness since the 1950s, it has only recently become the focus of substantial research. It was not until the 1970s research on loneliness really began to proliferate, largely stimulated by the publication of Robert Weiss's seminal book in 1973 on emotional and social isolation. This publication fostered the subsequent development of psychometric scales to measure individual differences in loneliness (e.g. Russell, Peplau & Ferguson, 1978). As such, research on loneliness has flourished over the past three decades, stimulating an extensive and wide ranging empirical base<sup>1</sup>. Given the social and demographic changes in the Western world which tend to foster social isolation, such as the high divorce rate, the number of people living alone, poverty and poor health, and the inherent interest in loneliness, it is not surprising that a vast amount of psychological literature has emerged in recent decades.

Early articles on loneliness (of which there are only 35 published prior to 1970) are almost exclusively based on psychiatric commentary as it relates to clinical dysfunctions and psychopathology. Theoretical and clinical literature prior to the 1970s focussed heavily on abnormal mental processes and studied loneliness in conjunction with narcissism, paranoid syndrome, compulsion, psychopathology and alcoholism. Research since this time however has largely focussed on the gathering of quantitative data rather than on clinical observations. Much of the research originating from the late 1970s has been carried out in the United States, particularly by members of Anne Peplau's loneliness programme at UCLA. This research has been particularly concerned with the measurement of loneliness and the link between loneliness and different types of personality characteristics.

---

<sup>1</sup> Throughout this thesis, readers may observe the majority of references are cited from the 1970s and 1980s. This represents the state of loneliness literature, in that the most influential theoretical and conceptual research stemmed from this period. Much of the recent work on loneliness is based on particular aspects of loneliness in specific cohorts of participants.

Despite recent research endeavours, it is surprising that the study of loneliness has been slow and sporadic in its development, given it is a well recognised and common experience for most people. Peplau and Perlman (1982) hypothesised two reasons why the study of loneliness has historically received minimal attention compared to other psychological constructs. Firstly, a great number of people are embarrassed to admit they are lonely, as to do so means acknowledging social failure. Loneliness tends to represent a societal stigma and portrays far-reaching social and emotional characteristics that may or may not be an accurate representation of the lonely individual. Research consistently suggests that lonely individuals are characterised negatively by others, in that they are rated poorly in terms of psychosocial functioning and interpersonal attraction (e.g. Lau & Green, 1992). Furthermore, Peplau and Perlman (1982) argue that this stigma spills over to researchers investigating loneliness. Researchers (and the present author is no exception) may worry that when people find out they are studying loneliness, they will inadvertently think the researcher has unresolved personal problems that are manifesting themselves in their research topic. This is typically an inaccurate assumption, as although studying loneliness requires a certain degree of empathic and experiential understanding of the phenomenon, the research requires a certain degree of reflective objectivity and detachment. In other words, it is unlikely a researcher could approach the topic impartially if they were suffering from the distress of loneliness.

An additional reason why loneliness research has been slow to gain momentum is that there is no convenient or ethical way to manipulate loneliness in the favoured experimental setting. It would rarely be permissible or psychologically possible to accurately manipulate respondents to feel more or less lonely at any given moment. As such, no appropriate or reliable method of manipulating levels of loneliness has emerged in the empirical literature. Given this, researchers often have to ask respondents to recall a time when they felt lonely. However, according to theorists such as Weiss (1973) and Fromm-Reichmann (1959) loneliness is such an intensively negative experience, an individual's memory of it is actively rejected. When pressed to remember self-confessed periods of loneliness, many individuals are reluctant to recall their feelings of loneliness and downplay the distress. Weiss (1973) indicated that an individual who is not presently lonely disassociates with the self who experienced the loneliness, and therefore their memory of the experience is distorted.

As such, requiring research participants to recall lonely feelings can prove methodologically troublesome for research into loneliness.

Perhaps another reason for the sluggish development of loneliness research is that it does not belong to any one discipline; it can be studied by psychologists, sociologists, physicians, anthropologists, and so on. Wood (1986) argues that loneliness is a fundamental or basic emotion and one of the most powerful human experiences. She argues that the feelings associated with loneliness alert individuals to their absence of social relationships. However, it is questionable whether loneliness is in fact an emotion. The theoretical literature on loneliness (which will be reviewed in subsequent sections) tends to conceptualise the concept as being associated with certain emotions, rather than being an emotion in itself. Despite this however, loneliness is rarely studied specifically by emotion researchers. Rather, it is more often seen as a 'social problem'. However, it is also seen as a 'psychological problem', a 'psychiatric problem', a 'cultural problem', a 'socio-economic problem' and a 'biological problem'. As such, the research movement has not embodied and advanced the study of loneliness within one framework. On reviewing the literature on loneliness, there is an impression that the topic has a disjointed set of theoretical underpinnings and empirical foundations, which could account for its sporadic and fragmented development as a research topic.

### *Defining and Conceptualising Loneliness*

The words 'lonely' or 'loneliness' have been given both objective and subjective meanings in their common everyday usage. They are often used in the mass media to refer to isolation, aloneness, solitude or social dysfunction. However, through their broad and wide-ranging use the words have lost their specificity. Loneliness also has various meanings for researchers working in the field of loneliness, and it has further meanings or explanations by clinicians working with the lonely. Such diverse use of the language does not portray the distinction between loneliness caused by being alone and loneliness caused by the symbolic or emotional absence of other people. Strictly speaking however, loneliness is a subjective construct; a self-perceived interpersonal deficiency revealing how an individual experiences the discrepancy

between their personal relationships and their social environment (Peplau & Perlman, 1982).

The nature of how loneliness has been defined has emerged over time, appearing at first to be an all engulfing and undifferentiated painful experience (e.g. Moustakas, 1961) to a more refined conceptualisation including types of loneliness that have different antecedents and various manifestations (e.g. Rokach, 1985; Rook, 1988). Early writings on loneliness defined the concept as “the exceedingly unpleasant and driving experience connected with inadequate discharge of the need for human intimacy ...” (Sullivan, 1953, p. 290). In 1973 Weiss brought about significant advances in the study of loneliness and defined it as “the response to the absence of some particular type of relationship” (Weiss, 1973, p. 17). Weiss and other researchers such as Fromm-Reichmann (1959), approached loneliness from an intimacy perspective, emphasising the inherent and widespread need for intimate connection. Sermat (1978), expanding upon Weiss’ work, defined loneliness as “an experienced discrepancy between the kinds of interpersonal relationships the individual perceives himself as having at the time, and the kinds of relationships he would like to have, either in terms of his past experience or some ideal state that he has actually never experienced” (p. 274).

Peplau and Perlman (1982) have collectively summarised the various definitions of loneliness in their seminal editorial on the construct. There appears to be three major points of convergence among the diverse conceptualisations of loneliness. First, loneliness results from deficiencies in a person’s social relationships, either quantitatively or qualitatively. Second, loneliness is a subjective experience as it is not synonymous with objective social isolation. Third, the experience of loneliness is unpleasant and distressing. Peplau and Perlman outline two principles which form the basis for their framework on loneliness. Firstly, loneliness is a response to a discrepancy between desired and achieved levels of social contact, and secondly, cognitive processes have a moderating influence on feelings of loneliness. The authors assert that while it is helpful to distinguish between the antecedents of loneliness, the experience of being lonely, and the ways in which individuals cope with it, the causal connection between these factors is complex and likely to be circular.

Fundamentally, most contemporary theorists agree (to a greater or lesser extent) that loneliness is a psychological state that results from deficiencies in a person's social relationships, either qualitatively or quantitatively (Peplau & Perlman, 1982). Rook (1984a, p. 1391) describes loneliness as an "enduring condition of emotional distress that arises when a person feels estranged from, misunderstood, or rejected by others and/or lacks appropriate social partners for desired activities, particularly activities that provide a sense of social integration and opportunities for emotional intimacy". Such a definition excludes those people who chose to limit or refrain from social contact.

In more recent times there have been a number of articles theorising on the experiential nature of loneliness. In his account of loneliness Killeen (1998) described loneliness as a pervasive, distressing and debilitating condition that can affect a wide range of people. He comments that loneliness "can make you feel as though you are the only person in the world ... it can make you feel totally isolated and useless; that your life is without purpose. It can make you look for other things to fill the painful abyss of your life ... all in all, it is a very destructive condition, and it can cause a vicious downward spiral, because the more lonely one becomes, the more one is isolated even further from 'normal' society, and without care, one can 'go under'" (p. 763). He goes on to say that loneliness "is there in the morning, keeps you company for the rest of the day, and goes to bed with you at night. It is horrible, wretched state of being, and at the same time, is a strange chameleon-like phenomenon. It is as individual as your every thought ... one moment you are feeling alone but comfortable; the next minute you feel like you are the only person in the world ..." (p. 769). In this way Killeen perceives loneliness as a chronic trait-like characteristic perpetuated by a self-focussed society, and as such it never really goes away.

Given such diverse definitions ranging from scientific classification to phenomenological accounts, it appears that loneliness is made up of a myriad of subjective and emotional responses that come together as a multifaceted experience. In itself, it is a highly individual and ambiguous construct, which lacks a specific or defining set of cognitions, emotions, or behaviour (Marangoni & Ickes, 1989). As such, there is no single defining feature to the experience of loneliness, but rather

various subjective clusters of feelings, thoughts and behaviours which lead a person to conclude 'I am lonely' (Peplau & Perlman, 1982).

An issue with defining loneliness is the difficulty in merging the relatively objective concept of the social and psychological condition with the experiential aspects of the phenomenon. Scientifically robust definitions, as discussed above, are useful for methodological purposes, however the experience of loneliness is such that its descriptors are often a more accurate representation. For example, it is indeed difficult to define what a piece of chocolate is, or any food which is unique in flavour, texture or quality. A technical definition for chocolate could be 'a food made from roasted ground cacao beans'. However, such a definition lacks the experiential nature of the entity. It is generally more palatable to describe the experience of eating the chocolate, to savour it oneself, and to determine what it actually is, how it tastes, and how it feels when tasted. A technical definition will rarely conjure up the experience of savouring the unique item of food. And so it is with loneliness. Most people can describe what it feels like to be lonely, even describe the situation and the thoughts that preceded the onset of loneliness, but a reliable scientifically useful definition is much more problematic. Most definitions of loneliness fail to capture the experiential aspects of the phenomenon, and as such suffer from criterion deficiency. Definitions are by nature, objective 'truths' about phenomena, however, most definitions of experiential-based phenomena fail to take into account the subjective truth. In essence however, it is relatively easier to describe what something is like, than to accurately or reliably define it. This issue is not however unique to loneliness. In the development of psychological theories and constructs, theorists tend to use metaphors to derive a sense of what cannot be tangibly seen or touched (De Botton, 2001). This reflects a statement by Rook (1988) in which she argues that researchers should take a differentiated view of loneliness, recognising distinctions among types of loneliness and incorporating this differentiation into research methodologies.

Despite the murkiness in defining loneliness operationally, individuals can quite readily report whether or not they feel lonely. Loneliness seems to be a term that has an intuitive and familiar meaning to most people. When individuals in research studies are asked about loneliness, most readily respond without needing to have the term clarified (Peplau & Perlman, 1982). Loneliness manifests itself in different ways

in different contexts, however most people know intuitively what loneliness means. Ask them to define their conceptual referent however, and a myriad of diverse personal anecdotes are usually provided, usually in the form of vague feelings of dissatisfaction and other psychological problems, such as depression, marginalisation and social anxiety. However, like depression, loneliness is an ambiguous concept with multiple meanings. Although several definitions have had significant value from the standpoint of stimulating empirical work and theory development (e.g. Peplau & Perlman, 1982; Weiss, 1973) a single, universally accepted definition of loneliness has not been adopted by scholars. Rook (1988) urges researchers to move away from a global, undifferentiated view of loneliness toward a more differentiated perspective that recognises distinctions among types of loneliness.

In defining loneliness, it is therefore too simplistic to dichotomise individuals into 'lonely' and 'non-lonely' groups. This categorisation assumes that there is a critical level where one does or does not feel lonely at any given time (Suedfeld, 1987). Much like consuming food, there is a process (and a passage of time) from feeling gnawingly hungry to grossly full. As such, there is not often an exact or objective volume of food that makes us feel satisfied and satiated day in and day out. Moreover, there is no critical level when satiation has been achieved, as we are often not aware of over eating until we are fit to bursting. Similarly with loneliness, there is no critical cut-off between experiencing complete fulfilment in our relationships to crippling feelings of loneliness. It is therefore more accurate to represent the construct in terms of the degree of perceived deficiency, in that someone experiencing severe and unwelcome deficiencies in their social and intimate relationships would be extremely lonely, whereas someone who from time to time feels a bit disheartened with their relationships would only feel mildly lonely.

Given the complexities that arise from individual differences in feelings of loneliness, realistic definitions encompass the subjective and multidimensional aspects of loneliness, recognising that it is made up of perceptual, cognitive, physiological, and emotional factors. Whichever way loneliness is defined however, it is a complex and powerful set of feelings, encompassing reactions to the psychological absence of intimate and social needs. In essence, loneliness remains a nebulous construct. However, as a point of reference for the remainder of the research and to move ahead

with the literature review, loneliness can be viewed as *the distressing and subjective deficiency between an individual's real and ideal social environment, in terms of social and intimate relationships.*

### ***Distinguishing Loneliness from Similar Psychological Constructs***

When people think about the word loneliness, they are often referring to, or associating it with interpersonal isolation. Loneliness tends to highlight the feeling of being alone, either emotionally, socially or geographically. However, without the longing or desire to be with another individual or group of individuals (real or imaginary), aloneness and isolation do not qualify as true loneliness (Hartog, Audy & Cohen, 1980). For instance, when an individual is spending time with a friend, the individual is neither lonely nor alone. According to Mijuskovic (1979) whenever genuine feelings of friendship are present, then loneliness is muted in consciousness.

Because of the complexity of loneliness, its everyday usage is often confused with other terms such as aloneness, isolation, alienation, solitude, lack of social support, and depression. Each of the following sections delineates loneliness in relation to these constructs. As will be evidenced in these discussions, although loneliness shares characteristics with other emotional states and the terminology is often used interchangeably, the loneliness construct exhibits a unique quality.

#### ***Aloneness***

Aloneness is the objective condition of being by oneself. People's perception of, and reactions to aloneness can vary considerably, ranging from contentment to loneliness (Burger, 1995). Spending time alone is not invariably associated with loneliness, as people can be very content in their seclusion. Everyday language often refers to aloneness as the *feeling* of being by oneself, rather than *actually* being alone. In contrast to loneliness, which refers to an undesirable social reality caused by unfulfilled social and emotional needs, aloneness can indicate a certain degree of choice in wanting to be by oneself, and the ability to control one's personal space. As such, choosing to be alone is often the preferred choice over social company for many people, and does not imply the pain associated with loneliness.

While aloneness is not synonymous with loneliness, an objective and chronic deficiency in social relationships is a key antecedent that can lead to loneliness. Larson, Csikszentmihalyi and Graef (1982) conducted research to investigate the subjective experience of being alone. Their study, conducted on a sample of 75 adolescents and 107 adults, indicated that aloneness improved concentration; however it also diminished the individual's mood. Respondents in the study reported feeling less happy, less cheerful, less sociable, and less excited when they were alone than when they were with others. According to this study being alone during daily life was correlated with increased negative characteristics, such as sadness, irritability, boredom and loneliness. In general, it would be expected that people are more likely to feel lonely when they are by themselves for extended periods of time (Killeen, 1998).

### *Isolation*

Isolation is similar to aloneness, except the circumstances in which one is isolated are not under one's control. In the literature, isolation usually refers to the restriction of social relationships due to the physical environment, such as being imprisoned or hospitalised. Rather than being perceptually based, isolation refers to the objective condition of having few social ties, a lack of integration into current social networks, the diminution of communication with others and being cut off from intimate ties for an extended period of time (Rook, 1984a). As such, isolation is more of an objective condition than it is a subjective experience. However, being alone or isolated is not equivalent to being lonely. Although isolation is one of the strongest predictors of feeling lonely in daily life, isolation is a separate construct from the experience of loneliness (Ernst & Cacioppo, 1998). One can be isolated without feeling lonely, and one can feel lonely without being isolated. As people move into more isolated conditions however, there is typically a concomitant rise in feelings of loneliness. In essence, although the terms isolation and loneliness are used interchangeably both in psychological literature and everyday language, there are differences in their conceptual meaning.

### *Alienation*

Alienation refers to a form of powerless self-estrangement (Hancock, 1986). When people are alienated they feel like they don't belong to the social world. Alienation is the separation from social institutions and feeling powerless and normless (Bell, 1985). There is no necessary theoretical or tangible connection between the alienation one experiences and one's levels of loneliness, and as such the concepts are quite distinct. However, similarly to aloneness and isolation, the experience of unwelcome alienation can lead to an associated increase in feelings of loneliness.

### *Solitude*

According to Gotesky (1965, p. 236) solitude is "that state or condition of living or working alone ... without the pain of loneliness or isolation being an intrinsic component of that state or condition". Solitude is often a refreshing experience, more so than mere aloneness, and has a more optimistic, incubative effect. In contrast to loneliness, solitude indicates the freedom to be alone. Many people appreciate solitude and find delight and self-fulfilment in it, whereas appreciation and delight are not often used to describe loneliness. The experience of solitude is perceptually based, in that solitude for one person might mean loneliness for another, which captures the common-sense notion that one person's version of pleasure in another person's version of pain.

### *Lack of Social Support*

In contrasting social support with loneliness Rook (1984a) purported that unlike a lack of social support, loneliness is characterised by negative emotions such as sadness, anxiety, boredom, self-deprecation, and feelings of marginality. Social support comes from any social experiences, whether positive or negative, that support physical and psychological wellbeing. As such, a lack of social support is part of the developmental process of loneliness rather than being synonymous with it (Murphy & Kupshik, 1992).

In a very general way, loneliness and social support are separate in their construct definitions. Loneliness refers to the subjective experience of deficits in interpersonal relationships, whereas social support refers to the availability of social resources (Perlman & Peplau, 1984). However, social support is often inaccurately referred to as the direct opposite of loneliness. From an experiential perspective social support is not always received positively. Receiving help from others does not always produce positive feelings of being socially supported. Although it is beyond the scope of this research to discuss the psychology of help-giving behaviours, helping tends to be perceived as supportive only if the helper conveys an attitude of caring toward the recipient, rather than helping out of obligation or indifference (Caplan *et al.*, 1975). Similar to the phenomenology of loneliness, social support is only recognised as contributing to psychological wellbeing when the recipient of the social support perceives the help to be useful. However in many cases, social support whether perceived positively or not, contributes to wellbeing even if it is grudgingly offered, such as transportation to a job interview for example.

Researchers investigating social support dispute whether support should be viewed as an objective or subjective construct. House (1981) for example, has identified four major classes of social support: emotional support (esteem, affect, trust, concern, listening), informational (advice, suggesting, directives, information), instrumental (money, labour, time), and appraisal support (affirmation, feedback, social comparison). Clearly, some of the constructs defined by House penetrate into various aspects of loneliness. For instance, measures of social support ask questions relating to how concerned a member in one's social network is about one's welfare. Self-report loneliness measures tend to include similar lines of questioning (e.g. Russell, Peplau & Ferguson, 1978). It would appear therefore that both constructs are tapping into a common underlying phenomenon, such as the importance of the social environment to one's social and emotional wellbeing (Rook, 1984a). However, it is generally agreed that social supports refer primarily to quantifiable and reliable offers of social assistance and support, whereas loneliness is more experiential, referring to the perception one has of their social deficiencies.

### *Depression*

Loneliness, again while similar, can be differentiated from depression. According to Weiss (1973) there is a need to rid oneself of the distress of loneliness by integrating into new relationships, or regaining an abandoned relationship. With depression, there is a drive to surrender to it. As such, the lonely are “driven to find others, and if they find the right others, they change and are no longer lonely” (Weiss, 1973, p. 15). Even though there are strong correlations between loneliness and depression, there is some evidence to suggest that loneliness is more than simply negative emotional arousal. Bragg (1979) for instance, compared university students who were lonely and depressed, lonely but not depressed, or neither lonely nor depressed. The research suggests that respondents who were lonely without being depressed tended to be distressed specifically about the interpersonal and social aspects of their lives, whereas those students who were both lonely and depressed tended to be distressed over a wider range of personal issues. Conceptually therefore, loneliness is a more specific experience of dissatisfaction than depression (Horowitz, French & Anderson, 1982).

Given the above discussion, there is little disagreement that loneliness is a subjective state that can be distinguished from both objective and other related psychological constructs (Andersson, 1986).

### ***Theories and Perspectives on Loneliness***

Most theorists agree that feeling lonely results from deficiencies in a person’s social relationships, either qualitatively or quantitatively (Peplau & Perlman, 1982). As reviewed previously, loneliness is considered a subjective, aversive and often painful experience (Rook, 2000), yet the theoretical foundations in which loneliness is researched are not as solid as one may suspect. Borrowing a phrase from Selye (1980) who discussed stress, loneliness is a concept which has suffered from the mixed blessing of being too well known and too little understood.

### *Early Approaches to the Study of Loneliness*

Fromm-Reichmann (1959) described loneliness as one of the least satisfactorily conceptualised psychological phenomena, noting that it was not even mentioned in most psychiatric textbooks. The situation was scarcely better by 1986 when Medora and Woodward protested that there were neither well-defined theoretical frameworks explaining loneliness nor any consensus regarding its causes or consequences. Rather, research has relied upon theoretically murky concepts that cannot be well measured (Medora & Woodward, 1986). However, it is not through lack of trying. In fact, many different theories of loneliness have been proposed since the 1950s. Psychoanalytic and post-Freudian researchers believed that loneliness derives from childhood narcissism and hostility (Zilboorg, 1938), unfulfilled infantile needs for intimacy (Fromm-Reichmann, 1959), or lack of early attachment figures (Bowlby, 1969; Weiss, 1973). Humanist and existentialist theorists defined loneliness as a form of anxiety which leads to self-rejection (Moustakas, 1961). Such theorists treated loneliness paradoxically as both the pathological repercussion of believing that others will not understand and accept the inner self (Rogers, 1970), and a normal experience which deepens self-awareness (Mijuskovic, 1979). Cognitive theories on loneliness began to emerge and crystallise in the early 1980s with the collaborative efforts of researchers at UCLA.

### *Cognitive Processes Perspective*

Cognitive theorists have tended to define loneliness in terms of one's cognitive expectations regarding relationships. Such theories argue that the primary determinates of loneliness derive from a combination of negative, internal, stable attributions about one's deficiencies in relationships (Anderson and Arnoult, 1985; Schultz & Moore, 1986), irrational beliefs about the control one has over one's life (Brings, 1986; Hoglund & Collison, 1989), or a discrepancy between desired and achieved relationships (Archibald, Bartholomew & Marx, 1995).

What is key here is that loneliness is not a result of the absolute time spent with a desired other, but whether that relationship fulfils the cognitive expectation of desired relationship fulfilment. It is the perception of social inadequacies, rather than actual

inadequacies that increase proneness to loneliness. The perceived discrepancy, although cued by cognitions, is associated with feelings of abandonment and a lack of attachment, rather than merely dissatisfaction with not having someone to do an activity with. Although lonely people tend to have fewer social relationships than non-lonely people, a more relevant determinant of loneliness is dissatisfaction with the current social network. As such, it is doubtful whether people would label themselves lonely unless cognitive cues were also present. For instance, cognitive indicators probably include the conscious desire for a type of personal relationship or the wanting for more frequent social interaction. Therefore, loneliness can be heightened or reduced by changes in a person's subjective standards for social and intimate relationships (Rook, 1988).

Other cognitive factors apart from perceived deficiency can also be responsible for the development of loneliness. For instance, lack of control over the social environment and an inhibition of self-determination are thought to be partly responsible for the onset of loneliness (Fisher, 1994). Such findings have implications for the study of loneliness in the work environment, where few employees have control over their social environment or their self-determination. Lack of control over any given social situation can result in the difference between feeling lonely and feeling content with being alone. For example, many academics are motivated and productive in their aloneness. However those who are alone and have limited control over this aloneness, such as house bound wives, can become lonely because of their seclusion (Seidenberg, 1980).

The appraisal process is also an important determinant of whether or not someone feels lonely. If, for instance, one feels alone but does not perceive it to be threatening to their psychological wellbeing then it is not obviously distressful and they are not likely to feel lonely. The discrepancy between their desired and actual relationships is only slight. In fact, according to cognitive theorists, feeling alone or isolated is only distressing or painful when it is appraised by the individual to represent a negative discrepancy within their social environment. As such, the appraisal process is a cognitive underpinning for determining and therefore coping with the feeling of loneliness (Lazarus, 1999). Such common sense theories may appear obvious to the reader, however it is important to keep this perceptual distinction in mind when

discussing loneliness within the work environment, where the social environment is not often objectively deficient.

The appraisal process can however be affected by the attribution process. The degree of loneliness experienced will differ for those who believe social relations are inherently uncontrollable and who attribute negative qualities to themselves (Anderson & Arnoult, 1985). Presumably however, situational factors must get to a point where they penetrate even perceptual or attribution biases. For instance, a negative social environment must surely affect everyone's perceptions over time. Even an optimist would likely experience internal and stable attributions for their loneliness upon repeatedly experiencing rejection from their social environment (Weiss, 1987). This is evident in the quote presented in the beginning of chapter one, when the employee indicates that by nature they are a gregarious person, but the environment is such that they are starting to question "why doesn't anyone want to socialise with me?"

### *Social and Behavioural Perspectives*

Behaviourists tend to attribute the onset of loneliness to deficiencies in an individual's social skills. Social skills and competence, according to this perspective are necessary for developing and maintaining intimate and social relationships, and therefore avoiding or alleviating feelings of loneliness (de Jong-Gierveld, 1987; Jones, Hobbs and Hockenbury, 1982). Positive behavioural qualities of social interactions, such as meaningful social dialogue, play an important role in staving off loneliness (Vaux, 1988). Lonely individuals tend to report or exhibit more negative interaction qualities (e.g. distrust, inhibition) and tend to be unhappy with the degree of intimacy in their social interactions (Segrin, 1998). Moreover, a lack of social skills can lead to behaviour that tends to reduce rather than increase human contact. Therefore, according to behaviourists a self-perpetuating cycle of defeat can be established, which greatly increases susceptibility to loneliness. Conceptually and methodologically, the cause and effect of loneliness can also be one and the same. For example, low self-esteem can be both an initiating factor and it can also be a consequence of loneliness (Killeen, 1998). Therefore disentangling the self-perpetuating cycle can be difficult both from a clinical and research perspective.

Societal norms also indicate when we should begin to feel lonely, and also cause lonely people to feel marginalised and ashamed of their social label. Loneliness tends to contravene social norms, however this societal infringement is conditional upon the match between the individual and expected social behaviour. For instance, an adolescent spending a Friday evening without social company may be distressed and lonely only for the reason that socialising is the expected norm amongst the particular cohort. Here the expectation that weekends are for social activities enhances the adolescent's desired level of contact and thus serves to produce greater loneliness (Perlman & Peplau, 1984). In this respect, the popular media are guilty of cultivating feelings of social inadequacy and loneliness by artificially heightening the need for approval and creating unrealistic expectations about relationships. Social norms therefore, both indicate when we should begin to consider ourselves to be lonely, and also cause lonely people to feel odd and ashamed (Murphy & Kupshik, 1992) Some writers suggest that social expectations can be a beneficial force in one's growth and development, and motivate people to evaluate their relationships and conceptualise their priorities to avoid feelings of loneliness (Rokach, 1985). Irrespective of the reason for social norms, understanding such behavioural expectations helps explain why the perceived deficiency in social relationships exists to begin with.

Incorporating several theoretical perspectives, Horowitz, French and Anderson (1982) propose the development of loneliness falls into three 'clusters', which realistically incorporate cognitions, emotions and behaviours. The first step in the process reflects feelings and thoughts of being different, isolated or separate from others, and not integrating with the social environment. Once the person thinks they are on the outer and feels friendless, the second cluster involves a constellation of negative emotions such as depression, sadness, and anger. The final cluster in the process reflects behavioural outcomes such as avoiding social interaction and commitments, being less assertive in their social interaction or working long hours to avoid social engagement, which may perpetuate negativity and loneliness. This final stage instigates a self-defeating cycle, in which the lonely individual behaves in such a way to create further isolation and feelings of separateness leading to negative emotions and the continual avoidance of social engagement.

### *Social and Emotional Loneliness*

Weiss (1973) has classified loneliness into two theoretically distinct but experientially similar constructs, namely emotional and social loneliness. Emotional loneliness tends to be associated with feelings regarding relationships with individuals, such as close attachment relationships and feelings of closeness with others. When an individual is emotionally lonely, he or she tends to experience a general feeling of sadness and emptiness, and longing for close relationships with others. Social loneliness on the other hand tends to be related to feelings regarding relationships with groups of individuals, such as the feeling of being part of a group of friends. People who suffer from social loneliness lack a feeling of belonging within a societal group and question their ability to relate to others, doubting whether they truly belong (Rokach, 1985; Weiss, 1973). Emotional and social loneliness tend to be related to the source of the interpersonal relationship, in that emotional loneliness is related to one-on-one relationships, whereas social loneliness is related to desired relationships with groups of individuals who share similar concerns. Ernst and Cacioppo (1998) have argued that developing both emotional and social relationships is important for staving off loneliness.

The distinction between emotional and social loneliness is not merely semantic, but has relevance to understanding why people feel lonely. Russell, Cutrona, Rose and Yurko (1984) examined the predictors, experience, and consequences of emotional and social loneliness. In their study of college students, the researchers argued that feelings of intimacy with another individual and feelings of taking care of another negatively predicted emotional loneliness, whereas feeling that one's attributes are appreciated by others negatively predicted social loneliness. Their study provided evidence for the notion that social and emotional loneliness are separable constructs. Nonetheless, the study also suggested that individuals suffering from emotional loneliness share many of the same experiences as those suffering from social loneliness. However, results from Vaux (1988) contradict these findings, suggesting that emotional and social loneliness show limited patterns of divergence. The researcher predicted that social and emotional loneliness would show patterns of differential association as theorised by Weiss (1973) and empirically examined by Russell *et al.* (1984). However, the distinction was not upheld in their study of 140

college students. The researcher argued that both quantitative and qualitative aspects of socialising and emotional support seem to play a role in loneliness, whether social or emotional. However, further research by DiTommaso and Spinner (1997; 1992) found evidence for the differentiation of separate constructs of loneliness, namely romantic, family and social loneliness. Surprisingly, given the theoretical underpinnings for emotional loneliness, social loneliness was found to be associated with reports of greater depression and anxiety. This association is consistent with Cutrona's (1982) finding that social loneliness was related to greater homesickness and depression in university students. According to the Curtrona's findings, university students value social integration above all the other social provisions, which may explain why failing to adapt to the social environment was predictive of mental health difficulties.

The distinction between emotional and social loneliness was also researched by Stroebe, Stroebe, Abakoumkin, and Schut (1996). The researchers found that marital status affected emotional loneliness but not social loneliness. In their study they found that social support was a predictor of social loneliness but not emotional loneliness. Van Baarsen, Snijders, Smit and van Duijn (2001) also found that marital status was more strongly related to emotional loneliness than social loneliness, and that social network support was related more strongly with social loneliness. Recent findings from DiTommaso, Brannen and Best (2004) suggest measurement differences between emotional and social loneliness, relating emotional loneliness with attachment and social intimacy and social loneliness with measures of social competence and self-esteem. Such research findings seek to substantiate Weiss' original claim on the distinction between emotional and social loneliness.

### *Trait and State Loneliness*

Lonely people differ with respect to the duration of their loneliness. Loneliness can be short-lived, lasting only as long as the person needs to adapt into the social environment. On the other hand, loneliness can resemble a personality trait, persisting over time and across different social contexts.

For many people who experience short bouts of loneliness, it is predominately experienced as a 'state', based on novel situational characteristics. In this way loneliness is time-limited and experienced in a specific social situation or environment. Thus, if the situation is one in which most people would feel lonely, feeling that way probably reflects a state response to the social environment. For instance, first year university students are often noted as a group of individuals who experience state loneliness (Barker, 1998), often as a result of feeling homesick (Stroebe, van Vliet, Hewstone, Willis, 2002).

Persistent loneliness has been referred to as chronic or 'trait' loneliness (Rubenstein & Shaver, 1982) and affects the individual throughout time and situational contexts. A person who feels loneliness in various situations consistently over time is one who may be high in trait loneliness (Suedfeld, 1987). In essence, trait-lonely individuals are apt to be lonely for long periods of time, and they are also likely to suffer from loneliness in many different settings. As such, both cross-situational generality and chronicity are critical features that distinguish trait from state loneliness (Shaver, Furnam & Buhrmester, 1985).

The motivation for social contact is another critical feature to consider when investigating the chronicity of loneliness, as social connection and acceptance tends to be a central influence and motivator of human behaviour (Hill, 1987). With regards to motivational forces, it would seem likely that short-term loneliness, or loneliness that stems from changes in the social environment, drives the desire for social activity, whereas chronic loneliness is likely to be perpetuated by social apathy (Gerson & Perlman, 1979). In considering the impact of motivation on loneliness, short-term loneliness can presumably develop into chronic loneliness when repeated efforts to integrate into the social environment and establish social contact are unsuccessful. Such rejection may in fact threaten self-worth, even if the lonely person attributes the cause of loneliness to external circumstances. Longitudinal studies have demonstrated that major life transitions can induce feelings of loneliness for most people, regardless of individual differences along this dimension (e.g. Cutrona, 1982). It is therefore likely that motivational, personality and behavioural correlates of loneliness are only valid for those who suffer from chronic loneliness, and are unlikely to hold true if generalised to situation-based loneliness.

The conceptual distinction between short-term bouts of loneliness and chronic or persistent loneliness may seem arbitrary. However, in many ways it benefits loneliness intervention strategies, allowing the management of the specific source of loneliness. Clearly, the perception of the cause and the chronicity of loneliness will determine the way in which a person experiences loneliness. This distinction in knowing why some, but not all, people feel lonely in certain situations may provide the foundation for distinguishing people with different levels of susceptibility to their social environment, and therefore have implications for the appropriate level of treatment. In any case, an adequate consideration of the person-environment interaction is required.

Most research on loneliness is not based on any one particular theory, since there seem to be useful elements in many of them. Even theorists who belong to one particular 'camp' often admit that loneliness is more complex than one specific theory allows. For example, cognitive theorists Derlega and Margulis (1982) argue that a perceived and unchanging relationship deficiency is only one of several factors which lead to the label of loneliness. Shaver, Furman and Buhrmester (1985) argue for an interaction approach to loneliness, taking account of life changes, transitional periods, personal dispositions and person-situation interactions. In this respect loneliness can assume both state and trait qualities over the course of a life time.

### *Empirical Studies on the Correlates of Loneliness*

When loneliness research began to emerge in the early 1980s, the large majority of studies focussed on North American, white middle-class college students. Since this time however, a steady flow of diverse research has emerged on populations other than college students, such as children (e.g. Kirova-Petrova, 1997), adolescents (e.g. Ciftci-Uruk & Demir, 2003), and older adults (e.g. Pinguart, 2003). However, much of the research on loneliness looks at populations that are at risk of social alienation, isolation, and separation. For instance, loneliness in childhood is often studied in relation to physical disabilities, or loneliness in old age is studied with participants who are living in impoverished or isolated conditions. Such factors would invariably exacerbate social isolation and advance the feelings of loneliness. While studying these populations is valuable, the research findings may not clearly or

accurately distinguish between lonely and non-lonely populations. For instance, much of Rokach's work on loneliness (Rokach, 2001, 2000, 1999, 1998, 1996) suggests that adults experience loneliness as an exceedingly painful experience. However, the researcher's sample included participants from socially marginalised groups (e.g. Parents without Partners, Alcoholics Anonymous, seniors clubs, and penal institutions). Although the sample population was more diverse than student participants, members of such groups would be expected to experience greater loneliness given their situational constraints. It is therefore important to keep in mind that the conclusions from such empirical research may not generalise readily to other groups of the population, such as the adult working population.

### ***Factors Relating to the Person***

Researchers have linked loneliness to a consistent and wide variety of individual characteristics. Without blaming lonely individuals for their plight or minimising the structural and environmental factors that can aggravate loneliness, it is important to recognise that certain dispositional characteristics do predispose some people to experience severe loneliness, more so than others. As such, demographic, affective, personality, and behavioural factors can play a determining role in the development of loneliness.

#### ***Demographic Factors***

Research by Page and Cole (1991) indicates that marital status, household income, gender, and educational attainment are significantly associated with self-reported loneliness. Participants were asked to indicate how often they felt lonely during the past year on a singular scale ranging from 'very often' to 'never'. The random telephone study of 8634 North American adults suggested that marital status was the strongest predictor of loneliness, with married participants reporting the least loneliness, and maritally separated participants reporting the greatest loneliness. According to the research findings, loneliness is more prevalent amongst lower income groups. Presumably, lower income groups have less access to resources, such as time, money and social opportunities, which would explain why loneliness is higher among people with lower incomes and the unemployed (Rook, 2000).

Similar to previous research (e.g. Borys & Perlman, 1985), Page and Cole found that women were more likely to admit feeling lonely than men. However, whether this reported difference is caused by actual differences in the experience of loneliness or by differences in the willingness of men and women to report degrees of loneliness is questionable. Gender differences in the reporting of loneliness could reflect a sex bias in self-disclosure, which is perhaps an underlying cause of the observed gender differences in loneliness. In essence, loneliness relates to gender only when individuals are asked to respond to measures that use items containing the words “lonely” or “loneliness” as opposed to questionnaires that do not make specific reference to the construct. When the measure refers to the construct explicitly, the gender effect appears to be attributable to males being less willing to report loneliness. However, Borys and Perlman (1985) have argued that in general there are no true gender differences in loneliness. According to the researchers, it is likely that women are more willing to admit their loneliness to themselves and others than men, who fear the possible repercussions of their affective self-disclosure. In general, research suggests women are more likely than men to self-disclose and are generally more trusting when revealing personal information to other people (Foubert & Sholley, 1997). Moreover, it is plausible that gender differences are influenced by underlying extraneous variables such as self-esteem, or gendered social norms than actual sex differences in the perception of loneliness. This could be because lonely males tend to be more stigmatised than lonely females (Lau & Green, 1992).

#### *Affective and Attachment Factors*

In general, loneliness is characterised by negative emotions and tends to be correlated with feelings of sadness, anxiety, boredom, self-deprecation, and marginality (Rook, 1984a). Loneliness has been linked with poor psychological health and research seems to indicate that loneliness and wellbeing are strongly related in some manner. However, the causal direction of the relationship is unclear (Murphy & Kupshik, 1992). With regards to affective responses, loneliness is associated with dispositional characteristics such as pessimism (Davis, Hanson, Edson & Ziegler, 1992), depression (Anderson & Arnoult, 1985), shyness (Jones, Carpenter & Quintana, 1985), low self-esteem (Kamath & Kanekar, 1993; Russell, 1982; Russell, Peplau & Cutrona, 1980), guilt (Baumeister, Reis & Delispaul, 1995), and is strongly negatively correlated with

happiness (Booth, Bartlett & Bohnsack, 1992) and life satisfaction (Riggio, Watring & Throckmorton, 1993). It would seem that Duck, Pond and Leatham's (1994) summation that loneliness provides a negative lens through which the world is viewed is particularly accurate. Lonely individuals appear to judge their relationships from a negative perspective, which in turn enhances negative cognitive appraisals and affective responses about future relationships.

For the large majority of people however, loneliness is not a permanently distressing condition. Loneliness can be dissipated, as if by magic, through the emotional connection with another individual or through the meeting of a romantic partner. In fact, correlational studies suggest that finding social connection with just one companion may be sufficient to buffer feelings of loneliness for those at risk of social isolation (Ernst & Cacioppo, 1998). For some individuals, even the prospect of a potential intimate relationship is sufficient to dispel loneliness, albeit temporarily (Weiss, 1973). Interestingly, this finding is not peculiar to adult relationships. Parker and Asher (1993) found that children who were rejected by their peers were buffered from feeling lonely if they maintained one close friendship. During various developmental stages in life, finding the capacity to form one close friendship or companion appears to reduce the likelihood of loneliness.

The importance of social attachment is not limited exclusively to interpersonal human relationships. In fact, the mere presence of, or sense of relatedness with another organism can contribute to the promotion of health and wellbeing (House, Landis & Umberson, 1988). Research by Hart, Zasloff and Benfatto (1996) found that deaf individuals who benefited from the assistance a hearing guide dog were less lonely than those deaf individuals who were without a hearing guide dog. The researchers noted that the presence of the guide dog not only provided companionship, but it also improved communication with family, neighbours and the hearing community. It seems that while humans need to attach to others, the other party does not necessarily have to reciprocate the attachment for the individual to experience a promotion of wellbeing.

### *Personality Factors*

Research has consistently identified introversion and neuroticism as the two main personality factors related to self-reported loneliness (e.g. Hojat, 1982; Russell, Peplau & Cutrona, 1980; Saklofske, Yackulic & Kelly, 1986; Stokes, 1985). Introversion tends to be associated with people who are quiet, contemplative, and prefer smaller gatherings. However, the expression of introversion can be misconstrued by others as unfriendly, uninvolved and socially awkward. The extraverted individual, on the other hand, tends to be gregarious and outgoing. They enjoy social company, prefer risk-taking opportunities and require stimulation. From this description, extraverts are likely to be more active and deliberate than introverts in their seeking out of social contacts and social situations (Saklofske, Yackulic & Kelly, 1986). Lower extraversion scores (that is, introversion) tend to be associated with higher loneliness scores (Kamath & Kanekar, 1993; Saklofske & Yackulic, 1989). Conceptually, one would expect introverts to report low levels of loneliness due to their desire for more privacy and social reservation. In other words, one would expect the discrepancy between their desired and actual relationships to be fairly low. However, introverts who report high loneliness scores may be dissatisfied with the quality of their current relationships, and manifest behaviours which inhibit the promotion of interpersonal closeness. Additionally, it would appear that extraverts exhibit the very behaviours that increase the likelihood of social and interpersonal contact which, in turn, reduces the likelihood of experiencing loneliness (Saklofske & Yackulic, 1989). Demonstrating positive social and personal characteristics, which helps to create interpersonal attraction and social desirability, is a significant step in conquering loneliness (Rook, 1984a). After all, who wants to be with an individual who is depressive, socially apprehensive and who appears to lack social skills or emotional sensitivity?

Neuroticism, an additional personality trait often associated with loneliness, refers to individuals who are overly anxious and 'emotional', and express their behaviour in a disproportional way to the stimuli that provoke it. People who are high in neuroticism tend to score highly on self-report loneliness scales (Saklofske, Yackulic & Kelly, 1986). The emotional reactivity of people who are high in neuroticism may repel others, further perpetuating their dissatisfying relationships. Stokes (1985) found that

people high in neuroticism seem to be lonely not because of their difficulty in forming social relations, but rather as a manifestation of their negative affectivity. The researchers concluded that people with high neuroticism seem to have both personal and interpersonal difficulties, which increase the probability of loneliness and further increase psychological impairment. Moreover, Saklofske, Yackulic and Kelly (1986) argue that high neuroticism scores could be reflecting a basic level of anxiety associated with the formation of interpersonal relationships, which can then lead to loneliness. In concurrence with this hypothesis, neuroticism has also been associated with reports of high perceived stress (Penley & Tomaka, 2002). Thus, the individual who is high in neuroticism may have a reasonable amount of contact with others but not enjoy satisfying relationships due to high levels of anxiety, emotional reactivity and perceived stress associated with interpersonal relationships.

In terms of broader personality characteristics, lonely individuals in comparison to non-lonely individuals are more likely to be shy and low in sociability (Schmidt & Fox, 1995). However, they tend to be high in social dependency and social anxiety (Segrin & Kinney, 1995) but low in social skills to develop interpersonal relationships (Buhrmester, Furman, Wittenberg & Reis, 1998). Further research by DiTommaso, Brannen-McNulty, Ross and Burgess (2003) lends support to the existing literature, indicating that securely attached adults are socially skilled and socially competent, which is related to lower perceived levels of loneliness.

Personality factors affect loneliness in several ways by perpetuating or reinforcing loneliness in a circular process. For instance, characteristics such as shyness and low self-esteem may reduce a person's social desirability and interpersonal attractiveness, which can contribute to unsatisfactory patterns of social interaction. Additionally, certain personal characteristics may influence how an individual reacts to changes in their social environment, and thus affects how they cope with loneliness. If, for instance, people are relocated to another city where they have few or no friends or family, they may experience a period of loneliness. However, if they are gregarious by nature and seek social stimuli, it is more likely they will overcome their loneliness, compared to those who are socially reserved and inhibited. Such characteristics may therefore predispose people to feel lonely, and reduce their ability to alleviate loneliness (Peplau & Perlman, 1982).

### *Behavioural and Social Competence Factors*

Although loneliness is primarily a private psychological experience, it tends to manifest itself in the behavioural realm. Behaviourally, loneliness is often associated with self-focus, shyness, and low social risk-taking. As such, lonely people tend to be less assertive than non-lonely people, which may hinder their social interactions manifesting itself in greater loneliness (Jones, 1982).

Loneliness has also been associated with a range of social network factors including infrequent contact with friends (Cutrona, 1982), having few friends and spending time alone (Russell, Peplau, & Cutrona, 1980), and low intimacy of relationships with best friends (Williams & Solano, 1983). Moore and Schultz (1983) demonstrated a relationship between loneliness and external locus of control, social anxiety, and self-consciousness, while Jones, Freemon and Goswick (1981) showed that loneliness was associated with low trust, a sense of powerlessness, and social isolation. Yet, several studies contradict these findings, observing no association between loneliness and social interaction (Jones, 1981), network size (Stokes, 1985), or reciprocation of friendship (Williams and Solano, 1983).

Research by Spitzberg and Hurt (1987) has found a reciprocal relationship between interpersonal skills and loneliness. In general, the study found that individuals who were less interpersonally skilled were more prone to experience feelings of loneliness. The research suggests individuals with ineffective interpersonal skills are more susceptible to social exclusion which can fuel feelings of loneliness, in turn leading to less competent social interaction (Spitzberg & Hurt, 1987; Stephan, Faeth, & Lamm, 1988). Despite loneliness being associated with interpersonal deficiencies however, it tends to be positively correlated with social sensitivity, which is the ability to decode verbal communication from others (Segrin, 1993). In explanation for this apparently unusual research finding Segrin argued that because lonely individuals are aware of the feeling of interpersonal discomfort and rejection, they are perhaps cued to and able to pick up on rejection expressed by others.

Additional research has shown that social anxiety and a lack of social skills relates to feelings of loneliness (Solano & Koester, 1989). Wittenberg & Reis (1986) in their

study of 69 first year college students found that lonely participants exhibited less adequate relationship-forming skills, such as initiation and assertiveness. Lonely participants were also less competent in skills important for developing and maintaining deeper, more intimate relationships, such as providing advice and interpersonal conflict resolution. According to the Wittenberg and Reis, the absence of such skills, may be a major determinant of loneliness.

Lonely people seem to score highly on a cluster of personality traits, cognitive states and behaviours, all of which imply anxiety, shyness, boredom, depression, and poor interpersonal skills. In many ways, these personality and behavioural characteristics tend to intensify the experience of loneliness through the individual internalising these feelings as stable attributions for social failure (e.g. Jones *et al.*, 1981). Given the evidence regarding personal characteristics and the behaviour of chronically lonely individuals, it could be argued that lonely people entertain cognitions and exhibit behaviours that enhance their isolation or perceptions of loneliness. Unfortunately however, it remains unclear what aspects of lonely individual's cognitive, affective, and interpersonal processes are antecedents and what aspects are consequences of loneliness (Ernst & Cacioppo, 1998).

### ***Factors Relating to the Situation***

Many private situations can induce feelings of loneliness, ranging from spending evenings alone without intimacy or companionship, to queuing at the supermarket realising that one's trolley is filled with pre-packaged dinners for one. However, other more socially intense situations can instigate feelings of loneliness. Rokach (1985, p. 233) portrays loneliness as being "in the midst of a rushing mass of people on the subway at rush hour. Many people, who are strangers with unfamiliar faces and unknown destinations, who go in the same direction, stand beside each other, and may occasionally be crushed up against, and touch each other, and still remain complete strangers who don't know each other and don't care to know".

By definition, loneliness experienced because of social deficits implicates the social environment. In other words, a deficiency in social relationships might reasonably imply an environmental trigger for the experience of loneliness. However, despite the

intuitive notion that loneliness could be attributable to the social environment or context, it is a much neglected area of research. Loneliness researchers often gloss over situational or contextual cues, preferring to study personal factors in the experience of loneliness. Situations vary in the opportunities they provide for social contact and the initiation of new relationships. Some situational constraints are very basic, such as time, distance or money, others are more complex requiring intense psychological adaptation (Perlman & Peplau, 1984).

Peplau and Perlman (1982) isolate two distinct causes of loneliness in their framework for understanding loneliness, namely precipitating events and predisposing factors. Generally speaking, any event that disrupts the individual's social network is considered a potential precipitating factor for loneliness. Precipitating events include, for example, changes to the person's actual social relationships, such as the ending of a close relationship through death, divorce, or separation from an intimate relationship, imprisonment, leaving home, migration, hospitalisation, the 'empty-nest' syndrome, retirement and relocation. Loneliness can also be triggered by changes in the person's social needs or desires, which may precipitate loneliness if desired changes are not accompanied by actual relationships. The precipitating event that causes loneliness most frequently involves a disruption in close relationships with other people. The most extreme form of relationship loss is bereavement (Rokach, 1989), and it would be expected that this leads to profound loneliness due to its unpredictable nature.

Unfortunately, most speculations about how situational factors influence loneliness have not been subjected to empirical investigation. The few studies that have touched upon situational events as causing or perpetuating loneliness, relate to a diverse range of factors such as the transition to university (Cutrona, 1982), prolonged internet use for those who are already lonely (Amichai-Hamburger & Ben-Artzi, 2003), geographic mobility (Rubenstein & Shaver, 1982), and living in a nursing home compared to living in a community (Pinquart & Sorensen, 2003). Such studies are overshadowed however by the large majority of research focussing on the dispositional characteristics of the person. Considering that the feeling of control over one's social environment is a crucial cognitive determinant of feeling lonely, it is

surprising less emphasis has been given to situational factors, which invariably contribute to a lack of environmental control.

### *An Interaction Approach to the Study of Loneliness*

It would seem a reasonable proposition that loneliness is solely caused neither by social or environment constraints, nor merely the result of personality characteristics. Rather, it is an interaction between the person and the environment. Although mentioned in the literature, the structural conditions in which loneliness is formed are seldom analysed. Furthermore, an understanding of how such interactions jointly affect vulnerability to loneliness has, unfortunately been overlooked in much of the research literature (Rook, 1988). As such, the current literature base is not balanced between the individual characteristics that drive loneliness, and the picture of social and environmental reality (Andersson, 1986). There are however a few morsels within the literature representing the connection between the social environment and personal characteristics.

Early findings on loneliness suggest the experience of feeling lonely has little to do with the number of social relationships an individual may have, but rather the quality and meaningfulness of those relationships (e.g. Gaev, 1976). However, early research by Jones (1981), Stokes (1985) and subsequently by Damsteegt (1992) suggests that a poor social network does impact significantly upon feelings of loneliness. Damsteegt's research indicates that lonely individuals have both a poorer social network and a poorer mental set, in terms of feeling alienated, resentful and bitter. As such, lonely individuals expect to be, and are actually more prone to rejection from their peers.

In developing a mediating model of loneliness, Kraus and her colleagues (Kraus, Davis, Bazzini & Church, & Kirchman 1993) conceptualised loneliness using Weiss' (1974) concept of social provision, in that relationship evaluation is determined by feelings of attachment, social integration, reassurance of worth, nurturance, reliable alliance, and guidance. The model of loneliness jointly incorporates person factors, ecological factors, and the individual's social network. In an empirical test of the model on 509 university students, the researchers concluded that ecological factors,

such as living arrangements and recent relocation, affects loneliness only indirectly via the impact on one's social network and relationship evaluation. It would therefore seem evident, according to this research, that the experience of loneliness is largely concerned with social provision and the cognitive appraisal of the individual's social environment. This fits with the notion that it is the qualitative rather than quantitative aspects of social interactions that are important for understanding loneliness. Furthermore, it is the interaction between the individuals' cognitive style, interpersonal traits and the social situation that produce the negative effect of loneliness.

Given this proposition, greater consideration of situational factors is needed in order to redress the overestimation of the importance of dispositional factors. As a uniquely subjective experience, loneliness is formed on the basis on personality configuration, cognitive appraisal, and on the interaction that person has with his or her environment. Much of the empirical work reviewed in this section provides further evidence that loneliness appears to be a multidimensional and multifaceted experience.

### *Coping with Loneliness*

In many respects, and for many people, the most direct and satisfying long term remedy for loneliness is engaging in a meaningful relationship or improving relationships with compatible others. Rokach and Brock (1998) have looked at coping strategies perceived as helpful by research participants identifying themselves as lonely. The strategies were grouped into six factors: acceptance and reflection, self-development and understanding, social support network, distancing and denial, religion and faith, and increased activity. Earlier research by Shaver and Brennan (1991) suggests that chronically lonely individuals tend to engage in passive, ineffective and unhealthy coping strategies such as watching television or overeating, which tend to be inadequate mechanisms for overcoming loneliness. Such strategies do not focus on the deficient social environment or the cognitive cues that perpetuate loneliness.

Those who cope well with loneliness tend to engage in active behaviours, such as engaging in social groups or creative and self-fulfilling activities. Such behaviours

would actively direct one's attention away from lonely thoughts and diminish the perceived gap between the ideal and actual social environment (Rook, 1988). In testing this hypothesis, Shaver *et al.* (1985) found that 'state-lonely' subjects preferred active coping strategies, tended not to make self-derogatory attributions, and were sufficiently socially skilled. In contrast, 'trait-lonely' individuals attributed their loneliness to internal and stable causes, and failed to seek out adequate solutions to cope with their loneliness. In other words, trait-lonely subjects were resigned to their loneliness, whereas state-only subjects were more optimistic about their situation and therefore coped more effectively with their feelings of loneliness.

According to Rook and Peplau (1982) the majority of people seem to overcome loneliness by forming new relationships, utilising their existing social network more, or by substituting human relationships with media personalities or pets. However, such a conclusion raises one of the many complexities surrounding research on loneliness, in that difficulties relating to others *and* difficulties in spending time alone have both been cited as contributing to loneliness. One version of research suggests lonely people have little tolerance for aloneness (e.g. Greene & Kaplan, 1978) and feel desperate distress when alone. Clinicians have recommended teaching lonely individuals to engage in solitary activities or to increase their skills in being alone to overcome their distress (Rook, 1988). A second school of thought suggests that solitude offers protection from interpersonal stress and may be particularly appealing as a coping mechanism for lonely people. Solitude in this respect is a protective device to avoid potential threats to self-esteem perpetuated through low social or assertion skills (Rook, 1988). This style of coping is particularly apparent in trait-lonely individuals (Shaver, Furman & Buhrmester, 1985), and is likely to change over time as the individual strives for a balance between interpersonal meaningfulness and privacy. As such, Rokach and Brock (1998) suggest that coping with loneliness involves a variety of techniques that seem to correspond with the cognitive, emotional and behavioural components of the experience.

It would appear that the most rewarding and permanent way to overcome loneliness is to create a sense of desired belonging, either with another individual, or with a community of individuals. Loneliness can act as a useful feedback mechanism contributing to the individual's interpersonal provisions, and potentially spur the

individual on to an improved sense of connection. Research suggests that the least lonely people have strong friendships, are emotionally connected to others in their social network, and experience a sense of intimacy and membership of a wider social group (McWhirter, 1990).

In summary, whether we conceive of loneliness as a personality-like trait, an acquired behavioural disposition, or a fluctuating experience, the need for attachment and connection arises with such consistency and potency that we can truly regard it as a fundamental human need (Flanders, 1982).

## CHAPTER THREE

### Loneliness in the Workplace

Shortly after I started doctoral study, an acquaintance informed me that work-related loneliness “wouldn’t be worth studying”, as it simply “wasn’t a major problem in the business world”. However, two years later I came across this headline whilst attending a conference in London:

#### BRITISH BUSINESS LEADERS SUFFER FROM OFFICE POLITICS AND LONELINESS

A more detailed article was subsequently found on the Leaders in London website (retrieved from the World Wide Web on 28 June 2004 from <http://www.leadersinlondon.com/pressroom.cfm?prid=22>). The article elaborated further:

*"British business leaders battle against office politics and loneliness, according to results of a survey announced today for the International Leadership Summit Leaders in London. Asked to indicate the worst elements of business leadership 43 per cent of respondents answered politics, while 31 per cent indicated that loneliness was the most unpleasant aspect of the job. The survey, conducted in April 2004 for the inaugural Leaders in London event, quizzed almost 1,000 chief executives, company directors and senior managers from around Britain to elicit their opinions on the subject of leadership ... In other results, just 8% of respondents said responsibility was the worst part of their job and a tiny 6% said they disliked being criticised as part of the role ... 'The significance of the ongoing battle to control office politics and the loneliness of leadership is a potent recipe for ill-health and burnout. If leaders are to remain effective in the long term they need to recognise this fact and acquire skills to maintain*

*their wellbeing,' said Gary Fitzgibbon, chartered occupational psychologist and founder of Fitzgibbon Associates, a firm of business psychologists. 'Loneliness is an unavoidable by-product of effective people management. A good leader must exhibit fairness, objectivity and emotional detachment - this last quality in particular prevents the development of special relationships with colleagues and therefore renders the leader isolated and alone in the work environment. A key skill in the armoury of an effective leader is the ability to structure people's activities towards the achievement of organisational goals. In this enterprise office politics, that complex set of work-place behaviours motivated by people's desire to achieve their personal goals and typically inconsistent with organisational objectives, is the major obstacle to be overcome. It is an obstacle that will invariably compromise organisational success if left unchecked, which explains why good leadership always involves a struggle to control it,' added Fitzgibbon."*

If we are to believe the anecdotal literature and media reports, loneliness bedevils many successful executives and business leaders. Undoubtedly, loneliness is built into certain professional occupations, with the enforced hierarchy being an occupational hazard for many individuals. For instance, in the hierarchical structure of most large organisations, Chief Executive Officers or senior managers do not often have peers they work alongside. Indeed, there are few people at the top of the organisation compared to the bottom.

The need for some occupational groups to maintain a professional distance from their subordinates or clients can often lead to anxiety and loneliness. According to Yalom (1998) many senior ranked executives are unable to express or disclose their emotions, and invariably keep themselves sheltered from self-disclosure. However, many face deep insecurities including fears of being wrongfully judged, or being found a fraud, despite their impressive skills, qualifications and operational success. Moreover, many find they must speak with a constant air of authority and a serene

sense of self-confidence despite their own anxieties and lack of confidence. This mask can often manifest itself in the individuals' personal life as well, with many successful executives failing to benefit from intimacy or friendship anywhere in their lives.

Many commentators in the popular media have argued that the prevalence and availability of close social relationships<sup>2</sup> and support in the workplace is diminishing (e.g. Joyce, 2004). This line of reasoning argues that changes in the structure of jobs and the instability of the commercial environment have in part, led to a demise in the quality of social relationships. Organisational restructuring has made what used to be a relatively secure and permanent occupational life much more unstable and insecure. In some ways, it is more difficult to forge relationships in the workplace when employment is not guaranteed week in and week out. Moreover, the perceived importance of commercial institutions over social institutions (including friends and family) means that people are looking more and more to their work environment for friendship and kin relations, despite the potential inadequacies of the workplace environment for developing social relationships.

In most organisations, work consists of more than simply technological and intellectual processes. For many, the act of 'working' is considered a social institution which requires the continual fostering of human cooperation (Berman, West, & Richter, 2002). As such, work settings can provide an environment where an individual's social and emotional needs are fulfilled. For instance, a worker could ask for the opinion of another worker, or request their help on a project, allowing both individual's to maintain their self-esteem and reassurance of worth. Further, a fellow co-worker may extend another co-worker an invitation to lunch or acknowledge another's achievements, which again fulfils the individual's needs for attachment, approval, social integration and provides a sense of belonging whilst at work. However, for many individuals the social reality of working for an organisation is not so rosy. In many bureaucratic organisations the attention is often focussed on productivity, competition, decisions, deadlines, reports, and so on and less focussed on the human element of organisation and productivity (Riesman, 1961).

---

<sup>2</sup> In contrast to research on loneliness in general, where the focus is often upon intimate relationships, the emphasis when researching loneliness in the workplace is on the individuals with whom one has a close but non-intimate relationship.

Humans, whether they are at home or at work are social animals, so much so that a basic need to belong is a fundamental motivator in human existence (Flanders, 1982). Contrary to lay opinion (such as the comments made to the author in the opening of this chapter), the need to belong and attach to others does not cease to exist upon entering the workplace. Rather, the need for affiliation and nurturing interpersonal relationships appears to be essential for physical and psychological wellbeing across the life span, including life at work (Cacioppo *et al.*, 2000). Positive interpersonal relationships, whether they are at work or not, are ‘good medicine’, and are fundamental for a sense of community (Peplau, 1985). People can have a range of relationships at work, ranging from a superficial greeting in the corridor, to the development of an intimate tie leading to marriage. For some employees however, they may feel they have a host of acquaintances at work but no one who really understands them. In general, if one remains lonely for extended periods of time he or she will be at greater risk of depression, suicide, and physical disease (Ernst & Cacioppo, 1998). If loneliness is to be defined as one type of mismatch between the individual’s social and emotional needs and the realities of his or her social environment (Peplau & Perlman, 1982) then it would follow that the work environment could be an environmental factor responsible for this disparity.

### ***Loneliness at Work ~ A Neglected Area of Research***

Loneliness is not a new phenomenon to study empirically, nor is loneliness at work a new concept for journalists to report on. For instance, the words ‘loneliness’ and ‘isolation’ are often mentioned in the popular media when a leader or senior executive is estranged because of his or her business or political dealings. However, the area of workplace loneliness remains a nebulous and under-examined construct, both empirically and theoretically.

Work-related loneliness, as with loneliness in general embraces a complex tangle of unanswered questions. However, it is puzzling that a phenomenon already reported as a current experience by so many organisational leaders, should receive so little attention by researchers. Loneliness has been studied in the context of a variety of interpersonal relations including relationships with strangers, classmates, friends, and

romantic partners (Ernst & Cacioppo, 1998). Although the workplace is perceived as a social institution harbouring opportunities for interpersonal relationships, it cannot be assumed that friendships and meaningful relationships will flourish as a result. Just like in a classroom setting, childhood loneliness can manifest itself in an apparently social and congenial environment. Organisational research has started to place greater emphasis on the importance of employee wellbeing (Pfeifer & Veiga, 1999). However, the phenomenon of loneliness at work is curiously neglected as a specific focus of concern.

The neglect of research is surprising given that the workplace hosts a myriad of interpersonal relations, and in many cases employees spend more time with their workmates than they do with their spouse or friends. However, despite the limited availability of empirical research on loneliness at work, a paradox appears to have emerged between the literature on loneliness and lay beliefs about work-based loneliness. As discussed in Chapter 2, loneliness is often researched in association with social incompetence or deficiencies in a person's character. However, if loneliness were peculiar to those who suffered from anxiety, poor self-image, ineffective interpersonal behaviours, and low self-esteem, then it does not explain why accomplished individuals in senior positions within organisations often report feelings of loneliness. In order to achieve seniority in a commercial environment, most employment decision makers would agree that a certain level of social competence, self-assurance and interpersonal skills would be required. Therefore, it is possible that a well-adjusted, sociable character who achieves seniority and success might nevertheless feel lonely at work. It could also be that those individuals who feel lonely in their position may demonstrate sufficient social skills for the role, but do not enjoy an abundance of social competence to readily cope with loneliness. It appears however that in some situations, environmental conditions could be a contributing factor to the individual feeling unable to find a connection with their work colleagues. However, the current loneliness literature seems to have overlooked the common notion that highly successful, socially competent individuals can also experience bouts of loneliness.

### *General Literature on Loneliness in Relation to the Workplace*

In the 1970s an American sociological theorist, Philip Slater, recognised that cultural values and social institutions could exacerbate loneliness. Slater (1976) argued that social institutions such as public schools and private corporations emphasise individualism and personal success through competition and independence, which he argued tends to go against the basic human needs for belonging, community and engagement with others. Slater (1976, p. 34) argues:

*“Individualism is rooted in the attempt to deny the reality of human interdependence. One of the major goals of technology in America is to ‘free’ us from the necessity of relating to, submitting to, depending upon, or controlling other people. Unfortunately, the more we have succeeded in doing this, the more we have felt disconnected, bored, and lonely.”*

Rather than classifying loneliness as abnormal, Salter described it as normative and a common by-product of social forces. In essence, he strongly believed that the competitive life is disconnected and lonely, and its satisfactions short-lived. Similarly, Seidenberg (1980, p. 186) argued that “corporate men are lonely both in their travels and in their offices ... they secretly yearn for more trust and genuine friendship, which are absent both from competitors on the outside and inside from the organisation”. In 1982 Peplau and Perlman also suggested that social institutions which emphasise “rugged individualism and success through competition” might foster loneliness (p.9).

Literature on occupational stress also touches on isolation and loneliness as both a cause and consequence of stress at work. For instance, Cooper (1981) described the problem of isolation as being a factor that adds to the strain of the executive. Not surprisingly, being higher in the organisation results in fewer opportunities for feedback and social dialogue from others, simply because the top is not a very crowded place. As such, there are fewer people around at that level to provide support and feedback. Cooper suggests that “at highly competitive managerial levels ... it is likely that problem-solving will be inhibited for fear of appearing weak. Much of the American literature (particularly) mentions the isolated life of the top executive as an added source of strain” (Cooper, 1981, p. 281).

There is also some evidence in the literature to suggest that personal communication is not reciprocal in situations where the parties have unequal status. As such, there is more willingness to self-disclose up the status hierarchy (i.e. from subordinate to boss) than down it (Earle, Giuliano, & Archer, 1983). Recent research from Adamson and Axmith (2003) suggests that for two-thirds of Chief Executive Officers (CEO) the most difficult issue they face is feeling disconnected from others at work. This feeling of disconnection is thought attributable to their ongoing responsibility and preoccupation with business matters, being isolated from family and friends, and experiencing a sense of alienation from aspects of their personality. It would seem from this research (and from the Leaders in London research outlined in the beginning of this chapter) that wearing a mask while in the CEO position is necessary to respond to expectations of organisational stakeholders. Such masking can create feelings of existential distress, heightened anxiety, impatience, emotional withdrawal and abusive outburst (Adamson & Axmith, 2003). Nevertheless, there is often little sympathy for the likes of CEOs who can earn up to 500 times what some of their employees earn (Kirk, 2003)!

Contrary to the conceptual links between individualism, seniority and loneliness, empirical research by Page and Cole (1991) on the demographic predictors of loneliness in an adult population, report that managers and those with professional occupations tend to experience less loneliness than other occupational groups, such as technicians, sales and clerical staff. Interestingly, the research indicates that service workers experienced the most loneliness amongst those surveyed. This finding is worthy of note as service workers may in fact encounter the most human contact during their working day out of all the jobs surveyed, yet the human contact may be more emotionally giving than receiving in the nature of the role. However, this finding corresponds with Page and Cole's contention that economic status influences loneliness, in that reduced income and poorer education status are influential factors in reported loneliness. Not surprisingly therefore given their research results, those in professional or managerial occupations who typically have a higher income and more advanced education are, according to Page and Cole, less likely to be lonely due to their economic and social wellbeing. This conclusion runs counter to previous claims that the role of senior manager tends to be isolating and potentially lonely. However,

individual differences may account for such discrepancies in that, for some managers or professionals, status and income may be sufficient to remedy the isolating factors of the job, while for others the isolation may be so burdensome that high income does not compensate for the pain associated with loneliness.

### *Empirical Studies on Workplace Loneliness*

A recent literature search across several social science databases uncovered almost 4000 articles on various aspects of loneliness (PsycINFO, PsycARTICLES, Proquest Social Sciences). From within this search, it was apparent that few studies have investigated the interaction between the situational and personal factors that promote loneliness, and even fewer studies have focussed on loneliness in the workplace. In fact, only four published empirical studies have specifically examined the nature of loneliness in the workplace, and it is to this research that the chapter now turns.

Research carried out by Gumpert and Boyd (1984) suggests that small business owners frequently feel lonely, a problem which the authors attribute to excessive workloads and stress. In their survey of 249 small business owners, respondents were asked a series of questions regarding their relationships at work and involvement with others outside of their business, their health status, and several open-ended questions regarding the psychological aspects of business ownership. The authors also conducted semi-structured interviews with 12 business owners to discuss the causes and possible remedies for their isolation. In general, the respondents who experienced the most loneliness were those who had transitioned from a corporate environment to a small business environment. On the whole, they experienced loneliness due to a general lack of colleagues with whom to share experiences, explore ideas and commiserate. Many respondents felt they were unable to converse with their competitors, as this could pose problems for business development and maintaining a competitive advantage. In other words, an individual cannot easily develop meaningful relationships with those in competition. Among the respondents, 68 percent reported that they had no confidant with whom they could share their concerns regarding their business.

Gumpert and Boyd's (1984) research does however suffer from several methodological issues. Firstly, loneliness was not quantifiably assessed as such.

Rather, it was gauged using open-ended, unstructured questions, which ranged from defining loneliness as isolation or aloneness, through to the term meaning loneliness 'at the top'. Further, although open-ended questions provide fruitful information, the data received do not provide standardised comparison amongst the respondents, inhibiting conclusions and generalisations drawn from the study. Secondly, the authors did not study a comparison group of employees who were not self-employed. It is therefore not possible to determine if small business owners are especially vulnerable to loneliness or whether their levels of loneliness are in fact different to other employees. Subsequent research by Bell, Roloff, Van Camp and Karol (1990) found no support for the author's claim that individuals who are self-employed are more likely to be lonely than those employed by others.

Bell, Roloff, Van Camp and Karol's (1990) research sought to address the hypothesis that people who are successful in their jobs are more likely to consider themselves lonely than people who are less successful. This hypothesis queries the conceptual issues raised in the previous section regarding individualism, competitiveness, and the impact organisations can have on loneliness. The research, conducted by academics in the field of communication, questioned whether senior-ranked employees had fewer friends and spent less time with their family and were consequently lonely, or whether greater economic remuneration for those in higher organisational levels (and the corresponding social opportunities such remuneration can purchase) offset job demands and feelings of loneliness. The respondents for the study were recruited from the Greater Chicago area and responses were gauged from a random sample of 416 participants via a telephone survey. Data were collected on demographic variables (age, education, income, marital status, and race) and loneliness was assessed using the four-item survey version of the UCLA Loneliness Scale (Russell, Peplau & Cutrona, 1980). Data were also collected on occupational prestige and organisational level by assessing the respondent's job title, and asking the respondents to place themselves on a hypothetical organisational ladder. Organisational commitment, work group cohesion, job satisfaction, and friendship network size were also assessed using short measures (1-4 items). Interestingly, the correlation between organisational level and loneliness was small but negative (-.12), indicating that loneliness is associated with those at the bottom of the hierarchy. This correlation remained even after commitment, hours worked per week, job satisfaction, age, education, and family

income were controlled for. A one-way analysis of variance revealed that people near the top of their organisations reported being less lonely than those at or near the bottom, despite those higher up in the organisation working longer hours and sharing fewer hours with family. In explanation, the researchers argue that people at higher levels of their organisations may differ on individual or interpersonal dimensions, such as social skills, marital satisfaction and interpersonal orientation. In essence, it may be that the social skills that lead these individuals to advance the organisation's ladder, may also be responsible for their lower levels of loneliness. Members towards the top of the organisation also have greater access to resources which makes them attractive social associates. Gender and marital status did not affect the respondents' reports of loneliness. In a subsequent regression analysis, work-group cohesion was the best predictor of loneliness. Interestingly, there was a strong positive relationship between hours worked and loneliness but only for those who thought their work-group was not close. The authors reasonably argue that if the work environment is oppressive working long hours will more likely contribute to loneliness. Not surprisingly, the number of hours worked is irrelevant to loneliness if the work environment is cohesive and supportive and the employee has high job satisfaction.

Bell, Roloff, Van Camp and Karol's (1990) study does however suffer from methodological weaknesses. Moreover, several features of the study make it difficult to draw generalisable conclusions. All of the measures were self-report, which could have resulted in bias for items that required an objective assessment (i.e. organisational level). Moreover, the assessment of loneliness was based on a short global measure (4 items), therefore the degree to which work-related loneliness was specifically assessed is relatively ambiguous. Moreover, relying upon a four-item measure to assess loneliness restricts variance in the loneliness variable, with the effect of attenuating its correlation with other organisational measures. The authors have however recognised the limitations in their measures and methodology. For instance, they concede that it is unlikely that the top and the bottom of the organisation mean the same thing for different employees from different organisations. In other words, it is hardly likely that being at the top of the hierarchy in a small retail shop is comparable to being at the top of a large corporation.

In remedying these methodological limitations, Reinking and Bell (1991) conducted a field study to examine how one's career situation interacts with his or her communication competence to influence the person's level of loneliness. The researchers proposed the hypothesis that individuals who occupy low positions in organisational hierarchies would be more prone to loneliness. They also sought to address whether the negative correlation between organisational level and loneliness was a result of communication competence at more senior levels. The study recruited 192 participants from one civil service organisation. Loneliness was assessed using the 20-item UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), organisational level was determined by assigning the respondent's job title to one of five predetermined categories (clerical, clerical-secretary, clerical-supervisory, administrative, administrative-supervisory, director), communication competence was measured using an interpersonal competence questionnaire. Similar to previous findings (Bell *et al.*, 1990; Page & Cole, 1991), Reinking and Bell (1991) found that loneliness was associated with those respondents in lower level positions, even when communication competence was controlled for. In explanation for this finding, the authors argue that success in the workplace may be more important for many people than closeness to others. Moreover, an individual may not see a deficit in personal relationships when achievement at work fulfils primary goals.

Reinking and Bell's (1991) follow-up study exhibits some methodological limitations, largely in relation to the generalisability of the results. The research was conducted with respondents from a civil service organisation. It is therefore questionable whether those respondents at the top carried the same burdens, insecurities and sacrifices that accompany senior level positions in private industry. As the authors of the study indicated, the results may not generalise beyond the specific parameters of the organisation. Furthermore, the loneliness measure used, although more comprehensive than their previous 4-item measure, also limits generalisability, in that the UCLA measure of loneliness does not specifically measure loneliness at work. It is therefore difficult to conclude if the individual is in fact lonely at work, or whether the loneliness stems from other facets of their life.

The authors also concede that it may not simply be the individual's position within the organisation that influences loneliness, and their interpretation of 'it's lonely at the

top' may have been insufficient to capture the essence of what it means to be at the 'top'. For instance, the authors comment that loneliness at the top could be related to the isolation of decision making at senior ranked positions, and the heavy weight of responsibility felt by those at higher levels of an organisation. This factor is not always implicit in assessing the individual's hierarchical position within the organisation. In essence, merely assessing job title and position within the hierarchy fails to capture the essence of what inherently makes the role potentially lonely.

A further study on loneliness at work, carried out by Chadsey-Rusch, DeStefano, O'Reilly, Gonzalez and Collet-Klingenberg (1992), empirically assessed loneliness amongst 51 workers with mental retardation employed by integrated and sheltered workshops. The researchers developed a loneliness questionnaire based on the work of Asher, Hymel and Renshaw (1984) designed to measure children's feelings of loneliness and social dissatisfaction. Asher's scale was adapted to assess the loneliness of retarded adults in work settings by changing the words *kid* to *people* and *school* to *work*. Trained interviewers administered the questionnaire. The resulting scale was referred to as the Worker Loneliness Scale and included 23 items with three factors: aloneness (e.g. "Are you lonely at work?"), social dissatisfaction (e.g. "Do you have lots of friends at work?"), and leisure pursuits (filler items). Participants could respond to the questions on a three-point scale (i.e. *yes, sometimes, no*). The scale was found to be internally reliable, with split half correlation of 0.83 for those respondents with mild retardation and 0.81 for those respondents with moderate retardation. The test-retest reliability of the scale over a 2-3 week interval was 0.76 for those respondents with mild retardation and 0.89 for those respondents with moderate retardation. The overall results from the study suggest that loneliness and social dissatisfaction were not pervasive feelings for individuals with mild or moderate mental retardation. It could well be that the subtleties of social interaction and political agendas would be less intense in a workplace shelter, thus creating a less constrained social environment. However, their conclusions were limited by the fact that no comparative data were available on the loneliness of workers without mental retardation. It was apparent from their research however, that some individuals were experiencing significant loneliness at work and the researchers called for further research in this area.

A qualitative study carried out by Steinburg, Sullivan, and Montoya (1999) looked at the experience of loneliness and social isolation in the workplace for deaf adults. The authors hypothesised that because of social integration difficulties, deaf workers may experience poor vocational and psychological outcomes in the workplace. Fifteen deaf volunteers were interviewed for the study, which examined the participants' vocational experiences, social support, general perceptions of loneliness, and experiences with accommodations in their work setting. In addition to the interview, participants were administered the Revised UCLA Loneliness Eight-Item Scale (Hays & DiMatteo, 1987). The interviews were conducted in American Sign Language. Their study, although not an extensive examination of the relationship between loneliness and work functioning, found that for some participants, communication barriers in the workplace did create social difficulties leading to loneliness, which negatively affected their work performance.

Other studies touching on loneliness in the workplace include research by Melamed, Szor and Bernstein (2001) who found a correlation between job satisfaction and a lack of loneliness amongst therapists working in an outpatient clinic. Research by Ukwuoma (1999) with Nigerian Catholic priests found that loneliness was a significant stressor in their daily working lives.

### *Research on Professional Isolation and School Principals*

School principals are an occupational group who often express a sense of loneliness, isolation, and alienation. Such working conditions are thought to contribute to a diminished sense of meaningfulness, power, and job satisfaction (Dussault & Thibodeau, 1997). Researchers working in the area of principal wellbeing argue that the conditions of the school working environment reduce the possibility for interaction with colleagues and peer principals, and diminish the development of their informal networks (Dussault & Barnett, 1996). Barnett (1990) found that professional isolation could have a negative effect on principals who have to cope with it, and concluded professional isolation could diminish the professional development of school administrators. Research by Allison (1997) indicates that in a sample of 643 elementary and secondary school principals, approximately half of the respondents reported feeling alone in their position and feeling dissatisfied with their jobs as a

result of the ‘loneliness of command’. In a study linking professional isolation (as measured with the global UCLA Loneliness Scale) with occupational stress, Dussault *et al.* (1999) found a strong and positive correlation between the two variables. Previous research by the present author (Cubitt<sup>3</sup> & Burt, 2002) on a sample of 293 primary school principals suggests that loneliness, as measured by the UCLA Loneliness Scale, is a significant predictor of educator burnout, namely emotional exhaustion, depersonalisation, and reduced personal accomplishment.

Qualitative doctoral research by Howard (2002) on the isolation of school principals in Georgia, America found that the principalship was indeed isolating for the ten respondents interviewed. One of the respondents indicated “It’s very lonely ... there’s nobody there with you to make the decision. There’s nobody there to help you. You make the decision. You’re held accountable ... you are ostracised because of your position” (p.93). The findings from the research also suggest that the increased workload for principals impacted upon their feelings of loneliness. The principals described a paring down of their personal friends and reported spending less time in self-selected social activities with friends. Several of the principals described isolation from their peers and colleagues due to their ascension to the principalship or the lack of time to maintain their relationships. Some of the respondents characterised their relationships with their colleagues as ‘territorial safeguarding’ due to the increased accountability and competition in the education sector. The principals reported that such obstacles impeded the maintenance or even the establishment of satisfying interpersonal relationships with their colleagues. In a frank statement regarding loneliness in senior roles, a School Superintendent asserted that leaders have to accept isolation as a natural part of their jobs, so they should “adjust to it, or get out of the business” (Jones, 1994, p. 27). However, accepting isolation as part of the course does not mean it is a healthy or enjoyable experience.

In summary, the research findings on loneliness in the workplace have thus far been inconsistent and have limited generalisability to the wider working population. While they offer noteworthy developments in how loneliness can manifest itself in the workplace, the empirical studies have generally been unfocussed in their attention.

---

<sup>3</sup> Denotes maiden name

However, what we can reap from previous research is the importance of conceptualising and operationalising the term ‘workplace loneliness’, the need to measure loneliness accurately and consistently across a range of occupational groups (which will allow for future comparative study), and the need to assess the characteristics of the respondent’s job and the features of their employing organisation. However, in order to achieve these goals, it is important to understand related fields of study overlapping with the loneliness literature.

### ***Related Areas of Research and Literature***

#### *Interpersonal Relationships at Work*

One would intuitively think that a focus on interpersonal relationships within the work environment was of particular concern in answering very important and basic questions about how work affects human health and wellbeing. After all, most organisations depend on individuals to interact and relate, to negotiate their problems if work is to succeed, and in some service industries to form ‘friendly relations’ to accomplish the work of the organisation (Wright, 1985). Interpersonal relationships formed in a work context therefore have a significant effect on people just by virtue of the time they spend together (Hochschild, 1997). However, while there have been notable and critical developments in understanding how social relationships affect basic human health in psychology (e.g. Ryff & Singer, 1998) and behavioural medicine (e.g. Ornish, 1998), organisational researchers have barely touched the subject. The neglect is even more surprising given that a link between improved interpersonal relationships and various aspects of job performance was evidenced nearly 30 years ago (e.g. performance quality; Hackman & Morris, 1975). However, in recent years there has been a far greater emphasis on workplace stress and wellbeing in association with the conditions of work, and a fairly limited emphasis on the development of interpersonal relationships and how they affect human and organisational wellbeing.

As a general rule, people tend to form interpersonal relationships most easily in social environments that enable a sharing of common values and similar backgrounds (Fine, 1986). Consequently, the workplace environment or organisational climate has the

potential to influence the quality of interpersonal relationships experienced at work. For instance, some work environments actively encourage cooperation, friendliness and social harmony among employees, whereas other workplaces may encourage individualism, distrust and competitiveness. It would therefore seem likely that the espousal of such values would impact upon the types of relationships experienced within the organisation.

In many respects, the social networks formed in a workplace may also reflect the formal organisational arrangements. Research by Krackhardt and Stern (1988) indicates that the organisational structure contributes to the development of informal relationships in the workplace. As such, employees in work environments in which the formal organisational design fosters frequent interactions are more likely to have an opportunity for friendship with other employees. For instance, Fine (1986) considered the relationship between organisational culture and organisational friendliness and identified several factors which enhance interpersonal relationships among co-workers. These factors include humour, ceremonies, shared activities outside of work, and shared tasks.

Although not a work environment study, Aronson and Patnoe (1997) have demonstrated that school-aged children contribute greater trust and friendliness when classroom lessons are cooperative in nature. The authors also noted that positive social advances were realised without compromise to academic achievement. Despite this research being conducted on elementary school children, it suggests that settings which encourage people to work together on problem-solving tasks and shared goals tends to cultivate friendliness and reduce social isolation, without impeding performance objectives.

### *Social Support at Work*

There is a vast body of research investigating social support in relation to its effects on stress and health at work. As such, support from friends, family, and co-workers is generally thought to provide a powerful, naturally occurring force that inoculates one against the deleterious effects of stress (Dignam & West, 1988). However, most of the results from social support studies are ambiguous and inconsistent, making it difficult

to confidently claim causal interpretations of the links between social support and stress. The majority of research on social support and occupational stress is outside the scope of the present research, however there are several themes and research articles worthy of note.

In the social support literature there are two predominant models of the role social support plays in the development of stress; namely, the 'direct' effect hypothesis and the 'moderator' or 'buffering' hypothesis. The direct effect hypothesis argues that social support directly influences psychological and physical health irrespective of the intensity of the stressors experienced. In other words, social support and stressors act independently of one another on strains (Viswesvaran, Sanchez & Fisher, 1998). The moderator hypothesis maintains that social support buffers individuals against the deleterious consequences of stress. Specifically, the relationship between stressor and strain is thought to be stronger for those individuals with low levels of support. A third, and less well-researched model, known as the 'indirect' or 'insulating' hypothesis states that social support has an indirect effect on health by directly reducing perceived stress (Dignam & West, 1988). Overall however, the evidence for the competing models has been tenuous, inconsistent and unclear (Beehr, Farmer, Glazer, Gudanowski & Nair, 2003).

Dignam, Barrera and West (1986) used path analysis to test the indirect, direct and buffering models of social support with correctional officers. The researchers found insufficient evidence for the direct and buffering models of social support. However, the data were consistent with the indirect hypothesis, in that social support was negatively related to perceived role ambiguity, which, in turn, was negatively related to the experience of burnout. However, further research from Dignam and West (1988) found evidence for the direct hypothesis. Cross-sectional data, again on a sample of correctional officers, suggested a direct relationship between social support from co-workers and supervisors and the reduction or prevention of burnout.

Research by Chay (1993) in a study of 117 small business owners and employees suggest that social support enhances wellbeing by moderating the effects of work stressors. As such, this research supports the buffering hypothesis indicating that social support considerably improves the effect of work stress on general health

scores. However, in yet another contradictory piece of evidence, Beehr, Farmer, Glazer, Gudunowski and Nair (2003) studied 117 hospital, manufacturing and pharmaceutical employees to determine whether social support has a direct or moderating role in the relationship between occupational stressors and individual strain. However, their study found few significant interactions or buffering effects in the stressor-strain relationship. According to the authors of the study, one reason for the weak relationships could be that there are individual difference moderators of the relationship between social support and strain. In other words, the relationship between social support and occupational stress may reflect the value people place on social support at work, in that the relationship would be stronger for some employees and weaker for others depending on the importance they place on support.

In some ways, the perceived importance of social support reflects an argument introduced in Chapter Two, indicating that social support is only recognised as helpful and reacted to positively, if the recipient perceives the support to be genuine and valuable to their needs. Such a proposition has ramifications for the study of loneliness at work, in that feeling lonely is based on the perceptions of inadequate relationships in comparison to the value placed on interpersonal relations. Therefore if an individual doesn't place much worth on developing high quality relationships, in the same way they may not place any great importance on social support when they are stressed, they are unlikely to perceive themselves as being lonely.

A meta-analysis conducted by Viswesvaran, Sanchez and Fisher (1998) suggested that social support has a threefold effect on the occupational stressor-strain relationship. Firstly, social support reduced the strains experienced, secondly, social support mitigated perceived stressors, and thirdly social support moderated the stressor-strain relationship. Additionally, the researchers indicated there was insufficient support for the argument that social support is mobilised when stressors or strains are encountered. However, due to the cross-sectional nature of social support research, it is not possible to disentangle the effects of social support and strain. That is, whether social support acts to reduce strain or whether a strained individual fails to maintain his or her support network for instance.

Overall, in spite of the intuitive appeal and promise of social support as a remedy for occupational stress, the way in which social support offsets (or fails to offset) stress remains largely a mystery (O'Driscoll & Dewe, 2001). As such, enthusiasm for social support research has waned in recent years because of these inconsistent and 'dead-end' results.

In other social support research unrelated to occupational stress, an interesting study by McCann, Russo and Benjamin (1997) using a sample of 204 attorneys, suggests that high workplace hostility is related to lower perceived collegiality at work. Moreover, low perceived availability of social support from co-workers was related to greater job dissatisfaction. Research by Lim (1997), on a sample of 306 MBA alumni suggests that supervisor and collegial support can contribute significantly in buffering individuals against job dissatisfaction when job security is in jeopardy. In a study of 102 Australian managers, Lindorff (2001) addressed the issue of social support and workplace stressors, hypothesising that the majority of workplace stressors identified by managers would include concerns about relationships. Lindorff supported this tenet, indicating that 75 percent of the stressors nominated by managers included a relationship appraisal component. For example, the majority of issues related to lack of support, assistance or understanding from superiors, performance confrontations with subordinates, failure to communicate, and poor leadership within the organisation. The author implies that managers who receive limited support when experiencing work-related stress may feel "lonely at the top" (p.281).

### *Friendship at Work*

Workplace friendships are defined as relationships that involve mutual commitment, trust, reciprocal liking and shared values of interests between people at work, which go beyond mere acquaintanceship but that exclude romantic liaisons (Berman, West, & Richter, 2002). Workplace friendship is said to reduce workplace stress (by increasing support and information that helps people do their jobs), increase communication (by fostering formal and informal, horizontal and vertical interactions with open styles of communication), help employees and managers accomplish their tasks, and assist in the process of accepting organisational change. Workplace friendships can also make work more enjoyable and enhance individual creativity

(Yager, 1997). From the organisation's perspective, workplace friendships can lead to greater commitment to the organisation (Rawlins, 1992) and can increase morale and reduce turnover (Kram & Isabella, 1985). On the other hand, employees who are suffering from reduced wellbeing at work can negatively affect the financial performance of the organisation (Sparks, Faragher & Cooper, 2001). For instance, people low in wellbeing are more likely to exhibit health problems, thus needing more time off from work for illness (Cotton & Hart, 2003).

In a sample of 174 employees from a small electric utility company, Riordan and Griffeth (1995) investigated the relationship between perceived friendship opportunities in the workplace and work-related outcomes. Friendship opportunities within the work environment were hypothesised to directly affect job satisfaction and job involvement. Friendship opportunities were also hypothesised to indirectly affect organisational commitment and employee withdrawal through the affect on job satisfaction and job involvement. Structural equation modelling techniques were used to examine the relationships among the constructs, with all aspects of the model being supported in the study. The authors concluded that clear relationships exist between the interpersonal aspects of work, in terms of friendship opportunities, and work-related outcomes, and called for further research on the subject. Due to the cross-sectional nature of the study however, it cannot be determined whether friendship opportunities actually caused the outcome variables, or whether the outcome variables, such as job satisfaction for instance, created the opportunity for friendship to develop. Moreover, the study explored the opportunity for friendship rather than actual friendships. It may well be that mere opportunity for friendship does not inherently lead to the development of meaningful interpersonal relationships.

Friendships in the workplace are perhaps slightly different to friendships which develop in other settings. For instance, friendships at work can be tested or constrained by events outside the realm in which friendship might occur (Winstead, Derlega, Montgomery & Pilkington, 1995). For example, a work based friendship between two co-workers at similar levels within the organisation may be strained by one receiving a promotion to management level, while the same recognition may not be granted to the other. In general, research indicates that friendships are easier to develop when based on status equivalence. A superior-subordinate friendship, for

example, will perhaps be more difficult to maintain as the patterns of association may reflect the tension and strain being experienced in the friendship. Peer to peer, or status equivalent relationships tend to foster a more balanced transaction (Fine, 1986). In research which considered quality rather than opportunity for friendship at work, Winstead, Derlega, Montgomery and Pilkington (1995) examined the relationship between the quality of friendships at work, the hierarchical status between the friends, and levels of job satisfaction among 722 faculty and staff of a university. Participants were required to complete a questionnaire which included scales about the quality of the relationship with their 'best friend at work' (e.g. voluntary interdependence, maintenance difficulty, preferences for communal and exchange relationships) as well as scales measuring job satisfaction using the Job Descriptive Index (Hackman & Oldham, 1975; satisfaction with work, pay, people on the job, opportunities for promotion, and supervision). Overall, the results indicate that the quality of friendship at work is related to global job satisfaction. Specifically, the quality of an employee's relationship with their best friend at work is most likely to be related to satisfaction with their actual work, and somewhat related to satisfaction with the people on the job and supervision on the job. The quality of relationship with the best friend was least likely to be related to opportunities for promotion. The authors argue that opportunities for promotion tend to be evaluated independently of the participant's feelings about the friend, whereas satisfaction in relation to the social aspects of the job are more likely to be evaluated in relation to the perceived quality of a friendship. Not surprisingly, the results confirmed the notion that superior-subordinate relationships were more difficult to maintain, with those who indicated that their supervisor was their 'best friend at work' reporting less job satisfaction.

Berman, West and Ritcher (2002) in their study on manager's perceptions of friendship in the workplace, found that the majority of the 222 surveyed managers have a positive orientation towards workplace friendships. The managers, overall, indicated that friendships improved the workplace atmosphere, improved communication, enabled mutual support and helped employees get their jobs done. Friendships were also associated with improved supervisor-subordinate relationships and the perception of increased employee productivity, as well as assessment of lower stress and employee absenteeism. According to the researchers, the issue is not to socially engineer interpersonal relationships that may place an undue strain on the

natural socialisation process, but to encourage friendships which spontaneously develop in the course of working.

Despite the positive benefits, many organisations look upon workplace friendships unfavourably. And in some cases they have justifiable reason to do so. Workplace friendships can result in romantic liaisons often causing a conflict of interest, or, if the relationship dissolves in an unpleasant discord, there can also be a breakdown in confidence within the organisation. Even more negatively, workplace ‘friendships’ taken too far can result in sexual harassment allegations and criminal proceedings (e.g. Gutek, 1985). Organisational stakeholders are also fearful that friendships may undermine the employees’ loyalty to the organisation, cause unhelpful office gossip, distract employees from work-related activities, and can be a threat to the authority of managers due to workers creating alliances which may be detrimental to the organisation’s mission (Berman, West, & Richter, 2002). Furthermore, some organisational stakeholders believe that fraternising among workers will inhibit productivity. Quite possibly, prolonged amounts of socialising would reduce productivity and be detrimental to organisational outcomes. However, given the current writings and empirical literature on friendship at work, it appears that meaningful and close interpersonal relationships in the workplace represent positive outcomes. In general, it would seem that friendship at work provides an awareness of community, in which shared concerns and a sense of membership or belonging can be experienced by individuals (Fine, 1986).

### *Towards a Conceptualisation and Definition of Workplace Loneliness*

Despite the workplace being regarded as a social institution, for some employees merely being in a social environment is not sufficient to conquer feelings of social deprivation and loneliness. In fact evidence suggests that loneliness has a weak relationship with actual social contact. For example, research by Jones (1981) indicates that college students who are lonely have just as much social contact with others as do students who do not report being lonely. If such results were generalisable to the work environment, one could argue that employees who work in a socially active environment could potentially feel lonely.

Another angle to consider when conceptualising work-based loneliness is that loneliness tends to be more intense and painful when the individual feels lonely in a social environment, rather than feeling lonely as a result of being alone (Sermat, 1980). According to Sermat's (1980) study, which examined hundreds of essays on the experience of loneliness, it is more difficult to cope with loneliness that persists in spite of the fact that one is in the company of peers. Such findings have ramifications for feeling lonely at work, in which loneliness may be amplified due to the social nature of the work environment. For instance, some employees who work in large teams may lack the opportunity, if so desired, to share their thoughts, feelings, and concerns (work-related or otherwise) with other employees despite working alongside one another.

Arguably however, the individual's sense of social and emotional deprivation at work will be amorphous. Because loneliness is a complex phenomenon, its source is not always apparent or known to the person suffering from its distress. As such, the individual may be aware that meaningful relationships are missing and cognisant of the distress associated with the detachment, yet they may not be mindful of what aspects of their social relationships are deficient.

### *Defining Work-Related Loneliness*

One of the issues with attempting to define loneliness for wide application to the workforce is that there is a large variation in what makes individuals feel lonely, and the way they potentially perceive relationship deficiencies in the workplace. Although most theorists on loneliness agree that loneliness results from deficiencies in a person's social environment (e.g. Peplau & Perlman, 1982) it is difficult to interpret reports of loneliness in the workplace where no obvious social deficiency is apparent. Arguably, deficiencies in the workplace arise less from quantitative aspects and more from environmental conditions which stifle the quality of interpersonal relationships. It would therefore follow that being qualitatively dissatisfied with one's relationships at work is more closely related to loneliness than is the amount of contact with fellow co-workers or clients. This proposition marries well with research on childhood loneliness, suggesting the presence of just one close friend can mitigate feelings of loneliness (e.g. Parker & Asher, 1993).

Furthering this line of enquiry, it is also important to recognise that an individual could feel lonely whilst experiencing an invasion of privacy or feeling socially crowded or burdened. It could well be that excessive social contact or mismatched interpersonal relationships could be as distressing as loneliness, depending on the individual's social needs. As such, loneliness at work could occur where there is a craving for a change in the quality of social relationships rather than simply the desire for more relationships.

As indicated in the beginning of this chapter, most relationships in the workplace are heavily influenced by intra-organisational dynamics. In some organisations, social relationships are often controlled through formal policy, organisational structure or hierarchical chains of command. However, most employees expect that interpersonal or informal relationships will spontaneously develop in the course of working. In fact, the development of relationships at work is a significant reason why many people continue to work in jobs they dislike.

Given that the amount of social contact is often influenced by the characteristics of the job or the organisation, the expected socialisation process can often be inhibited. This can therefore create discrepancies between the desired quality of social contact and the actual development of work-based relationships. Therefore, loneliness at work manifests itself as the *distress caused by the perceived lack of good quality interpersonal relationships between employees in a work environment*. Recognising that loneliness is not synonymous with actual social contact, this thesis argues that the discrepancy between actual and desired camaraderie at work, and the inability to rectify this discrepancy, can engender feelings of loneliness. In other words, employees can feel lonely and have difficulty in developing strong relationships at work even when contact with other employees or clients is frequent. As such, the discrepancy arises when the desired quality of interpersonal relationships at work is higher than the actual level. One of the aims of this thesis is to explore the factors that contribute towards a discrepancy between the desired and actual levels.

*Consideration of the Interaction between the Person and the Environment*

Many people experience loneliness ranging from mild disappointment with the quality of relationships to debilitating and emotionally severe psychological distress associated with a lack of interpersonal ties. Intuitively, some employees would be more vulnerable than others to feeling lonely, both in terms of personal inadequacies and environmental conditions. Conceivably however, the origins of work-based loneliness are not exclusively part of the individual's characteristics. Organisational factors such as a negative social or emotional environment, poor job design and lack of support could, in part, be responsible for engendering feelings of loneliness at work. Given this line of inquiry, loneliness would be considered partly situation specific and vary according to social context. As such, environmental factors can reduce the possibilities of maintaining satisfying social relationships. For instance, co-workers who are in direct competition for scarce resources may find it difficult to be supportive of one another (Perlman & Peplau, 1984).

Of course, some organisational factors may have a more profound temporary impact on feelings of loneliness, such as departmental relocation, job rotation or receiving a promotion. Generally speaking, these situations disrupt the individual's social network and would be considered strong precipitating factors for the onset of loneliness. Existing loneliness literature would rightly argue that the degree of loneliness experienced by the individual in each of these situations would depend very much on personality characteristics and behavioural patterns. Unfortunately however, the longer a person remains in a negative social climate and exposed to negative or disruptive interpersonal relationships, the greater the probability of feeling lonely and isolated (Ernst & Cacioppo, 1998).

Arguably, loneliness fluctuates around an average level for each individual, with each average differing from person to person given the contextual situation and the individual's response to it. In this respect, loneliness is considered an enduring trait-like phenomenon, caused predominately by factors within the person, such as social competence and assertiveness, as opposed to being caused primarily by situational or environmental factors. The distinction between trait and state loneliness has been examined by relatively few empirical studies. Those who have discussed it (e.g. Cutrona, 1982; Young, 1982) argue that the differentiation between those individuals who are chronically lonely and those who are temporarily affected more by their

social environment, arises in the exhibition of more long-term cognitive and behavioural interpersonal deficits. Such deficits include personality variables such as shyness, self-consciousness, depression, negative self-concept, self-esteem and inhibited sociability (Marangoni & Ickes, 1989). Those who suffer from chronic loneliness tend to manifest 'anti-social' behaviours, in effect enhancing their propensity to feel lonely.

Intuitively, there is reason to consider loneliness as a phenomenon influenced by both environmental factors and personal characteristics. Thought about in this way, the manifestation of loneliness in the workplace can then be addressed through specific organisational factors and the impact they have on the individual. In order to specifically assess whether loneliness in the workplace is caused by the environment or personal factors, the variables under study would have to be manipulated experimentally in order to demonstrate causal links. Because such manipulations are not psychologically viable, nor ethically possible, concluding that loneliness is caused by either the environment or the person, using alternative research methods, would be misleading. Therefore, it is more likely that correlational cross-sectional assessments of loneliness are tapping into both environmental causes and personal characteristics. For the purposes of the present research, loneliness at work has been conceptualised as a phenomenon that can be influenced both by individual differences and by organisational factors.

Interaction theory argues that individual differences arise through the existence of the relationship between the person and their environment. The idea that both personal characteristics and environmental conditions can influence psychological variables is certainly not a new proposition in the social sciences. Indeed, seven decades ago Freeman (1934) argued that the combined influence of demography and personality in conjunction with environmental characteristics influences individual differences in intelligence scores. The conceptual development of person-environment theories can also be seen in personality and stress research (e.g. Cox, 1978; Lazarus, 1991). Cox (1978) for example conceptualised occupational stress as the transaction between the person and their environment. Cox's underlying theory, which was influenced by the work of Lazarus and his colleagues, stipulates that stress is an individual perceptual phenomenon cyclically influenced by feedback mechanisms within the person's

external environment. More recently, Cox (1993) has argued that the experience of stress at work is associated with the exposure to particular physical or psychosocial conditions of work, and the employees' realisation that they are having difficulty in coping with certain aspects of their work situation. If loneliness at work is to be described as the psychological state which arises when there is a negative imbalance between an individual's perception of their interpersonal relationships and their actual relationships, then it follows that the phenomenon would be influenced by the cognitive processes and emotional reactions which underpin the individual's interactions within their work environment.

The notion that personal and environmental factors can influence loneliness in the workplace is valuable for two reasons. Firstly, similarly with interaction theory, it is important to recognise that the relationship between the work environment and the employee's reaction to work play a dual role in the development of loneliness. As such, considering loneliness from an interaction perspective is widely applicable to the workplace environment. For example, work-related loneliness could well be triggered by an organisational climate fostering individualism, coupled with an individual's tendency to shy away from social moments (e.g. morning teatime, idle chit chat). As such, work-based loneliness can be precipitated by the organisational environment and influenced by factors that predispose an individual to experience loneliness. Additionally, it is important to be aware that employees bring certain cognitive, emotional, behavioural and personality characteristics to the workplace, which influence and have an effect on the individual's feelings about the work environment. Moreover, certain features of the work environment can lead an individual to act in restricted ways, which is perhaps different from their usual self. This mismatch between the core self and the organisation's values (that is, a lack of person-environment fit) could, among other things, lead to a lonely existence at work.

In many ways, the workplace is merely one environment in which loneliness can surface. However, this particular social environment has been overlooked in both the loneliness and organisational literature. Endeavouring to understand the nature of work-related loneliness and the relationship it has with specific organisational and personality factors will allow for a better understanding of how loneliness manifests

itself in the workplace.

## CHAPTER FOUR

### **Development of the Loneliness at Work Scale**

In order to empirically study loneliness in the workplace it is first necessary to have some way of measuring it. As indicated in the previous chapter, researchers in the past have utilised global measures of loneliness to assess work-related loneliness. Measuring loneliness in this way can produce ambiguous results, in that it is not clear what aspects of loneliness or relationship deficiencies are specifically being measured. According to Russell (1982) scales developed for specific constructs have the potential advantage of more accurately identifying certain variations in the experience of loneliness which may be particularly useful in helping lonely individuals.

This chapter begins with a review and discussion on the methodological issues associated with measuring loneliness, the development of loneliness scales to date, and the factorial structure of current loneliness scales. This review will then lead into a description and discussion on the development, reliability and factor analyses of the scale designed to measure loneliness at work, which will form the basis for the study in Chapters 5 and 6.

### ***Methodological Approaches to Assess Loneliness***

One method for assessing whether or not an individual is lonely at work could be to use a single-item direct inquiry method, such as ‘How often do you feel lonely at work?’. The unreliability of single-item measures is however a well documented canon within psychometric theory (Nunnally, 1978). As such, there is limited information to be gained regarding the intensity of loneliness at work, or whether it is a short-lived feeling or long-term problem. An associated problem with single-item measures of loneliness is the respondents’ ability to be cognisant of their loneliness (including being aware of the conceptual referent for their feelings), and their willingness to disclose themselves as such. In her early article on loneliness, Fromm-Reichmann (1959, p. 6) argued that “people who are in the grip of severe degrees of loneliness cannot talk about it; and people who have at some time in the past had such an experience can seldom do so either, for it is so frightening and uncanny in

character that they try to disassociate the memory of what it was like”. Moreover, as indicated in Chapter Two there is often a stigma associated with being labelled as lonely, in that being isolated and without friends or family is considered a sign of social failure. Subjective or psychological states are therefore typically assessed through multiple items, usually in an indirect, non-obvious manner. In order to accurately measure and tap into the experience of loneliness, devices requiring the respondent to self-label themselves as lonely are not often used (Marangoni & Ickes, 1989). In practice, because perceived deficiencies in interpersonal relationships play a central role in the etiology of loneliness, questions associated with this deficit frequently constitute the criterion for inclusion in loneliness scales (e.g. de Jong-Gierveld, 1987; DiTommaso & Spinner, 1992; Russell, 1996).

Self-report methodologies are often viewed negatively by researchers (Spector, 1994). The use of additional methods or sources of data, such as behavioural observations, experiments and interviews can therefore help control method variance. However, when assessing an individual’s level of loneliness, problems arise with each of these additional techniques. Because loneliness is an intensely private and subjective experience there are often no accurate outward signs or objective measures of loneliness which can be assessed by an independent observer. Interestingly however, many popular authors and artists use the words lonely or loneliness to describe a character’s objective situation or behaviour. For example, artwork depicting an individual walking solemnly or pensively by themselves will often be captured by the title ‘loneliness’. As indicated earlier, we have to be somewhat cautious about attempting to label individuals as lonely from behavioural observations, as judgments of this nature may not be accurate or representative of the actual experience of loneliness. In fact, longitudinal research by Spitzberg and Hurt (1987) on 160 college students, demonstrates that observer ratings of social skills is unrelated to measures of global loneliness. According to the researchers, the affective or behavioural cues alone are not sufficient to identify or diagnose loneliness. In reality, it is more likely that people will refer to their negative affective state as depression or stress before they lead to the self-diagnosis of loneliness (Rook, 1988). As such, a self-report scale attempting to measure loneliness must be particular about tapping self-perceived interpersonal deficits, and not behavioural situations which may not accurately reflect the experiential nature of loneliness.

In brief, and as outlined in Chapter Two, assessing loneliness using experimental techniques is considered ethically dubious and psychologically difficult to manipulate. Researchers such as Weiss (1989) have used vignettes to induce feelings of loneliness, which could however result in reflections about loneliness or judgements about the characters in the scenarios, rather than actually induce feelings of loneliness. Interviews, on the other hand, have the potential to reap rich data from respondents who feel lonely. However, because loneliness is a deeply personal experience, answers to sensitive questions relating to interpersonal relationships could potentially be influenced by social desirability and the stigma associated with loneliness more so than self-report responses. In fact, research demonstrates that face-to-face interviews tend to induce more socially desirable responses and lower accuracy than computer-administered or paper-and-pencil questionnaires (Podsakoff, MacKenzie, Yeon-Lee & Podsakoff (2003).

In essence therefore, it is generally agreed that self-reports are valid indicators of people's feelings about work (Spector, 1994). Despite the inherent problems associated with self-report, such as common method variance, it need not impede our search for a valid understanding of psychological phenomena, particularly a phenomenon such as loneliness. Practically, there seems no other plausible or effective way to measure loneliness other than gauging the perceptions of the individual. It therefore follows that perceived relationship deficiencies reported by the individual form the dominant theme underlying the development of the loneliness at work scale items.

### *Unidimensional and Multidimensional Measures of Loneliness*

Over the past few decades, several measures have been developed to assess various aspects of loneliness. Some of these scales measure loneliness unidimensionally, capturing the concept in a single global measure (e.g. de Jong-Gierveld & Kamphuis, 1985; Russell, Peplau & Ferguson, 1978; Russell, 1996). This unitary conceptualisation of loneliness implies that being lonely is undifferentiated in nature, and is experienced in the same way by all lonely people regardless of environment (Allen & Oshagan, 1995). Loneliness has traditionally been seen in this light, both conceptually and in measurement. However, global measures of loneliness typically

fail to take into consideration the contextual factors of where the lonely feelings might stem from. For example, when asked about loneliness using a global measure, the individual may be thinking about their intimate relationship(s), their workplace, their education setting, their extended family, or their social relationships in general. Moreover, factor analyses of unidimensional scales reveal that in most situations the scales are not measuring a unitary construct, with several studies consistently identifying a two-factor model (e.g. Knight, Chisholm, Marsh & Godfrey, 1988).

Theorists such as Rook (1988) argue that loneliness is a multidimensional construct and therefore should be measured using multidimensional instruments. In this light, researchers have set out to measure loneliness as a multidimensional concept (e.g. DiTommaso & Spinner, 1992; Schmidt & Sermat, 1983; Vincenzi & Grabosky, 1987). Multidimensional scales of loneliness assume that loneliness can result from several different personal or social situations, can be experienced in many different ways, and need not affect all areas of one's functioning (Solano, 1980). Further, multidimensional conceptualisations describe loneliness as a multifaceted phenomenon with various manifestations, such as intimate loneliness, feeling isolated from a group of others, or feeling estranged or marginalised from the surrounding culture (McWhirter, 1990). Russell (1982) makes the point that multidimensional measures of loneliness may nevertheless fail to capture all areas of one's experience of feeling lonely.

In a nutshell, researchers have taken two different approaches to the measurement of loneliness. Unidimensional, or global scales view loneliness as a singular phenomenon (regardless of whatever is causing the individual to feel lonely), and focus on the commonalities underlying the experience of loneliness for all individuals. Multidimensional measures on the other hand, attempt to differentiate among various hypothesised manifestations of loneliness.

### *Unidimensional Scales*

An example of a unidimensional scale is The UCLA Loneliness Scale, which is perhaps the most widely used assessment tool to measure individual differences in loneliness (originally constructed by Russell, Peplau & Ferguson, 1978; refined by

Russell, 1996). The scale, which is made up of 20 items, taps into both the frequency and intensity of salient aspects and events of the lonely experience (e.g. “How often do you feel in tune with people around you?”). In order to reduce response bias, the word ‘lonely’ never appears in the scale. The scale has, according to Russell (1996), a strong general factor as it was constructed to measure a unidimensional aspect of loneliness, not various types of loneliness. However, factor analytic studies of the revised UCLA Loneliness Scale have shown that it may measure a multidimensional construct of loneliness (Allen & Oshagan, 1995; Austin, 1983; Hays & DiMatteo, 1987; Hojat, 1982; McWhirter, 1990; Zakahi & Duran, 1982). The majority of studies exploring the structure of the UCLA Loneliness Scale have found two or three factors which underlie the scale, reflecting intimate, social and affiliative aspects of loneliness. Austin (1983) suggested a three factor structure for the scale, namely loneliness related to intimate others, social network, and belonging and affiliation with the social environment. McWhirter (1990) also found a three factor structure of the UCLA Loneliness Scale. The three dimensions of loneliness in his study related to intimate others, social others, and the affiliative environment. Allen and Oshagan (1995) found that the univariate assessment of loneliness in the UCLA Scale was made up of only 7 items, primarily referring to a lack of close relationships.

New Zealand research by Knight *et al.* (1988) indicated that the UCLA Scale comprised a two-factor structure when surveyed on a sample of 978 adults from the general population. However, according to the results of the study, this two-factor solution represented an artefact based largely on item polarity with positive items loading on one factor and negative items loading on the other. The authors argued that the use of a four point Likert lacks an *always* response option and results in a J-shaped distribution of scores on positive items but not on negative items. Because the correlations were calculated on items with dissimilarly shaped distributions, the correlations were low and therefore the two factors emerged based on item polarity rather than item cohesiveness. This is similar to Austin’s (1983) study, suggesting that all the negatively worded items loaded on the first factor (intimate others), and the positively worded items on the other two factors (social network and belonging). It appears from the above review that the UCLA loneliness scale, while sufficient in measuring a global assessment of deficiency in interpersonal relationships, provides

limited information about the sources or nature of the social deficiency. In effect, it perhaps is a unidimensional scale measuring a multidimensional construct.

Another example of a unidimensional loneliness scale is the Rasch-Type Loneliness Scale developed by de Jong-Gierveld and Kamphuis (1995). A Rasch-Type scale is designed for dichotomous variables (rather than a latent trait which is thought to be continuous), and assumes unidimensionality. This 34-item scale is based on three dimensions of loneliness; type of deprivation, time perspective, and emotional characteristics. The scale was designed to measure how people perceive, experience and evaluate their isolation and lack of communication with others. Although the factor analytic evidence for the unidimensionality of this scale is weak (in that item polarity defines the factors), the items seem to be closer to the experiential aspects of loneliness than are items on other loneliness scales (e.g. “There’s no one really that I would like to share my ups and downs with”).

In many respects, these studies provide evidence for the multidimensional measurement of loneliness, although care must be given to item wording to avoid methodological artefacts emerging in the factor structure. Overall however, they provide evidence that loneliness may not be a global construct, and may be experienced in one or more ways, through, for example, a lack of intimate companionship, or through a diminished sense of belonging or affiliation with the social milieu (Austin, 1983).

### *Multidimensional Scales*

Over the past two decades, since the publication and development of the UCLA Loneliness Scale, a number of researchers have replied to the criticism that the phenomenon of loneliness was not adequately covered by unidimensional scales.

The Differential Loneliness Scale, as an example of a multidimensional scale, was designed by Schmidt and Sermat (1983) and looks at the relationships considered deficient by the respondent, in terms of quality or quantity. The development of the 60-item scale was based on Sermat’s (1980) research reviewed in Chapter Two of this thesis. The true-false dichotomised scale covers various types of relationships,

including romantic-sexual relationships, friendships, relationships with family, and links with larger social groups or the community. Relationship dissatisfaction is assessed in terms of five interaction dimensions: presence-absence, approach-avoidance, cooperation, evaluation, and communication. No items include the words 'lonely' or 'loneliness'. In evaluating the development of loneliness scales, the Differential Loneliness Scale appears to be unique for its time, as it emphasised and measured loneliness in various kinds of relationships.

Rokach and Brock (1997) suggest a comprehensive five-factor model of loneliness. The five factors have been classified as emotional distress, social inadequacy and alienation, growth and discovery, interpersonal isolation, and self-alienation. Rokach and Brock's more lengthy scale (82 items) encompasses a wider multidimensional view of loneliness, and incorporates cognitive, emotional, behavioural and self-awareness aspects of loneliness. The authors attempt, with some degree of success, to incorporate measures of coping strategies into the loneliness scale. Arguably however, the scale measures concepts beyond loneliness, or at least items which are not specifically defined by the construct. For example, the scale has items relating to hopelessness, self-deprecation and a lack of perceived control. Although these factors are in many ways related to loneliness, and may actually cause the experience for some individuals, it is questionable as to whether they actually define loneliness, or some other construct closely related to loneliness.

Cramer and Barry (1999), using a sample of young Canadian college students, looked further into the multidimensionality of loneliness and found four emerging factors related to seven previously developed scales of loneliness. The researcher's results suggest there are four correlated factors common to all seven scales, namely, social loneliness, emotional loneliness, negative affect, and family loneliness. The authors raise the pertinent issue of whether measuring loneliness through affective elements is simply tapping into negative affect, rather than assessing loneliness per se. It is generally agreed that loneliness tends to embody a host of negative emotions, however the reverse argument (that negative affect embodies loneliness) is less convincing. For example, an individual who feels sad or depressed may not necessarily feel lonely, whereas a lonely individual is likely to feel a myriad of negative emotions, including feeling sad for example.

In principle, a balance needs to be achieved to reliably and accurately measure the specific construct of loneliness at work. There needs to be consideration of the items which reflect the specific construct of loneliness, while also recognising that loneliness can stem from multiple causes or from differing social environments. Although in practice this may prove difficult, there is a conceptual need to distinguish between the feelings associated with each type of loneliness (i.e. intimate, social, sense of belonging) because the strategies employed to treat these feelings may be considerably different (Rook, 1984a).

### *The Measurement of Emotional and Social Loneliness*

Weiss (1973), one of the first proponents of a multidimensionality perspective on loneliness conceptualised loneliness as either emotional or social in nature. Although reviewed in Chapter Two of this thesis, the discussion in this chapter rests on the measurement of the conceptual distinction between social and emotional loneliness. Social loneliness, Weiss (1973) claimed, involves the perception of inadequate social networks, whereas emotional loneliness stems from the absence of a close intimate relationship. The underpinnings of Weiss' theoretical examination infer that various types of relationships create different social provisions, all of which may be required by the individual under some conditions. Weiss suggested six social provisions: attachment, social integration, reliable alliance, guidance, reassurance of worth, and opportunity for nurturance. His theory on loneliness argues that the experience is a response to the absence of a particular social provision, with emotional loneliness reflecting an absence of the social provision of attachment, whereas social loneliness stems from social integration deficiencies.

Research by Rubenstein and Shaver (1982) supports the notion that emotional and social loneliness are distinct states. They found that two of the 'feeling' factors in their loneliness scale reflect social and emotional loneliness. This result prompted the researchers to suggest that "the prominence of these dimensions in our data is strong evidence of their validity, and a sign that separate scales could be constructed to measure emotional and social isolation" (p. 219). Further research by Russell, Cutrona, Rose and Yurko (1984) found that, amongst 505 college students, single item measures of emotional and social loneliness were associated with different

precursors, that is, attachment predicted emotional loneliness, whereas social reassurance predicted social loneliness. DiTommaso and Spinner (1993, 1997) examined Weiss' typology of social provision and created a 37-item (later winnowed down to a 15 item) measure of emotional and social loneliness. The Social and Emotional Loneliness Scale for Adults generated three conceptually distinct factors of loneliness. Two of these dimensions, romantic and family loneliness, were interpreted as representing emotional loneliness, each contributing 27.1 and 15.0 percent of the variance accounted for. The remaining factor represented social loneliness, and accounted for 10.3 percent of variance.

As indicated above, Rokach and Brock (1997) have furthered the research on the multidimensionality of loneliness. Their scale suggests that emotional distress is the most salient feature of the experience of loneliness, followed by social inadequacy and alienation, furthering the support for the conceptual distinction between emotional and social loneliness. Cranmer and Barry's (1999) research, as mentioned earlier indicates that social loneliness and emotional loneliness explained 60 percent of the shared variance in the four loneliness subscale scores.

The preceding review suggests that there is a conceptual and empirical distinction between emotional and social loneliness, relating to intimate relations and social relationships more broadly. In conceptualising and measuring emotional loneliness at work, we are not, of course, talking about the lack of an intimate tie with another individual, or the lack of a romantic relationship. Conceivably, emotional loneliness in the workplace would refer to the deprivation felt when one does not have the perception of a desired friendship or personal connection with another individual at work. Having a close alliance with another person at work could potentially fulfil an individual's emotional needs while at work, enabling trust, loyalty and social support. Social loneliness, on the other hand, could refer to an employee experiencing a sense of deprivation in social integration or deficiencies regarding their social network, and consequently not feeling part of the work 'team' or social environment.

### ***The Measurement of Work-Related Loneliness***

Despite the number of scales to measure various aspects of loneliness, no published scale specifically measures loneliness at work. Researchers such as Cubitt and Burt (2002) and Dussault and Thibodeau (1997) have modified the existing UCLA Loneliness Scale to suit the work environment by placing 'at work' as a precursor to each item. However, on analysis several of the items are inappropriate when placed in the context of the workplace. Others have used general scales of loneliness or direct-inquiry methods and related a global assessment of loneliness to work and organisational factors (Bell, Roloff, van Camp & Carol, 1990; Reinking & Bell, 1991). However, such scales do not distinguish between factors that are derived from the workplace and loneliness in general.

To enable further enquiry, it is necessary to develop a tool that specifically assesses an individual's feeling of loneliness as it relates to the work environment. In view of the limitations of the available instruments to measure loneliness in the workplace, a scale was developed with the intention of more accurately capturing the experience of loneliness at work. The remainder of this chapter discusses item development and the subsequent evaluation of reliability and factor structure.

### ***Development of the Loneliness at Work Scale Items***

#### ***Generation of the Item Pool***

In accordance with scale development principles (Kline, 2000) and in order to construct a discriminating and accurate set of items, the notion of face and construct validity were built into the development process from the outset. Based on the conceptualisation of work-related loneliness discussed in the previous chapter the construct is considered a latent trait and is assumed to be continuous. As such, the construct has been conceptualised as points along a continuum of interpersonal evaluation.

The items for the scale were generated from theoretical and empirical literature which collectively influenced the development of the pool of potential items. Literature was

canvassed on loneliness, isolation, aloneness, social support, friendship, interpersonal relationships (previously reviewed in Chapter Two & Three), ostracism (Williams, 2002), interpersonal rejection (Leary, 2001), sociability and shyness (Cheek & Buss, 1981) and job characteristics (Houkes, Janssen, de Jonge, Nijhuis, 2001; Kulik, Oldham & Hackman, 1987), and were based on experiences that typically occurred in the context of the workplace.

In developing the items for the current scale, previously developed loneliness scales were reviewed, such as the UCLA Loneliness Scale (Russell, Peplau, and Cutrona, 1980; Russell, 1996), Rokach and Brock's (1997) multidimensional scale of loneliness, state vs. trait loneliness scales (Gerson & Perlman, 1979; Shaver, Furnham & Buhrmester 1985), the Loneliness Rating Scale (Scalise, Ginter & Gerstein, 1984), the Rasch-Type Loneliness Scale (de Jong-Gierveld & Kamphuis, 1985), the Differential Loneliness Scale (Schmidt and Sermat, 1983), emotional and social loneliness scales (Cramer & Barry, 1999; DiTommaso & Spinner, 1993; Russell, Cutrona, Rose & Yurko, 1984; Vincenzi & Grabosky, 1987), the Children's Loneliness Scale (Asher, Hymel & Renshaw, 1984), and Hays and DiMatteo's (1987) short-form measure of loneliness.

From this review 90 potential items to measure the construct were developed, which are reported in Appendix 1. The items sought to identify common themes that characterised the experience of loneliness in the workplace for a broad spectrum of employees. While the majority of items were based on theoretical conceptualisations of loneliness and previously established loneliness scales, some of the items were generated from experiences within a corporate environment, and from conversations with colleagues. The items in general, tapped into various aspects of social support and friendship from co-workers, affiliation with co-workers, and emotional deprivation at work. The 90-item scale was subjected to a review by two academics and three lay reviewers (two lawyers and a nurse). The items were also scrutinised in accordance with previously reviewed theoretical and empirical literature for conceptual fidelity. All five reviewers indicated that the scale was comprehensive but too lengthy, with item redundancy in places. From this conceptual review, the scale was reduced to 60 items. The 60-item scale, which was used in subsequent analyses reported below, is attached as Appendix 2.

### *Initial Test of the Item Pool*

To instigate the evaluation process and to explore the factor structure of the 60- item scale, the items were piloted using a convenience sample of first year undergraduate psychology students in a university laboratory class. Students were informed that their participation in the research was entirely voluntary and anonymous, and no incentive was offered. The students were asked to think about their current job or a previous job when responding to the set of items. The instructions asked individuals to respond to each statement on a 7 point Likert scale from Strongly Disagree (1) to Strongly Agree (7). Scale scores were based on a sum of item responses, with positively worded items reverse scored.

Two hundred and sixty nine questionnaires were returned, of which four were discarded due to substantial missing data (over 30% of items missing). There were 191 female respondents and 74 male respondents, averaging 20.9 years in age. Item-total correlations were generally high, with only seven of the 60 items generating correlations less than 0.45. The results were subjected to exploratory factor analysis to determine the underlying factor structure. Due to the exploratory nature of the research and to maximise simple structure, the Varimax procedure was used as it did not depend on any assumptions about the general structure of the variables (Kline, 1994). To avoid over specification, factor loadings were set at 0.40. Ten factors with eigenvalues greater than or equal to one emerged and were then considered in relation to the scree test. As a result of the scree test examination, three factors emerged as salient, with 22 items in the first factor, 22 items in the second and 12 items in the third. The resulting three factors explained 42.4, 4.4, and 3.1 per cent of the variance respectively, and their corresponding eigenvalues for the different factors were 25.5, 2.6, and 1.9. The values of Cronbach's alpha reliability coefficient were 0.95, 0.95, and 0.90 for the three factors respectively and 0.97 for the total scale.

It would appear that while the initial set of items demonstrated high internal consistency, the clarity of the factor structure was less evident. The proportion of total variance accounted for by the second and third factors appeared inconsequential compared to the variance accounted for by the first factor. Moreover, the three clusters formed during the factor analysis revealed conceptually meaningless

groupings with an unclear composite set of items. From further analysis it appeared the scale suffered from a measurement artefact, in that the factor solution was based largely on item polarity. Two of the factors solely represented positively worded items, while the remaining factor represented negatively worded items. This could suggest acquiescence amongst the respondents, and that the factors were simply a measure of a response set (Caught, Shadur & Rodwell, 2000). Additionally, the factors which emerged from the analysis could have been affected by the sample from which they were obtained (Kline, 1994). Consequently, recruiting a student sample may not have accurately represented the intended population and may have had some bearing on the factorial inadequacies of the scale. It was thought that a more valid solution would be obtained if the analysis emerged from a sample that more similarly matched the population of interest.

### *Employee Sample*

The 60-item scale was administered to 12 office workers and partners in a small legal practice to gauge their perceptions of the content of the scale. The sample included eight women and four men, ranging in age from 25 through to 57. The employees were asked to make critical comments on the scale items, identify any items which they considered were ambiguous and make general comments regarding the scale and its instructions. As a general rule, a 90- or 60-item instrument is too long for use in applied research. Consequently, the excessive length of the scale was noted by most of the respondents. Keeping a measure as short as is conceptually possible is an effective way to minimise response bias by reducing respondent fatigue or boredom (Anastasi, 1976).

Consequently, a winnowing process was instigated which involved several stages. Firstly, items were reviewed in relation to the theoretical underpinnings and definition of loneliness in the workplace as discussed in Chapter Three. Secondly, discussions were held with academics and colleagues about their understanding and experiences of loneliness, and finally the items were reviewed for fidelity with the construct, readability and clarity. The statistical and conceptual flaws discovered during the initial analysis were also taken into consideration when rewriting the scale. Written comments received from both the student respondents and office workers also aided

the revision process, in that it became clear which items should be deleted or reworded. Overall, an attempt was made to delete non-discriminating items, or items that were conceptually deficient in tapping the experience of loneliness at work. The item review also highlighted the need within the scale to differentiate between those individuals who are desirous of social and emotional companionship and are unable to achieve it, and those who willingly choose to refrain from social contact (as discussed in Chapters Two & Three). To allow for this differentiation the addition of “if I want to” was included after some of the statements, which allowed the person to agree or disagree with the item given their interpersonal preference.

Based on the item review, 44 of the statements were systematically excluded from further analysis. The excluded items, overall, demonstrated low levels of variance, were ambiguous, redundant or non-discriminatory, were poorly conceptualised, or were items more representative of variables related to, but distinct from loneliness such as personality, social competence, trust, shyness, social support or negative affectivity. Because loneliness is a cognitive and perceptually-based construct rather than behavioural in nature, the revised items were also developed to better reflect its subjective and experiential characteristics.

The remaining 16 items were scrutinised to ensure they specifically related to the work environment and not to loneliness in general. No reference to loneliness was made either within the scale or when introducing the research to participants, as it can produce socially constructed gender effects (Borys & Perlman, 1985) and respondents may be discouraged from participating due to loneliness being seen as a social failure (Hancock, 1986). This avoidance of explicitly acknowledging the construct being assessed is not unusual in loneliness measures or in mood assessment (Russell, 1982). For example, researchers measuring anxiety would rarely ask respondents “Are you anxious?” but instead ask them to specify whether or not they are experiencing other emotions or experiences related to the mood or construct being measured (e.g. Beck, Epstein, Brown & Steer, 1988). This approach helps lessen the impact of social desirability by disguising what is being measured.

The items were randomly ordered and balanced to produce eight positively worded items and eight negatively worded items. Positive statements were included to avoid

respondents having to respond to a long list of negative accounts of interpersonal relationships, which may in itself be a negative experience, potentially distorting the results. The key word from each item was scrutinised to ensure the negatively worded items were not merely an antonym of the positively worded items. This process was used to reduce response bias witnessed in the initial test of the scale, which is often associated with scales that include positively and negatively worded items (Caught, Shadur & Rodwell, 2000). Each item was rated on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Again, scale scores were based on a sum of item responses, with positively worded items reverse scored. Higher scores indicated greater degrees of loneliness at work.

To verify face validity and ensure clarity of the items, the revised scale of 16 items was distributed to a group of 19 employees from a large insurance corporation. The sample included 14 women and four men (gender not reported in one case), ranging in age from 19 through to 49. The employees were asked to complete the questionnaire anonymously and return it to the researcher in the reply paid envelope provided. In addition, respondents were asked to comment on the clarity and usability of the scale and its associated instructions. A number of respondents commented on their social relationships at work, and without provocation suggested that their position and the organisational culture fostered a sense of loneliness. From this pilot, a minor grammatical change was made to two of the items.

### ***Study One ~ Exploratory Factor Analysis and Reliability***

#### *Procedure*

The purpose of the first study was to explore the factor structure and reliability of the loneliness at work items. In exploratory factor analyses it is generally best to use a heterogeneous and properly sampled group of respondents to increase the variance (Kline, 1994). The decision was therefore made to publish and administer the scale on a website over the World Wide Web to generate a wide cross section of respondents. Data were also collected on the participants' job title, age, gender, marital status, and country of residence. Two list-servers were employed to recruit participants via email, with subscriber numbers of 417 and 123 at the time of distribution. Subscribers of

these lists are interested in, or practice in the field of organisational psychology or human resource management. Recipients of the email were invited to forward the invitation to fellow employees to generate a larger pool of respondents. Although collecting data over the internet limits the sample to typically white-collar tertiary educated workers (Wilson, 2000), it was considered an acceptable medium for the study, as the conceptual development of the scale was initially designed with this work environment in mind (that is, professional, managerial, executive, skilled and administrative positions). This is not, of course to say that blue-collar workers would not experience loneliness at work. The purpose of this particular research however, was to focus on work environments which require the provision of intellectual and human services, as opposed to manual labour.

The participants had a period of three weeks to respond to the questionnaire, which on average took approximately four minutes to complete. A unique system-generated number was allocated to each response so multiple responses from one individual could be deleted. Respondents who chose to participate in the retest study were emailed four weeks after the first data collection period was completed, and were requested to return to the internet site to submit the questionnaire once again. Retest respondents were given one week to submit the questionnaire. No incentive was offered to participants for completing the questionnaire.

### *Sample*

A total of 537 submissions were received, with 23 submissions demonstrating substantial missing data. Because of the degree of missing data in these cases (over 30 per cent), only complete data sets were used for subsequent analysis. Participants comprised 356 females (66% of sample) and 177 males (33%), with four not indicating their gender. The mean age of respondents was 39.8 years ( $SD = 11.6$ ), with a range of 19-65 years. The majority of participants were either married or in common law relationships ( $N = 327$ , 61%). Most participants resided in New Zealand ( $N = 427$ , 80%). Those in the study had diverse occupations, with the majority coming from science or research ( $N = 109$ , 20%), management ( $N = 99$ , 18%), academia ( $N = 95$ , 18%), or clerical positions ( $N = 55$ , 10%). The use of a varied data set,

representing a reasonable range of occupations from both public and private sectors, helped reduce the possibility of industry sector or organisational bias.

### *Descriptive Statistics*

The mean loneliness score for the sample was 40.38 ( $SD = 17.09$ ) with a range of 16 to 107 (from a possible range of 16-112). Higher scores indicated higher levels of loneliness at work. The mean score for men was 42.0 ( $SD = 16.67$ ) and 39.55 ( $SD = 17.33$ ) for women, a difference which was not statistically different,  $t(509) = 1.53$ ,  $p = 0.13$ . Within the sample, the mean (40.38), median (36.0), and mode (32.0) were fairly similar, suggesting that the distribution of scores was reasonably normal. However, relatively few respondents received high scores resulting in a positive skew (skewness = 1.25).

### *Exploratory Factor Analysis*

To assess the appropriateness of factor analysis on the first data set, the Kaiser-Meyer-Olkin (K-M-O) measure of sampling adequacy and the Bartlett test of sphericity were obtained. The K-M-O measure indicates the proportion of common variance in the measured variables. Values less than 0.5 suggest that the variables will not factor well, whereas values over 0.9 are considered 'marvellous' for proceeding with factor analysis (Tabachnik & Fidell, 1989). In the present study the K-M-O was 0.96. The Bartlett test of sphericity was used to check for variable independence in conjunction with the factor analysis. The value obtained was 5190.86 ( $df = 120$ ,  $p < .001$ ) indicating scale item independence. Additionally, the ratio of usable responses to items was 32:1, which is considered acceptable to proceed with factor analytic techniques (Kline, 1994).

The item-total correlations ranged from 0.45 to 0.78 and are presented in 4.1. Every item achieved the desired 0.40 cut-off as recommended by Nunnally (1978), therefore all items were retained for the factor analysis. The Kaiser test, which uses criteria based on eigenvalue size being greater than one, indicated that two factors should be extracted for the factor analysis. An examination of the scree plot confirmed this indication. The eigenvalues for the two factors were 8.55 and 1.34 respectively. To

allow for correlations between factors the chosen method for extraction was principal components with oblique rotation (direct oblimin using SPSS). While oblique rotation is less common in psychological research, it often represents the variables more accurately than orthogonal rotation, since the axes can rotate more freely and correlations between the factors are possible. The 16 items were designed to measure an overarching construct and therefore it is expected that the factors extracted would be correlated. The factor loadings from the oblique rotation are presented in Table 4.1 over.

Items had high loadings on their respective factor, with only one cross loading above .30 (Item 11). The results from the analysis defined two preliminary factors. The first factor related to emotional deprivation at work (items 1 through 9) and the second factor related to social relationships at work (items 10 through 16). The first factor explained 53.44% of the total scale variance and comprised seven negative items and two positive items, while the second factor explained 8.37% and was made up of six positive items and one negative item. The emotional deprivation factor appeared to measure the qualitative aspects of co-worker relationships, and included key words such as 'feel', 'isolated', 'alienated', 'disconnected', and other words that describe being emotionally distant. This factor could therefore be defined as the *perception of the qualitative aspects of one's work-related relationships*. The social companionship factor was associated with the quantitative aspects of co-worker relationships, and included words such as 'share', 'time with', 'part of a group' and other phrases that depicted reliable and plentiful social fellowship. This factor could be defined as the *perception of the quantitative aspects of one's work-related relationships*. The emotional deprivation and social companionship factors were found to be quite strongly correlated ( $r = .63$ ). The analysis indicates that there are two dimensions of loneliness at work which represent qualitative content differences in item representation, and therefore may not simply be a result of item polarity or response style.

**Table 4.1***Item-Total Correlations and Factor Analysis Pattern Matrix for the Loneliness at Work Scale*

Scale Items		Item-Total Correlations	Factor Loadings	
Item			Factor 1	Factor 2
<i>Items Relating to Emotional Deprivation</i>				
1.	I often feel abandoned by my co-workers when I am under pressure at work	.45	<b>.74</b>	.12
2.	I often feel alienated from my co-workers	.65	<b>.80</b>	.00
3.	I feel myself withdrawing from the people I work with	.65	<b>.77</b>	.06
4.	I often feel emotionally distant from the people I work with	.70	<b>.79</b>	.07
5.	I feel satisfied with the relationships I have at work*	.65	<b>.64</b>	.23
6.	There is a sense of camaraderie in my workplace*	.60	<b>.72</b>	.08
7.	I often feel isolated when I am with my co-workers	.74	<b>.85</b>	.01
8.	I often feel disconnected from others at work	.78	<b>.89</b>	.00
9.	I experience a general sense of emptiness when I am at work	.55	<b>.75</b>	.02
<i>Items Relating to Social Companionship</i>				
10.	I have social companionship/fellowship at work*	.69	.22	<b>.68</b>
11.	I feel included in the social aspects of work*	.60	<b>.39</b>	<b>.47</b>
12.	There is someone at work I can talk to about my day to day work problems if I need to*	.58	.03	<b>.75</b>
13.	There is no one at work I can share personal thoughts with if I want to	.57	.09	<b>.81</b>
14.	I have someone at work I can spend time with on my breaks if I want to*	.50	.09	<b>.76</b>
15.	I feel part of a group of friends at work*	.61	.27	<b>.59</b>
16.	There are people at work who take the trouble to listen to me*	.58	.10	<b>.69</b>
Eigenvalues			8.55	1.34
Percentage of Variance Explained			53.44	8.37
Cronbach's Alpha Reliability Coefficient			.93	.87

\* Items that are asterisked have been reversed scored

Only one item loaded above .30 on both factors: 'I feel included in the social aspects of work'. This item must therefore be interpreted with caution because simple structure is not apparent. However, although this item conceptually taps into the social side of the scale, the words 'feel included' reflect a sense of emotional security, hence its relationship with the emotional deprivation factor. Because of its conceptual relevance to the definition of social companionship at work the item was preserved for further analysis.

### *Reliability*

Cronbach's coefficient alpha, a measure of internal consistency, was obtained for the scale as a whole as well as for each factor. The coefficient alpha for the total scale was .94. The alpha for the first factor was .93, while the alpha for the second factor was .87. Two hundred and twenty one participants provided retest data. The retest sample comprised 154 females and 67 males. The mean age of respondents was 37.1 years ( $SD = 11.0$ ), with a range of 19-65 years. Test-retest reliability for the scale was estimated approximately 4-7 weeks after the first data collection session depending on when the respondent chose to complete the questionnaires. The test-retest reliability for the total scale was .83 and .80 for each factor.

## ***Study Two ~ Confirmatory Factor Analysis***

### *Procedure*

The purpose of the second study was to test the two-factor structure identified in the first study, using confirmatory factor analysis. The data collected for the confirmatory factor analysis was collected as part of the main study looking at the Loneliness at Work Model (see Chapter Six).

Once more, the primary vehicle for data collection was a website published on the internet. The webpage, which includes the research questionnaire used to test the Loneliness at Work model, is included as Appendix 3. Participants were recruited using several channels. Email addresses were sourced from national business directories, with an email being sent to a large number of both private and public

organisations based in New Zealand. Additionally, participants were recruited through various business contacts in New Zealand, Australia, Canada, Great Britain and the United States. An email was sent to twelve list servers related to organisational psychology or human resource management (including the two list servers used in the first study), with a request for the email to be forwarded on to fellow co-workers. Posters advertising the research were put up in retail and service industries, in an attempt to attract a wider pool of respondents to the website. To help control for socially desired responses, participant's answers were anonymous and they were encouraged to respond honestly being assured that there were no right or wrong answers. Anonymity was deemed necessary to ensure individual comfort in completing the questions. Such procedures can also help reduce people's evaluation apprehension and make them less likely to provide socially desired, lenient, or acquiescent responses.

### *Sample*

This combined approach yielded a sample of 374 employees. The occupational groups represented in the second study were diverse and ranged from forklift driver to chief executive officer. However, similar to the first study, the majority of the participants tended to fall into one of four categories which represented the respondent group: educators ( $N = 79$ , 21% of sample), managers or directors ( $N = 57$ , 15%), researchers or scientists ( $N = 50$ , 13%), or administrators ( $N = 35$ , 9%). The majority of participants were women ( $N = 243$ , 65%), who were married or in a recognised de facto relationship ( $N = 243$ , 65%), from New Zealand ( $N = 214$ , 57%), worked full-time ( $N = 307$ , 82%) and possessed at least a Bachelor's degree ( $N = 275$ , 74%). The average age of the participants was 37.8 years ( $SD = 11.1$ ). The data showed that, on average, participants had held their current job for 4.2 years ( $SD = 5.3$ ) and had worked in their current organisation for 6.4 years ( $SD = 7.1$ ).

### *Missing Data*

Eleven participants submitted responses which contained substantial missing data, or were noted as duplicates or blank entries. Not addressing missing data in empirical studies is likely to cause problems for statistical analyses (Schafer, 1997; Schafer &

Graham, 2002). Consequently, cases with more than 30 percent missing data were removed from the study because of the troublesome nature of estimating missing values when cases have significant amounts of incomplete data. After removing these cases, 363 useable data sets remained. Data from the 363 participants were entered into SPSS (SPSS 12.0.1 for Windows) and then examined for their completeness. Out of the 123 variables measured (as indicated in Appendix 3 and detailed further in Chapter Six), missing data from each variable ranged from zero to 4.96 percent, with the majority of variables containing less than half a percent missing data. Overall however, 65 cases contained missing data.

According to Little and Rubin (1987), if the missing values occur on more than one variable, the loss in sample size can be considerable if listwise (case) deletion is adopted as a solution for incomplete data. In the case of the present research, there would be an 18 percent loss of data if listwise deletion was implemented. Deleting cases, where only one or two items are missing per respondent is considered unsatisfactory by many methodologists (e.g. Schafer & Olsen, 1998), as it discards an unacceptably high proportion of cases. Mean substitution, an alternative method to analyse incomplete data, attempts to substitute the missing values using the mean for that variable, or by substituting using regression predictions. Both methods of substitution, while preserving the observed sample mean, affect the distribution of variables and relationships among them, yielding highly biased estimates of variance (Graham, Cumsille & Elek-Fisk, 2003).

Multiple imputation, a missing values replacement procedure developed by Rubin (1987), carries out the averaging of the missing data via simulation, and has been offered as a more robust solution than case deletion or mean substitution. Multiple imputation is a technique in which the missing values are replaced by plausible values drawn from their predictive distribution (Schafer & Olsen, 1998). In other words, the missing values are estimated based on the pattern of data a respondent has provided and from values from similarly responding participants on other questions. After performing multiple imputation, a complete data set is provided which can then be used for further data analysis. NORM, a freely available statistical software programme used to perform such calculations, is often used to estimate missing values with multivariate normal data (Schafer & Graham, 2002). The means, standard

deviations and ranges for each variable (before and after multiple imputation calculations) are presented in Appendix 4. Overall, and as expected, the data did not significantly change after imputation had been conducted.

#### *Data Analytic Method*

According to psychometric literature (e.g. Anastasi & Urbina, 1998; Clark & Watson, 1995; Haynes, Richard, & Kubany, 1995) sufficient validity evidence of a new scale is only obtained after a series of validation studies have been conducted. Therefore, a single study using exploratory factor analysis techniques is not appropriate for determining the construct validity of the scale or testing the latent structure of a model (Floyd & Widaman, 1995). Confirmatory factor analysis (CFA) is therefore appropriate to test the validity of model-data fit for a measurement model.

A CFA was conducted to determine the adequacy of fit of the measurement model using structural equation modelling (SEM) with the AMOS programme (Arbuckle, 2003). In brief, this programme produces an estimated covariance matrix, which is compared with the observed sample covariance matrix to determine whether the hypothesised model fits the data. This process also allows for variant models to be evaluated, and in the case of the present study to determine whether the one-factor or two-factor measurement model best fits the data.

#### *Fit Indices for CFA*

According to the recommendations of Hu and Bentler (1999) and Schumacker and Lomax (1996) the two alternative CFA models were evaluated against a number of fit criteria or indices. The following model fit statistics (and their criteria for sufficient fit) were employed to allow for comparison of the models:

- **Goodness of fit index** (GFI; Hu & Bentler, 1999). The GFI measures the association between the model and data and indicates the error in reproducing the variance-covariance matrix. GFI should be equal to or greater than .90 to accept the fit of the model.

- **Adjusted goodness of fit index** (AGFI; Hu & Bentler, 1999). Both the GFI and AGFI are used to estimate strengths of association in the models. As such, the AGFI adjusts the GFI by taking into account the degrees of freedom (*df*) within a model (as GFI can be inflated by high *df*). AGFI should also be at least .90 to accept the fit of the model.
- **Comparative fit index** (CFI; Bentler, 1990). CFI and RMSEA (below) each provide estimates of Type I and Type II error, respectively. CFI is a measure of Type I error in that it specifies the amount of difference between the examined model and the independence model<sup>4</sup>. According to Hu and Bentler (1999), CFI should be equal to or greater than .95 to accept the model, indicating that 95% of the covariation in the data can be reproduced by the given model.
- **Root mean square error of approximation** (RMSEA; Browne & Cudeck, 1989). RMSEA is complimentary to CFI as it is a measure of Type II error, and thus determines the difference between the examined model and the saturated model<sup>5</sup>. Hu and Bentler (1999) indicate that there is good model fit if RMSEA less than or equal to .06. By convention however, there is adequate fit if RMSEA is less than or equal to .08.
- **Bayesian information criterion** (BIC; Raftery, 1993). BIC is a measure which is akin to GFI but is not scaled from 0 to 1, thus allowing greater diversity in the possible scores. The BIC measure of fit is only a relative indicator when comparing competing models, with the lower value representing better fit.
- **Chi-Square** ( $\chi^2$ ) values are provided in the table for model fit, but are not interpreted given their hypersensitivity to sample size (Ullman, 2001). In essence, a significant chi-square indicates lack of satisfactory model fit. The finding of significance means the hypothesised model's covariance structure is significantly different from the observed covariance matrix. However, the larger the sample size, the more likely the rejection of the model and the more likely a Type II error.

---

<sup>4</sup> The independence model is a standard comparison model which assumes none of the components in the model are related.

<sup>5</sup> The saturated model is another standard comparison model which assumes each of the components in the model are related to all other components in the model.

As such, the chi-square test is rarely statistically significant with large samples and complex models, even when all of the other fit indices indicate strong fit (Bollen & Long, 1993).

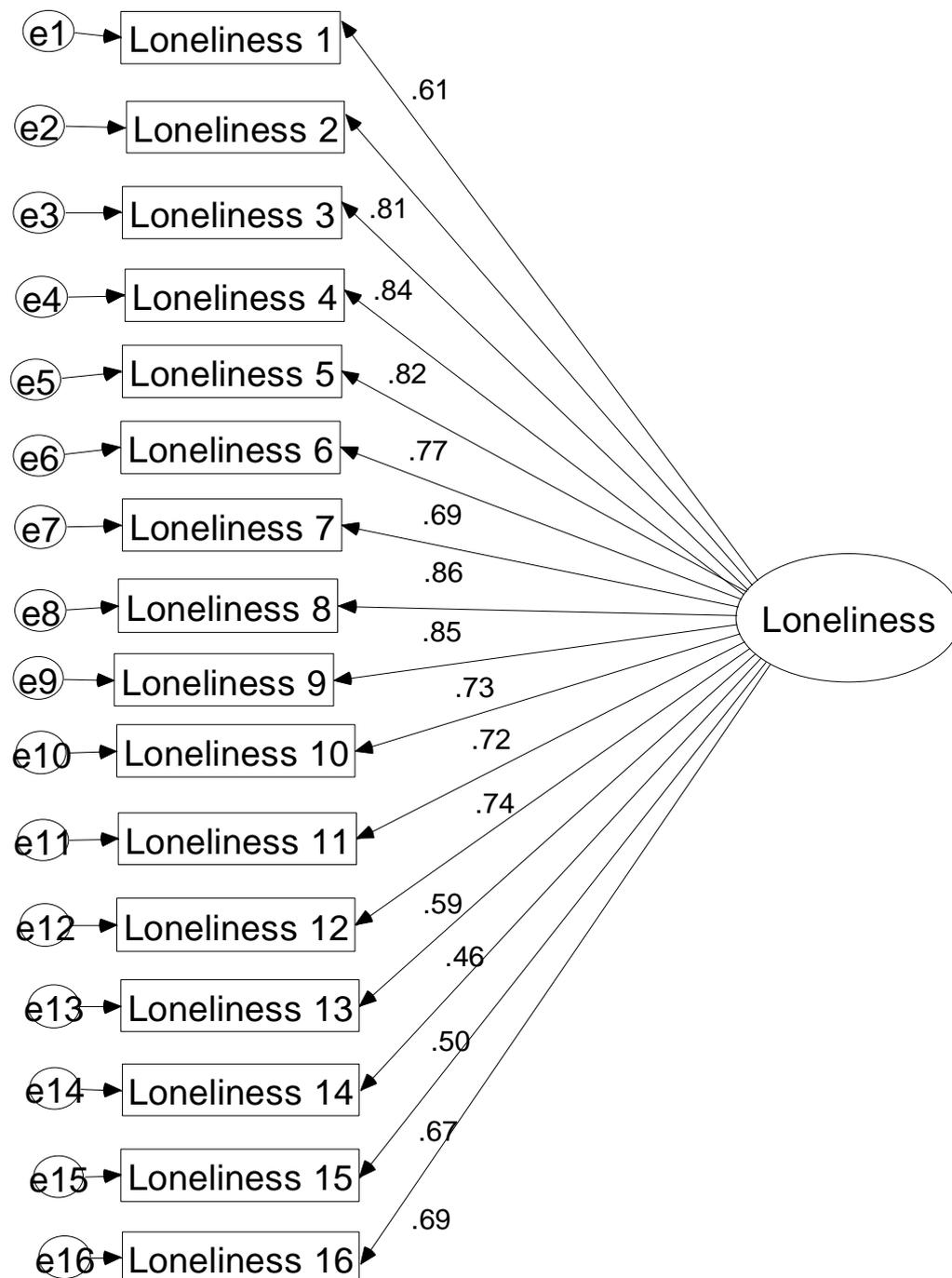
Measurement models are typically evaluated in two or more variant models and require a comparison to determine which model best fits the data. Model comparison can be conducted using the aforementioned fit measures, implementing certain criteria to determine a significant difference. These fit measures include the chi-square difference test ( $\chi^2_{\text{diff}}$  test; Long, 1983). Specifically, chi-square difference is the standard test statistic for comparing a modified model with the original one (Kline, 1994). A statistically significant chi-square difference test ( $p < .05$ ) indicates an improvement in model fit, favouring the model with the lower chi-square (Long, 1983). The RMSEA is also used for model comparison (criterion of non-overlapping confidence intervals), along with the BIC test (criterion of a 10 points difference favouring the lower BIC, Raftery, 1995).

These criteria are commonly used in the SEM literature and denote acceptance of model fit, given the current understanding of criterion indices. However, Bollen (1989) argues that these cut-offs are in fact arbitrary. A more relevant criterion, according to Bollen, may be to compare the fit of the hypothesised model to the fit of previously established models of the same phenomenon, and use the fit indices as relative indicators of improved (or otherwise) fit. In the case of the present study however, previous research has not established a work-related loneliness model. Therefore it is appropriate, and indeed necessary, to defer to the current SEM literature and guidelines to gauge sufficient fit of the hypothesised models.

### *Confirmatory Factor Analysis Results*

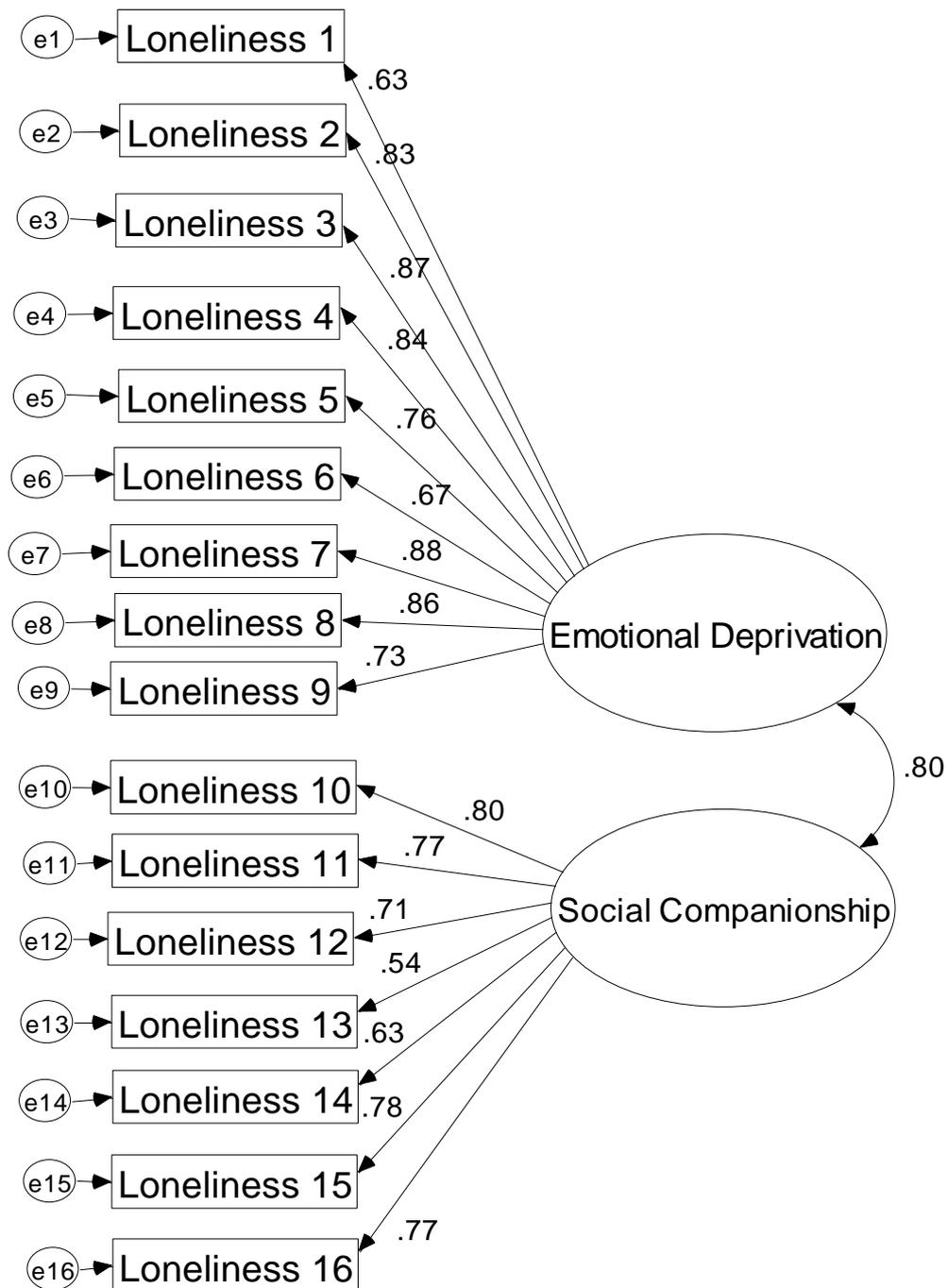
The results from the exploratory factor analysis indicated that two factors (identified as emotional deprivation and social companionship) best comprised the factor structure of the loneliness at work scale. Given the debate over the validity of multidimensional and unidimensional measures of loneliness outlined earlier in this chapter, a single-factor model was submitted for analysis as a plausible competing model. The first step in examining these measurement models was to conduct a CFA

on a single-factor and two-factor version of the scale. Figure 4.1 provides a graphic representation of the single-factor model (the 16 items and their respective error terms tapping into one latent variable). Table 4.1 specifies the descriptor for each scale item.



**Figure 4.1: Single-Factor Structure of the Loneliness at Work Scale**

Figure 4.2 provides a graphic representation of the two-factor model (items one through nine and their respective error terms tapping one latent variable and items 10 through 16 and their respective error terms tapping another latent variable). The path coefficients for each item are also shown as generated in the AMOS programme.



**Figure 4.2: Two-Factor Structure of the Loneliness at Work Scale**

Fit statistics for the single-factor and two-factor measurement models are indicated in Table 4.2 below.

**Table 4.2**

*Fit Statistics for the Single-Factor and Two-Factor Loneliness at Work Scale Measurement Models*

Model	Goodness of Fit			Comparative Fit		
	GFI	AGFI	CFI	RMSEA	RMSEA 90% CI	BIC
Single-factor LAWS ( $\chi^2 = 683.9$ ; $df = 104$ )	.75	.67	.85	.12	.12 - .13	872.51
Two-factor LAWS ( $\chi^2 = 383.5$ ; $df = 103$ )	.87	.83	.93	.09	.08 - .10	582.99

*Note.* GFI = goodness of fit; AGFI = adjusted goodness of fit; CFI = comparative fit index; RMSEA = root mean standard error of approximation; CI = confidence interval; BIC = Bayesian information criterion; LAWS = Loneliness at Work Scale.

Results of the initial measurement models demonstrate that the two-factor model provided better fit. Change in chi-square ( $\Delta\chi^2 = 300.4$  ( $\Delta df = 1$ )) was significant at the  $p < .001$  level, favouring the lower value from the two-factor model. RMSEA confidence interval ranges were significantly different. As indicated in the previous section, the model with the smallest BIC suggests better fit. According to Raftery (1995) a BIC difference greater than 10 is considered ‘very strong’ evidence in favour of the model with the smaller BIC. The BIC difference was 289.52, appreciably larger than the 10 point criterion. In this respect, there is evidence to suggest the data fits a two-factor structure over a single-factor structure. The two-factors within the model were highly correlated ( $r = .80$ , disattenuated path coefficient corrected for measurement error). This indicates that the two factors share 64 percent of common variance between them. The alpha coefficients were .94 for the first factor and .88 for the second factor.

Nevertheless, the two-factor model was slightly deficient in terms of the model-fit criteria outlined in the previous section. A model refinement process was conducted for the two-factor model. However, after the removal of several items and the addition

of further latent variables without obtaining better or sufficient fit, it was decided that the theoretical modifications to the scale (which would perhaps be necessary to obtain sufficient statistical fit), were not justified given the reasonable fit of the original two-factor model against standard criteria for fit (Hu & Bentler, 1995). In fact, CFI was only .02 from meeting the accepted criteria, and the range of .08 to .10 is not necessarily considered a poor fit according to criteria from Browne and Cudeck (1993). Such considerations of the theoretical implications during the modelling process are a necessary aspect to model building, refinement, and evaluation (Schumacker & Lomax, 1996). Overall, the results suggest a two-factor structure best fits the data. This model will therefore provide more stability for the overall structural model to be tested in Chapter Six. If a single-factor version of the loneliness measure were applied in the structural model, its poor performance as a unidimensional measure would suggest that the overall structural model would fail to provide sufficient fit.

The two-factor model also supports the theoretical distinction between emotional isolation and social isolation suggested by Weiss (1973) and the empirical findings suggesting that loneliness is a multidimensional construct. Interestingly, but not surprisingly, the two factors in the scale were highly correlated. However, given the conceptual nature of the two factors within the scale, it was not expected that the two factors would be mutually exclusive of one another or completely exhaustive of the concept of loneliness at work. If social and emotional aspects of loneliness stem from a similar interpersonal deficit or psychological foundation, the two factors will to a larger degree correlate with one another.

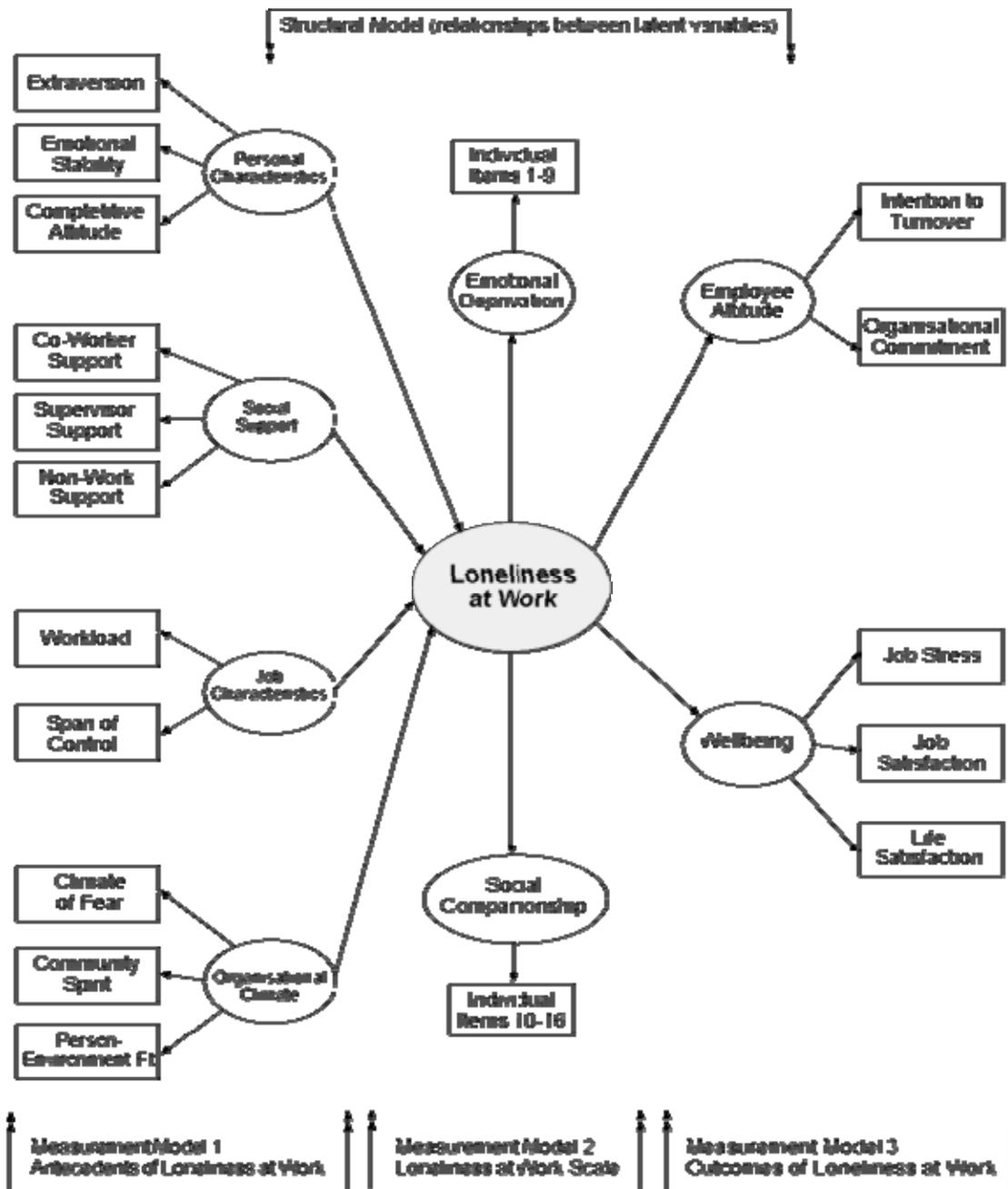
This part of the study suggests that social and emotional loneliness are empirically distinguishable constructs, related nonetheless to a common psychological foundation. As such, individuals suffering from emotional deprivation may share many of the same experiences as those suffering from a lack of social companionship. Realistically, there are situations where differentiating between the emotional and social aspects of work adds to the understanding of how loneliness develops from within the workplace. In this respect, the workplace environment may influence the type of loneliness experienced, which will now be examined in Chapters Five and Six.

## CHAPTER FIVE

### **The Loneliness at Work Model: Conceptual and Theoretical Development**

When thinking about the management of most organisations, the nature of the job and the characteristics of the organisation tend to have an impact on the acceptability and encouragement of workplace relationships (Sias & Cahill, 1998). Therefore, it follows that an unfavourable working environment coupled with certain personality characteristics of the employee, could result in poor quality interpersonal relationships, which may in turn have an adverse impact on the lives of the employees and the health of the organisation.

The diagram illustrated in Figure 5.1 (see over) provides the architecture for portraying the content of the loneliness at work model. The overall aim of the model was to generate a depiction of work-related loneliness which was both substantively meaningful and statistically well fitting. Overall, the model states in conceptual terms the organisational conditions and personal characteristics which may potentially influence the development of loneliness at work, and consequently effect the individual's and the organisation's overall wellbeing. The model is based on the conceptual definition of loneliness at work, that is, loneliness at work manifests itself as the distress caused by the perceived lack of good quality interpersonal relationships between employees in a work setting. The model is also based on the notion that feelings of loneliness can be mutually influenced by environmental conditions and personal factors, as discussed in Chapter Three. Given there has been an overemphasis in past research of personal characteristics as the primary determinant of loneliness (reviewed in Chapter Two), the model was developed to explore the relative influence of personality traits and organisational characteristics on loneliness and the consequent affect on employee attitude and individual and organisational wellbeing.



**Figure 5.1: The Loneliness at Work Model**

This chapter is organised according to the loneliness at work model, which will be assessed using structural equation modelling techniques in Chapter Six. The chapter will build on concepts and literature introduced in Chapter Three. Relevant literature on personality, social support, organisational climate, occupational stress, employee attitudes will be canvassed and the hypothesised relationships within the model will be proposed. The review will assist in creating the theoretical underpinnings of the

loneliness at work model. In reality, to give full justice to each of the components within the model would require a thesis in itself. Given the scope of the research and the impracticalities of a lengthy thesis, each variable will only briefly be reviewed. Prior to this review however, it is necessary to discuss the underlying philosophy and assumptions regarding the model development.

### ***Core Assumptions Underlying the Loneliness at Work Model***

The development of a theoretical model invariably involves deciphering what aspects of reality to include and what to leave out. In truth, the various antecedents and outcomes of loneliness at work are perhaps infinite and can never be wholly represented in psychological research. The model generation process therefore requires a learned judgement about what constructs are important and relevant to include in the model, and what are less representative of the reality of work-related loneliness. In essence, the loneliness at work model depicted in Figure 5.1 hypothesises the interrelationships between how a person views themselves (personal characteristics) in conjunction with the individual's perception of organisational or situational factors (social support, job characteristics, organisational climate), and relates these variables to the individual's degree of loneliness, which is subsequently related to withdrawal attitudes and perceptions of wellbeing.

Intangible abstract concepts, such as those represented in the loneliness at work model, tend to elude direct measurement. Thus, an attempt was made to explain and understand the phenomenon of work-related loneliness based on concepts which are not directly observable (Bollen, 2002). In essence, the purpose of developing the model was to describe the relationships among a class of latent variables which theoretically should share something in common. As a foundation for the remainder of this chapter, latent variables are considered hypothetical constructs that cannot be directly measured, whereas observed or manifest variables are combined estimates of the latent construct. In essence, we can only indirectly observe the latent variable through their indicators (MacCallum & Austin, 2000).

The loneliness at work model was based on the conceptual groupings of several variables of interest, which were logically clustered into latent variables. These latent

variables, or logical clusters, along with their manifest counterparts were translated into a graphical representation, indicating the hypothesised antecedents and outcomes of work-related loneliness. In terms of model development, the loneliness at work construct was initially thought to be a hierarchical latent factor, indicating that it represents a shared meaning but comprises two further latent variables, namely emotional deprivation and social companionship, as denoted in Chapter Four. From a theoretical standpoint, and given the complexity of the experience, it is more realistic to model loneliness as a multi-dimensional construct which has a shared and underlying commonality.

In general, latent variables cannot capture the complete essence of the construct they intend to measure, and indeed, no model can contain all the possible indicators of the latent variables. However, with theoretical understanding and the use of SEM techniques, we can reasonably estimate how well our hypothesised ‘clusters’ relate to one another. For example, if one were to create a latent factor with manifest variables that theoretically do not relate, such as cholesterol level, Inland Revenue number, hair length, and scores on a general mental ability test, theoretical knowledge and SEM procedures would indicate that the variables do not fit well together. In other words, the variables do not relate well enough with each another to justify creating a unified latent construct. However, with concepts that relate to some degree, the covariance matrix can show credible fit for concepts that have even moderate correlations (Byrne, 2001). In terms of this thesis, the personal characteristics latent variable, for instance, is not a complete measure of all aspects of personality. However, because it would be impracticable and theoretically impossible to measure all aspects of an individual’s constitution, various constructs are clustered together to form a latent variable which in principle, shares common ground with loneliness at work. Because structural equation modelling techniques take the measurement and evaluation of the latent variables into consideration, such conceptual deficiencies are not necessarily a limiting aspect of the model.

The following sections are devoted to discussing the conceptual themes and hypothesised relationships underlying the components within the theoretical model.

### *Personal Characteristics*

Research on loneliness has typically focussed on individual differences in personality characteristics and poor social integration. As reviewed in Chapter Two, loneliness is associated with reduced social integration (such as shyness and introversion), emotional states (such as depression and anxiety), poor self-regard (such as low self-esteem), and negativistic attitudes (such as hostility and pessimism). It is therefore not unreasonable to argue that certain personality characteristics may predispose certain individuals to experience loneliness (Sermat, 1980). However, the majority of loneliness studies have been conducted on respondent groups who would be expected to have a greater disposition towards certain negative personal and interpersonal characteristics. Clearly, prison inmates and homesick students, for example, would differ on many dimensions, including their disposition towards experiencing chronic loneliness. While this thesis argues that environmental factors can potentially influence the development of loneliness, the volume of research indicating a strong and consistent link between personality factors and loneliness cannot be overlooked in the loneliness at work model. Moreover, it would be inaccurate to assume that loneliness at work is solely affected by situational variables alone. Using the literature and intuition as a guide, three variables were hypothesised to relate to loneliness at work, namely extraversion, neuroticism and competitive attitude.

#### *Extraversion and Emotional Stability*

Neuroticism, or emotional instability, reflects the tendency to be anxious, defensive and 'thin-skinned' (McCrae & Costa, 1987). Additionally, emotional instability is related to poor self-image characterised by low self-esteem and low self-efficacy (Judge, Bono, Ilies & Gerhardt, 2002). Extraversion, of which the converse is introversion, is characterised by sociability, gregariousness, and talkativeness (McCrae & Costa, 1987). Extraverted individuals also tend to be more socially interactive and energetic (Cheng & Furnham, 2002). As reviewed in Chapter Two, past research has demonstrated links between loneliness, extraversion and emotional stability. For example, a study by Saklofske and Yackulic (1989) found that loneliness was negatively correlated with extraversion and positively correlated with neuroticism. That is, sociable, energetic, easy-going extraverts tend to manifest the

very behaviours that reduce the likelihood of experiencing loneliness. The researchers concluded that people with high neuroticism seem to have both personal and interpersonal difficulties, such as high anxiety, moodiness, shyness and low self-confidence, which increase the probability of loneliness and further increase psychological impairment.

Loneliness not only mirrors dissatisfaction with social relationships but also reflects negative emotions. Therefore, one would expect neuroticism and a lack of extraversion to be associated with loneliness at work. Thus, it is reasonable to suggest that individuals who are anxious, have low self-esteem, and are less inclined to socialise, are likely to feel dissatisfied with the quality of their relationships in the workplace. Reports of loneliness often relate to feelings of being less assured of self-worth and less socially involved, which are also associated with reports of higher neuroticism (Vaux, 1988). In terms of extraversion, preference for social engagement may, if achieved, provide a sense of attachment, safety and security which tends to inhibit the possibility of feeling lonely (Russell, Cutrona, Rose & Yurko, 1984).

Personal characteristics, such as neuroticism and introversion, may influence feelings of work-related loneliness in many ways, including impeding the development and maintenance of relationships, influencing the individual's appraisal of their relationships, and by affecting the person's response to interpersonal changes in the workplace. In other words, loneliness can be viewed as the consequence of various personal factors, in this case high neuroticism and low extraversion, which inhibit the development of quality relationships and limit an individual's social interaction (Vaux, 1988). Consistent with this literature, it is hypothesised that low levels of emotional stability and extraversion are likely to influence the experience of loneliness at work.

### *Competitive Attitude*

The notion that a competitively oriented individual is more likely to feel lonely at work (than someone who is uncompetitive) is reasonably novel in the research literature. However, such notions adhere to the lay belief that those who strive for and reach the 'top' are more likely to be 'lonely'. Possessing a competitive attitude

usually indicates that the individual has an orientation towards winning, and therefore aims to outperform others. In order to win, surpass others, and achieve superiority in the workplace, one would need to be reasonably competitively-minded, depending of course on the work context and environment. As such, the path to success in the workplace is often demonstrated through an individual outperforming a fellow (or rival) co-worker. Such behaviour could result in one not trusting, confiding in, or socialising with their co-workers in order to gain a competitive advantage, which could possibly create a fairly isolated existence for the individual.

The association between a competitive attitude and interpersonal relationships has received some support in the literature. Doctoral research by Hibbard (2000) indicates that superiority competitiveness, that is, the desire to win, is associated with lowered self-esteem and higher depressive symptomology. There was however no relationship between lowered self-esteem and the desire to simply perform well. Superiority competitiveness was associated with poorer quality social traits and negative socio-emotional outcomes for females. The research also found that increased competitiveness was associated with greater discord in relationships for both males and females, and with less closeness in relationships for females. Earlier research by Wright (1992) also demonstrated that a competitive attitude towards life can have a destructive effect on interpersonal relationships.

Contrary to such findings however, social psychological research by Riskind and Wilson (1982) indicates that highly competitive individuals are rated as more attractive than uncompetitive individuals. The highly competitive individuals were also rated more highly on measures of respect and perceived career success. In this respect, those individuals who have a preference for competitiveness may in fact attract social interaction which may alleviate feelings of loneliness. Nonetheless, and as indicated previously, social attractiveness and socialising are no antidotes for loneliness, if the relationships which are formed are based on external or superficial attributes, such as the individual's ability to continually perform and achieve. Being regarded as 'superior' due to achievement or personal style may in fact influence an individual's relationship quality, and consequently the degree of loneliness experienced. Moreover, to outperform others usually requires markedly improving one's performance, sacrificing friendships and relationships in the process, which

perhaps could result in feelings of loneliness. While it is recognised that intrinsic rewards can be gained from exceptional work performance (Franken & Brown, 1995) over and above relationship development, continually striving to outperform others may, over time, result in less trusting, secure or meaningful relationships. Therefore, the argument in this thesis is that a competitive attitude at work may, in conjunction with emotional instability and introversion, be associated with feeling deprived of meaningful relationships.

### *Sources of Social Support*

Social support refers to the help, guidance, comfort and information one receives from one's social network including family, friends, work colleagues, and neighbours (Cobb, 1976). To reiterate the position argued in Chapter Two of this thesis, it is the perception of social support that is the most important factor in maintaining psychological health, rather than actual support. In other words, those who perceive a sense of support enjoy better psychological wellbeing than those who do not (Saranson, Saranson and Pierce, 1990). Arguably, a lack of perceived social support is perhaps the most obvious source of loneliness. Rook's (1987) study on the relationship between instrumental and emotional support with loneliness, indicated that social companionship is a central concept for understanding loneliness.

The awareness of social support in the workplace, and the impact it can have on employee health and wellbeing, is becoming an increasingly important issue in the workplace (Digman & West, 1988). Genuine social support from management and from an employee's colleagues can engender feelings of trust and belongingness within the organisation. Conversely, poor social support at work can potentially become a significant source of concern for employees and may consequently generate feelings of isolation and loneliness. Social interaction at work in terms of the relationships between co-workers as well as between employees and their supervisors is becoming crucial to organisation success (Pfeifer, & Veiga, 1999). In terms of employee wellbeing, higher overall social support in a work setting is related to lower levels of depression and anxiety (Greenglass, 1993), and absenteeism (Unden, 1996). Moreover, Landy (1992) notes that there is a substantial research base indicating that the quality of supervision can have a significant affect on employee wellbeing.

Because of the importance of social support to wellbeing, it would be reasonable to expect that a lack of perceived social support would potentially play a role in the development of loneliness at work. For the purposes of this thesis, social support was defined by three related sources, namely supervisor support, co-worker support, and non-work support.

### *Supervisor Support*

Supervisors have the potential to be very influential over employee wellbeing. For example, supervisors who prevent work overload through coordination and planning and allow for schedule flexibility, can reduce the level of psychological strain in employees (Gilbreath, 2001). Research has also shown that supervisor support is particularly effective in reducing work-related burnout (Constable & Russell, 1986) and strain (Fenlason & Beehr, 1994). Earlier research by Stout (1984) demonstrated that employees who were supervised by individuals who scored highly on measures of consideration and initiation of structure reported lower levels of stress than employees who were supervised by individuals low on both. McLean (1979) has also suggested that non-supportive behaviour from a supervisor can contribute to feelings of job pressure. According to a review on healthy workplaces by Gilbreath (2004) one of the best ways supervisors can build a psychologically healthy work environment is by being supportive and accommodating. Past research has demonstrated that a supportive style of supervision enhances employee wellbeing and helps protect employees from tension, depression, emotional exhaustion and health complaints (as reviewed by Gilbreath, 2004). Unfortunately however, research suggests that encouragement and support are less often perceived to be available from supervisors than from peers (Marcelissen, Winnubst, Buunk, & de Wolfe, 1988).

In many respects, the supervisor contributes in the creation of the work atmosphere, including the tolerance of inconsiderate or bullying behaviours. O'Driscoll and Beehr (1994) argue that because the supervisor is often the most salient person in an employee's work context, they are more likely to represent the climate of the organisation, which can have a direct effect on subordinate behaviour. It is therefore not surprising that employees find coping with supervisor behaviour one of the most stressful aspects of their job (Hogan, Curphy & Hogan, 1994). And it is also not

surprising that Martin and Schinke (1998) found that harsh criticism by supervisors was positively associated with employee burnout. Overall, it would appear that Sud and Malik's (1999) conclusion that a lack of supervisor support can provoke anxiety in employees is correct.

Supervisors are in a position to provide employees with a variety of social support, including supplying necessary information to perform on the job, assigning extrinsic benefits, and providing appreciation and recognition (Lu, 1999). The flipside of course is that supervisors can also withhold information, unreasonably restrict benefits, and fail to provide necessary feedback. In fact, a lack of supervisor support could exacerbate problems in the workplace, such as heightening employee isolation by creating tension between co-workers. Moreover, a supervisor who fails to demonstrate empathy may also emotionally cripple an employee if, for example, they were to humiliate the employee publicly or continually indicate their weaknesses. Failing to support employees could potentially influence an employee's feeling of isolation, through marginalising them from the information necessary to perform the job well, or by inhibiting the potential alliance of social networks.

In many ways, supervisors have the inadvertent ability to foster a 'cold' emotional climate, reacting punitively to minor mistakes. A supervisor's unsupportive behaviour could however, have a cohesive or unifying effect on co-workers, in that, if the majority of employees loathe the supervisor, this common ground may in fact work to bring the co-workers closer together. While this situation has not been ruled out, it is predicted that a lack of social support, from various sources, works simultaneously to influence poor quality relationships at work.

### *Co-Worker Support*

House (1981) has suggested that fellow co-workers are the most important source of social support for relieving the effects of occupational stress. Furthermore, working in a demanding, constrained job without emotional support from fellow workers is likely to create or aggravate anxiety (Karasek & Theorell, 1990). Various research studies have demonstrated a direct relationship between co-worker support and work-related stress and anxiety. For instance Sud & Malik (1999) examined job stress, social

support, and trait anxiety in school teachers. Their results indicate that a lack of co-worker support was the only significant predictor of job-related stress. Furthermore, research by Greenglass, Burke & Konarski (1997), in a sample of 833 teachers, showed that greater co-worker support diminished feelings of burnout, in that the perception of co-worker support decreased levels of depersonalization and increased feelings of accomplishment. Such evidence indicates a strong and consistent link between a lack of perceived co-worker support and employee wellbeing.

Considering the association between a lack of social support and loneliness in general, and the demonstrated link between co-worker support and work-related stress, it seems reasonable to predict that insufficient co-worker support could influence an employee's feelings of loneliness at work. As such, if employees do not have a suitable group of equals with whom to form fulfilling social relationships, there is potential for them to be isolated, marginalised, and lonely within the workplace. Given that employees identify more closely with proximal relationships, that is, with their fellow co-workers, than with distal relationships, such as their relationship to the organisation more broadly (Larkin & Larkin, 1996), it would be expected that co-worker support would have the greatest impact on loneliness at work amongst the three sources of social support.

### *Non-Work Support*

The availability of support outside the workplace can act as a buffer to emotional exhaustion resulting from work overload (Dolan & Renaud, 1992). As such, individuals who can share their work-related problems or relationship deficiencies with friends or family outside the work environment may gain a sense of perspective and support, and therefore feel less burdened by the issue. When they re-enter the work environment, the problem may seem less overwhelming and more readily coped with because of the affirmation they have received from non-work sources. In this respect, there seems to be a qualitative difference in the support available from various social sources. It would appear that qualities such as acceptance, liking, and reliance are more often found in relationships with family and friends, than in work relationships (Laireiter & Baumann, 1992).

In many ways however, work-related problems may be specific to the work environment and the sources of support within that environment. Support from non-work sources may therefore fail to alleviate the underlying concern. This could explain why Wolden and Good (1995) found that support from family or friends was not significant in influencing work-related tension for a group of retail workers. While this position and research finding is acknowledged, this thesis argues that non-work support can, in some ways, help prevent the damaging effects of poor quality social relationships at work.

### *Job Characteristics*

It has long been suggested in the popular media that the structure of the workplace and the design of one's job can influence the degree of alienation and loneliness one experiences. In this sense, loneliness is often associated with working in geographically solitary conditions, working in isolated social conditions (such as teleworking), and being necessarily estranged from colleagues due to the prohibition of discussing confidential information. Perhaps the most familiar perception of work-related loneliness is the 'loneliness of command' or the 'it's lonely at the top' maxim. Moreover, descriptions of loneliness are often used to depict the experiences of battle weary senior managers or executives who feel isolated because of their status and their achievements. As such, it is a common belief that the obsession with success at work and the prestige associated with a workaholic lifestyle can have debilitating consequences on interpersonal relationships, both at work and in one's personal life (Reinking & Bell, 1991). Thus, this thesis seeks to determine the relative influence of workload and span of control on the development of loneliness at work.

### *Span of Control*

It is reasonably difficult to define organisation seniority across a wide range of organisations and occupational groups. When one thinks about the status of senior employees, the demographic criteria for their position may not necessarily be consistent across all organisations. One may say, for example, that a senior ranking position requires formal tertiary qualifications, reasonable tenure with the organisation, mature age and accompanying managerial experience. However, there

are numerous examples where young ‘talents’ with limited education or managerial experience traverse the corporate ladder to commandeer what are thought of as ‘senior’ ranked positions. Such examples can invalidate the defining features of the prototypical senior manager.

Clearly, performance characteristics are defining features of a manager, such as maintaining strong financial performance and coping with the bombardment of information. It is thought however that the most central, consistent and global characteristic of a senior ranked position, in either the private or public sector is the number of employees the position is required to manage, or be responsible for. In other words, the degree of overall responsibility the manager has for employees usually dictates how senior an individual manager is, rather than deciphering it from job title as used in previous research (Reinking & Bell, 1991). As such, a senior level manager would have considerably more responsibility for subordinates (in terms of responsibility for their performance, retention, and workload) than an individual contributor. The idea that a span of control, or the number of subordinates who directly report to a manager or supervisor, can influence the feelings of loneliness stems from the idea that a management role often comes with very little lateral support (Lindorff, 2001). Lack of social support and consequent isolation may, to some extent, be due to the non-reciprocity of superior-subordinate workplace relationships, in that support is perceived to be provided by managers but is seldom available to them (Lindorff, 2001). Specifically, an impersonal relationship may necessarily exist between managers and subordinates, whereby managers may not wish to disclose information to subordinates which suggests they are less than competent. Furthermore, managers are often required to influence, control and manipulate subordinates, which may require a certain degree of social distance resulting in a loss of solidarity with colleagues (McDonald, 1985).

The pyramid shape of most organisations suggests that the ‘top’ is not typically a crowded place. Senior organisational members may therefore have very little lateral support and have limited opportunity to develop good quality interpersonal relationships. Therefore, it is thought that the more employees one is responsible for, the greater the professional distance they are required to maintain, and the greater likelihood of feeling emotionally disconnected and lonely at work.

### *Workload*

Workload, or in the case of this thesis, quantitative work overload, usually refers to situations in which an employee has too much to do in the time available. Longitudinal and experimental findings indicate that increased work demands can lead to reduced health (Karasek & Theorell, 1990). For example, in an experimental study manipulating work demands, Parkes (1995) reported that higher workload was associated with reduced cognitive performance and increased anxiety. Moreover, Jex (1998) indicates that heavy workload is associated with increased smoking, hypertension, feelings of anger, tension and personal failure, job dissatisfaction and lower levels of job performance. Research by Karasek, Baker, Marxer, Ahlbom & Theorell (1981) suggests that job satisfaction is most closely linked with workload, and that strain is more likely to occur when control over one's job is not proportionate with job demands, and social support is low. On the other hand, employees who work their preferred schedule have been found to have increased job satisfaction, work commitment and positive work-related attitudes (Morrow, McElroy & Elliot, 1994).

Typically, the more senior one is within the organisation, the more hours they are likely to work or are expected to work (Gumbert & Boyd, 1984). The combination of working long hours and feeling overextended due to workload can conceivably place a heavy demand on one's interpersonal relationships. It is thought that the more one is burdened by perceived quantitative work overload, the less time one has to build or maintain quality interpersonal relationships, both at work and in their personal lives. Therefore this thesis argues that quantitative work overload may, in part, influence the development of loneliness at work.

### *Organisational Climate*

The concept of organisational climate refers to the quality of the organisation's internal environment, especially as experienced by the employees, but as also relevant to members outside the organisation (Tagiuri, 1968). As such, it is the *interpretation* of the environment which underlies the definition of organisational climate and which affects employees' attitudes, motivation and behaviour, rather than objective factors within the organisation (Tagiuri, 1968).

In a very general sense, workers tend to be desirous of, and may in fact feel entitled to work in a trusting and cooperative environment. In this respect, the workplace has become a greater source of community identity, due perhaps to the decline of other social institutions such as churches and civic groups (Conger, 1994). Traditionally however, workers have been viewed as impersonal instruments to achieve material ends for the organisation (e.g. Taylor, 1947). In this scientific management approach, workplace behaviour is guided by rational conscious principles where workers are economic units for the advancement of the organisation. Whilst this is legitimately still the case for most organisations, in advocating such a regime (along with the principle of specialisation), the idea of a socially cohesive work environment is devalued and consequently many workers can become isolated and alienated from fellow co-workers (Bolman & Deal, 1997).

Fine (1986) has argued that the work environment and the culture of the organisation shapes and directs worker relationships. He goes on to claim that cultural traditions within the workplace connect workers to the organisation as a whole, producing a sense of belonging, and make personal ties within the company more likely. Given this, it is possible for the organisation's climate to encourage employees to actively listen, express appropriate thoughts and emotions, and acknowledge other's feelings whilst at work. On the other hand, workplace cultures which emphasise fear and self-interest may also prove problematic in promoting workplace friendships or collegiality (Fine, 1986). As such, organisations which emphasise certain types of attitudes or behaviours, such as mutual respect for co-workers, may conceivably influence the quality of interpersonal relationships in the work environment and the consequent effect on personal and organisational wellbeing. Specific qualities tend to be more prominent in some types of organisation, which for example, emphasise being supportive and collegial, as opposed to other organisations which emphasise more procedural and goal oriented behaviours.

Loneliness tends to encompass a myriad of negative emotions and is associated with psychological distress, it would therefore be expected that the experience of loneliness in the workplace would be associated with negative organisational characteristics. Specifically, it would be expected that loneliness at work would partly result from

organisational climates that foster an environment where employees are fearful of their institution, and where everyone pursues their own interests.

### *Climate of Fear*

The notion of fear is an integral part of the workplace and can be a valuable motivating tool, driving employees to learn new skills, and perform at higher levels. According to Ashkanasy and Nicholson (2003) fear in the workplace can be defined as generalised apprehension at work. Whilst fear can be utilised as a positive device, and cannot be eliminated from human emotion (Leon, 2002), under certain conditions fear and hostility can be an overriding negative force within an organisation. From a psychological perspective fear is considered a negative emotion, because when experienced the effect is often distressing and tends to have an adverse impact on the individual (Strongman, 1996). It is also however, a normal emotion and is an appropriate response to a known threat of danger. Fear has multiple symptoms, including fatigue, depression, restlessness, aggression, loss of appetite, and insomnia (Doctor & Kahn, 1989). In other words, fear has the potential to induce certain stress responses or behaviours, such as flight or fight, suppression, or helplessness.

There is indication in the literature that negative interpersonal behaviours at work can affect various organisational and attitudinal variables, namely higher turnover and job dissatisfaction (Cox, 1987). Cox's study estimated that 16 to 18 percent of registered nurses and 18 to 42 percent of directors of nursing resigned from their jobs because of verbal abuse. Ryan and Oestreich (1991) conducted interviews with 260 employees from various levels and occupations about factors inhibiting innovation, quality and productivity. They argued that fear of speaking up about work related issues was a major factor inhibiting performance in these areas, and that abuse or abrasiveness from supervisors was often at the root of this fear. Other literature (e.g. Spector & Fox, 2004) also links negative interpersonal behaviour (e.g. being yelled at, destructive criticism) with greater turnover intentions.

In reality, it is not surprising that an association exists between being treated poorly at work and the desire to leave that organisation. Given that a climate of constant fear can result in a feeling of helplessness or loss of control (Dozier, 1998) it would

therefore be expected that feelings of loneliness, often associated with feelings of helplessness, would be enhanced in an organisation that fosters a climate of fear. In effect, working in a fearful environment where abusive behaviour is unchecked, and rewards and punishment are neither distributed fairly nor consistently, can prevent employees from enjoying positive interpersonal relationships in the work environment. Similarly with insufficient supervisor support, a climate of fear within an organisation could have a unifying effect on co-workers, in that, if the majority of employees agree that the fear stems from management or a particular source, this common ground may, again, work to bring co-workers closer together. While this argument has been considered, it is predicted that a climate of fear and hostility, where individuals are criticised, fail to receive sufficient information, dread repercussions, and generally feel apprehensive about their work environment, would influence the discrepancy between desired and actual relationships in the workplace.

#### *Community Spirit at Work*

In recent years, the desire (and the expression of that desire) for employees to convey meaning and purpose in relation to their work and through their co-workers has emerged (Ashmos & Duchon, 2000). Because the workplace is increasingly seen as a source of social connection, the quest for community spirit at work has, anecdotally, become increasingly important. Community spirit at work is defined as an organisational environment in which employees are valued for being themselves, they enjoy a sense of personal growth, and experience a sense of working together (Ashmos & Duchon, 2000).

The concepts of belongingness and attachment and their relationship with loneliness, although reasonably novel in organisational research, have been well established in the literature discussing the need for attachment bonds and a sense of belonging in human development (Weiss, 1973). As such, feeling rejected by one's peers is often associated with negative qualities such as anxiety, depression, jealousy and loneliness (De Dreu, West, Fischer & MacCurtain, 2001). Moreover, an organisational environment where individuals are pursuing their own interests and lack social cohesion could also inhibit a community spirit at work. Competing for limited resources within the work environment could, according to Perlman and Peplau

(1984) create difficulties in maintaining meaningful relationships. Perlman and Peplau speculated that co-workers who are in direct competition for scarce resources may find it difficult to be supportive of one another. As such, individuals who are competitive in nature and work in an environment which does not foster a community spirit or social cohesion may find it difficult to develop good quality relationships. Therefore, it would be expected that a lack of social connectedness at work would be associated with increased levels of loneliness. In fact, it is possible that feelings of loneliness at work could be alleviated, if not prevented, in organisations which fostered community spirit.

### *Person-Environment Fit*

Person-environment fit is a theory based on the assumption that aspects of individual wellbeing are a function of the interaction between the person and their environment (Walsh, Craik & Price, 1992). The perception of congruence between an individual's personal constitution and the values or principles of their workplace is thought to promote health and contribute to feelings of morale, satisfaction, motivation, and self-confidence (Moos, 1988). This values aspect of person-environment fit is included in the organisational climate factor due to its underlying psychological and affective component, which generally relates to the impression or subjective evaluation of the climate of the workplace.

The relationship between subjective person-environment fit and various indicators of occupational strain has been well supported in the literature. The strongest associations with strain appear to be job dissatisfaction, anxiety, depressive symptoms, and somatic complaints (Vandenberg, Park, DeJoy, Wilson & Griffin-Blake, 2002). It seems reasonable that when the skills, attributes, and values of the employee fit with the conditions and expectations of the work environment, it tends to be conducive to a positive organisational climate. It would therefore be expected that a prerequisite to fulfilling good quality relationships in the workplace would be an acceptable congruence between the characteristics of the employee (in terms of values and personality) and the psychosocial work environment.

### *Employee Attitudes*

As reviewed in Chapter Two, loneliness is associated with a host of negative characteristics, such as shyness, depression, anxiety, low self-esteem, hostility and pessimism. Given these relationships, it is possible that loneliness can be both a cause *and* a consequence of social withdrawal cognitions and behaviours. In the case of this thesis, it is predicted that loneliness at work has a negative effect on employee attitudes, instigating low organisational commitment and a desire to withdraw from the organisation. Essentially, if an employee feels lonely or emotionally detached at work as a result of abrasive working conditions, it follows that they are likely to psychologically withdraw from that environment. In many ways, this mirrors the divorce process spouses may experience as a result of an emotionally disconnected marriage. Broadly speaking, dissatisfied employees tend to withdraw from their organisations, either through psychological disconnection or actual job departure (Hanisch, 1995). Employees who feel lonely and consequently dissatisfied at work, may exhibit behavioural or attitudinal indicators of their desire to remove themselves from their job or their organization.

### *Organisational Commitment*

Organisational commitment tends to be considered a global construct, reflecting general affective attachment to the organisation as a whole (Mowday, Steers & Porter, 1979). Such commitment represents attachment to the organisation including its goals and values. Organisational commitment is defined by Mowday, Steers and Porter (1979, p. 225) as the “state in which an individual identifies with a particular organisation and its goals and wishes to maintain membership in order to facilitate these goals”. Anecdotally, there is a link between poor interpersonal relationships in the workplace and the relative degree of commitment (affective and continuance) one is willing to invest in the organisation. Over time, the mismatch between desired and actual work-based relationships may cause an employee to seriously re-evaluate their attachment to the overall organisation.

Although there is very limited research on the quality of interpersonal relationships and organisational commitment, empirical research does indicate a link between

various types of commitment with social support in the workplace. Vashishtha & Mishra (1999) examined the relationship between social support and organizational commitment of 200 supervisors. In general, the results demonstrate a significant and positive relationship between organizational commitment and social support. More specifically, the study indicated an association between affective support, belonging support, and tangible support with organizational commitment. Tentatively therefore, the quality of workplace relationships may contribute to the perception of organisational commitment, particularly as both loneliness and organisational commitment appear to have an affective component as their underlying basis. Moreover, as indicated in Chapter Two chronic loneliness is associated with low social motivation. Similarly, high levels of organisational commitment are related to motivation to perform and exert high levels of energy on behalf of the organisation (Mowday, Steers & Porter, 1979). Consequently, it may be that if one was experiencing loneliness at work, and therefore perhaps suffering from low levels of energy or social motivation, this apathy may spill over to reduced organisational commitment.

#### *Intention to Turnover*

Employees who are dissatisfied with their jobs tend to balance the costs and benefits of withdrawing from, or alternatively remaining with the organisation (Hom & Griffeth, 1995). In the case of interpersonal relationships at work, by withdrawing from the organisation the employee may believe they can achieve better quality relationships in an alternative organisation. In other words, the employee perceives the gap between their actual relationships and what they desire in workplace relationships will be narrowed in a new job or organisation. In general, intention to turnover is a withdrawal attitude directed at the organisation, and can be instigated for a number of reasons including the desire for promotion, a career or lifestyle change, or relocation. Hanisch and Hulin (1991) have defined organisational withdrawal as “a general construct composed of a variety of acts, or surrogate intentions, that reflect both the negativity of the precipitating job attitudes and the target of these negative job attitudes” (p. 111). Although the experience of loneliness at work might be expected to be related to an employee’s intention to leave the organisation, other factors are clearly also important, such as the availability of suitable alternative

employment and economic conditions. With regards to this thesis however, the salient aspect is the employee's *desire* to leave the organisation, irrespective of economic factors.

Research, although limited in volume, tentatively indicates an association between interpersonal relationships at work and turnover intentions. Lee, Mitchell and Wise (1996) conducted focus group research on a sample of 44 nurses who had recently resigned from their jobs, in order to ascertain the reasons for their departure. Several organisational and personal factors precipitated their decisions to leave the organisation, however issues such as work–family balance, attachments to the community, and relationships with co-workers surfaced as reasons for withdrawing from the organisation. Moreover, Keashly, Trott & MacLean (1994) also indicate that the quality of interpersonal relationships at work, in terms of the presence of abusive behaviour, was related to job dissatisfaction and intention to leave. These research results suggest that relationship development and maintenance is a contributing factor in an individual's intention to withdrawal from the organisation.

### ***Wellbeing Outcomes***

Lonely individuals tend to have higher levels of stress in their lives than non-lonely individuals, and consequently suffer from poor health (Cacioppo, Hawkley & Bernston, 2003). Moreover, loneliness is often associated with perceptions of peer rejection and social exclusion (Leary, 2001), which in themselves can produce stress responses including lowered feelings of self worth. Individuals who feel lonely, overall, report increased feelings of dissimilarity from others, and diminished feelings of satisfaction with their social relationships (Jones, Rose & Russell, 1990). As indicated in Chapter Two, these associations suggest that feelings of loneliness tend to provide a negative lens through which the world is viewed. Lonely individuals appear to judge their relationships and their consequent wellbeing on negative foundations, which in turn can enhance negative cognitive appraisals and affective responses about future relationships and wellbeing.

Diminished individual wellbeing in the workplace is often depicted by reports of occupational stress and reduced job satisfaction (Vandenberg, Park, DeJoy, Wilson &

Griffin-Blake, 2002). Because loneliness in general is often associated with poor psychological and physical health, it reasonably follows that work-related loneliness would influence wellbeing both at work and in one's personal life. Essentially, if the individual perceives loneliness at work to be a distressing aspect of their work role, it will most likely affect their reported stress levels and perhaps hinder any satisfaction gained from their work or personal life.

### *Perceived Job Stress*

As indicated in Chapter Two, research has shown that loneliness is inversely correlated with social support (Riggio, Watring, & Throckmorton, 1993). Perceived social support, on the other hand, has been associated with lower perceived stress (Cohen & Wills, 1985). As such, there tends to be a link between loneliness and reported stress, perhaps mediated by perceived social support. Stress, in this thesis, refers to the individual's appraisal of the work-related situation and associated demands, rather than stressors, stressful conditions or stress-related illnesses. Previous research has established that loneliness is moderately predictive of stress symptoms and lowered immune system functioning (DeBerard & Kleinknecht, 1995). It therefore seems reasonable to argue that loneliness could be a significant stressor in the stress process. It follows that if an individual feels lonely, they are more likely to report distress and psychological symptoms relating to stress. Non-lonely people tend to cope with stressful events more effectively than lonely individuals. As such, non-lonely individuals report fewer emotional and physical complaints after experiencing a variety of stressful life events than lonely individuals do (Schill, Toves, & Ramanaiah, 1981). In other words, the less lonely one is the less detrimental are the effects of stress.

Interpersonal conflict and cohesion problems within the workplace have often been associated with occupational stress and managerial burnout (Dolan & Renaud, 1992). Previous research suggests that negative interpersonal relations and the absence of support from co-workers and supervisors can be a major stressor for many workers (Cooper, Dewe & O'Driscoll, 2001). As such, issues associated with social relationships in the workplace appear to play an important part in the stress process. Conceivably, lonely employees may be less resilient to the stressors inherent in their

roles or their work environment and therefore experience distress as the result of ineffectual coping mechanisms. Alternatively and as proposed in the loneliness at work model, it could be that the experience of work-related loneliness is inherently stressful, affecting one's stress responses and psychological wellbeing.

### *Job Satisfaction*

Job satisfaction refers to the employee's general level of satisfaction with the nature and circumstances of his or her job (Vandenberg, Park, DeJoy, Wilson & Griffin-Blake, 2002). There are numerous facets of job satisfaction, including wages, working conditions, control over the work quantity and pace of work, promotional opportunities, social relations in the work environment, recognition of talent, and various personal characteristics (Warr, 1999). In many respects, part of the general satisfaction of being employed is the social contact and camaraderie it brings. Therefore, it follows that good quality co-worker relationships could notably influence the experience of overall job satisfaction. Again however, there is minimal published research to advocate such a link. Inman (2001) studied the relationships between interpersonal relationship styles and overall job satisfaction. Interpersonal style was defined in terms of the degree to which employees expressed inclusion, control, and affection toward co-workers, and the extent to which the employees desired these acts to be reciprocated. Overall, the results suggest the importance of good quality co-worker relationships on overall job satisfaction. In general, the literature and anecdotal information on employee wellbeing seems to assume that job satisfaction inherently incorporates the notion of good quality social relationships in the workplace. Despite its intuitive appeal however, it seems that the relationship between positive interpersonal relationships and job satisfaction has not undergone comprehensive empirical investigation.

### *Life Satisfaction*

In many respects, general psychological outcomes such as life satisfaction may primarily be driven by factors outside of the workplace. However, recent research indicates that workplace factors may significantly contribute, or spill-over to an individual's psychological wellbeing, in part as a function of the employee's

experiences at work (Hart, 1999). Moreover, it would be expected that some overlap would exist between overall job satisfaction and life satisfaction, which is logically necessary, since feelings about a job are one component of wider life satisfaction. The correlation between the two variables is, on average about .35 (Tait, Padgett & Baldwin, 1989). The relationship between the two constructs has been examined in terms of the spill-over from work to home and home to work. While a thorough discussion of the spill-over effect is beyond the scope of this thesis, it is prudent to bear in mind that job satisfaction has a reciprocal influence on life satisfaction and general wellbeing (Warr, 1999).

In general, measures of loneliness have been shown to correlate negatively with reported life satisfaction in elderly research respondents (e.g. Doyle & Forehand, 1984). However, similar research has not been conducted using other age groups and populations. Occupational research indicates that the nature of one's job influences the degree of overall life satisfaction, in that the type of occupation, the prestige of that occupation, and the degree of challenge in the job increase satisfaction or happiness with life in general (Rice, Near & Hunt, 1980). To further this line of inquiry, it is predicted that the quality of relationships experienced at work may impact upon how the individual feels about life in general. Given the recognition that work is an integral part of life, it is not unreasonable to expect a moderate relationship between feeling lonely at work and feeling dissatisfied with life.

Given the preceding discussion, it is thought reasonable to expect that various personality characteristics, low social support, particular job characteristics, and a negative emotional climate, can lead to an individual to feel lonely at work. It also seems reasonable to think that when an individual does feel lonely at work, they are likely to psychologically withdraw from their environment, and feel stressed and dissatisfied. The following chapter presents an empirical test of the loneliness at work model.

## CHAPTER SIX

### **Evaluating the Loneliness at Work Model using Structural Equation Modelling Techniques**

The purpose of this chapter is to present the empirical findings related to the loneliness at work model. Structural equation modelling analyses were performed to examine the interrelationships among the variables and the fit of the data to the proposed model outlined in Chapter Five. This chapter includes a description of the research measures used, analyses of the descriptive statistics and correlations between the variables, and a detailed examination of the structural equation modelling procedures and model evaluation.

#### *Research Measures*

A series of previously established scales were included in the study to assess the interrelationships between the constructs which were thought to theoretically relate to loneliness at work (as indicated in Chapter Five). The questionnaire, which is included as Appendix 3, incorporates demographic and work-related questions, various measures on the antecedents of loneliness, the loneliness at work scale, and several measures relating to the predicted outcomes of loneliness. In line with previous research on employee health and wellbeing (e.g. Vandenberg, Park, deJoy, Wilson & Griffin-Blake, 2002) the focus of the loneliness at work model was on employees' perceptions of the attributes, and not on objective assessment of the existence of those attributes.

#### *Demographic and Organisational Variables*

Data were collected on the participants' demography and various characteristics of the organisation they worked for. These were all single-item questions.

Demographic questions included:

- Age
- Gender

- Marital status
- Education
- Country of residence

Work-related questions included:

- Job title
- Employment status (full-time, part-time, or casual)
- Tenure in present job
- Tenure in current organisation
- Size of organisation (number of employees in organisation)
- Type of work environment (open plan, open plan with partitions, shared office, private office, classroom, reception, shop floor, factory floor, vehicle, outdoors, no fixed work area)
- Percentage of the work day spent alone without any social contact

### ***Antecedent Conditions***

#### *Extraversion and Emotional Stability*

Extraversion and Emotional Stability were measured using the International Personality Item Pool (IPIP; Goldberg, 1999), a freely available personality inventory, accessible via the World Wide Web ([www.ipip.ori.org/ipip](http://www.ipip.ori.org/ipip)). The scales for the two constructs consist of ten items each. Negative items were reverse coded so higher scores on the scales indicate a higher degree of extraversion and emotional stability (lower levels of neuroticism) respectively. The inventories use a five-point Likert scale to assess participants' responses to the items. According to Goldberg (1999), Cronbach coefficient alphas for the scales are  $\alpha = .87$  for extraversion and  $\alpha = .86$  for neuroticism/emotional stability. The scales have each demonstrated a unidimensional factor structure. Questions 13 through 22 in Appendix 3 represent the extraversion items, while questions 23-32 represent the emotional stability items.

### *Competitive Attitude*

Competitive attitude was measured using a sub-scale of a five-factor competitiveness measure designed by Franken and Brown (1995). The five factors consist of the satisfaction that comes from improving one's performance, the desire to win, motivation to put forth effort, satisfaction that comes from performing well, and preference for difficult tasks. For the purposes of the current research, the second factor identified as the 'Desire to Win' was used to assess competitive attitude. This factor, consisting of five items, is the drive and personal satisfaction the individual gains from competing, winning, and therefore performing to a high standard relative to others. Respondents were asked to indicate on a five-point scale whether the item was 'not at all like me' to 'very much like me'. The Cronbach alpha coefficient as reported by Franken and Brown's (1995) was  $\alpha = .83$  on a sample of 486 university students in an undergraduate psychology course. Franken and Brown's (1995) research indicates that the fifth item demonstrates lower item-total correlation than the other four items, and was thus not used in the present research. The four items in the scale are all positively worded indicating that a high score reflects a high degree of competitive attitude. Questions 33 through 36 in Appendix 3 represent the Competitive Attitude items.

### *Co-Worker Support*

Co-worker support was measured using O'Driscoll's (2003) four-item social support scale. The scale measured emotional and instrumental support on a five-point Likert scale. Items included in the scale consisted of support from co-workers in four ways: helpful information and advice, sympathetic understanding and concern, clear feedback, and practical assistance. All items were positively phrased, so higher scores indicated greater support from co-workers. The reported Cronbach alpha coefficient for the scale was  $\alpha = .85$ . Questions 37 through 40 in Appendix 3 represent the Co-worker Support items.

### *Non-Work Support*

Non-work support was measured using a sub-scale from Caplan, Cobb, French, Van Harrison and Pinneau (1975). The four-items gauge general social support from spouse, family and friends, in terms of providing emotional and instrumental support. Responses are obtained on a five-point Likert scale, with higher scores indicating greater support from non-work sources. The reported Cronbach alpha coefficient for the scale was  $\alpha = .81$ . Questions 41 through 44 in Appendix 3 represent the Non-Work Support items.

### *Supervisor Support*

Supervisor support was measured by Greenhaus, Parasuraman, and Wormley (1990). The nine-item scale was designed to measure the extent to which employees feel they receive general supervisory support in their job. Respondents used a five-point Likert scale to measure their perception of supervisory support, with higher scores indicating greater support. The reported Cronbach alpha coefficient for the scale was  $\alpha = .93$ . Questions 45 through 52 in Appendix 3 represent the Supervisor Support items.

### *Span of Control*

Span of control was measured using a single item (Question 53 in Appendix 3): “How many employees do you supervise (or are responsible for)?”

### *Workload*

Workload was measured using four items from the Healthy Work Organisation Model (Vandenberg, Park, DeJoy, Wilson, & Griffin-Blake, 2002), which were originally adapted from a task demand scale developed by Klitzman, House, Israel and Mero (1990). According to Vandenberg *et al.* (2002) an employee’s workload consists of the quantitative daily demands of the work situation. Responses were provided on a five-point Likert scale. The positively worded item was reverse coded so higher scores reflected higher demands on workload. The Cronbach alpha coefficient as reported by Vandenberg *et al.* (2002) was  $\alpha = .78$  on a sample of 3930 employees

from 21 stores of one retail organisation. Questions 54 through 57 in Appendix 3 represent the workload items.

### *Climate of Fear*

Ashkanasy and Nicholson's (2003) 13-item climate of fear scale measured the extent to which employees experienced fear within their workplace. The scale employed a seven-point Likert scale to assess the response to each item. Positively worded items were reverse coded so higher scores on the scale point to a higher degree of fear experienced in the workplace. The reported Cronbach alpha coefficient for the single-factor scale was  $\alpha = .79$  on a sample of 209 restaurant/fast food employees. Questions 58 through 70 in Appendix 3 represent the Climate of Fear items.

### *Community Spirit*

Community spirit at work was measured using a scale designed by Ashmos and Duchon (2000). The measure was designed as a seven-factor scale collectively measuring spirituality at work. For the purposes of the current research, the first factor identified as 'Conditions for Community' was used to assess perceived community spirit, unity and cooperation in the organisation. The measure uses a seven-point Likert-scale to assess participants' responses to the items. All items are positively worded, thus a high score indicates an enhanced sense of community spirit at work. The Cronbach alpha coefficient as reported by Ashmos and Duchon (2000) was  $\alpha = .86$  on a sample of 696 hospital employees. Questions 71 through 78 in Appendix 3 represent the Community Spirit items.

### *Person-Environment Fit*

The perceived fit an employee has with his or her work environment was measured using Cable and Judge's (1996) three item scale. Responses are anchored on a five-point scale ranging from 'not at all' to 'completely'. All items are positively phrased so higher scores indicate higher perceived fit with the organisation. The Cronbach alpha coefficient as reported by Cable and Judge (1996) was  $\alpha = .87$  on a sample of

320 job seekers. Questions 79 through 81 in Appendix 3 represent the Community Spirit items.

### ***Loneliness at Work***

The development and psychometric properties of the Loneliness at Work Scale are described in Chapter Four of this thesis. Questions 82 through 97 in Appendix 3 represent the Loneliness at Work items.

### ***Outcomes of Loneliness at Work***

#### *Intention to Turnover*

Intention to Turnover was measured using a three-item scale developed by Landau and Hammer (1986). The measure uses a seven-point anchored response format to assess participants' responses to the items. All items are unidirectional, thus a high score on the scale indicates a higher intention to turnover. The Cronbach alpha coefficient as reported by Landau and Hammer (1986) was  $\alpha = .77$  on a sample of 300 university employees, and  $\alpha = .73$  on a sample of 372 state agency employees. Factor analyses of the items demonstrate a unidimensional structure, and its differentiation from organisational commitment (Landau & Hammer, 1986). Questions 98 through 100 in Appendix 3 represent the Intention to Quit items.

#### *Organisational Commitment*

To gauge the levels of organisational commitment, participants were asked to respond to the British Organisational Commitment Scale (BOCS) developed by Cook and Wall (1980). The scale measures an employee's overall degree of organisational commitment and originally included nine items. Recent research has indicated however that the three negative items of the scale may in fact be a method artefact, and thus there is insufficient evidence for retaining these items (Matthews & Shepherd, 2002; Peccei & Guest, 1993). According to Clegg and Wall (1981), Peccei and Guest (1993), and Matthew and Shepherd (2002), the six-item BOCS, comprising only the positively worded items, is the most parsimonious scale. The measure uses a

seven-point Likert-scale to assess participants' responses to the items. All items were positively worded, thus a high score on the scale indicates higher organisational commitment. Clegg and Wall (1981) reported a Cronbach alpha coefficient of .67 on a sample of 661 employees working in a North England engineering factory. Peccei and Guest's (1993), on a sample of 218 employees from various occupational groups, reported Cronbach alpha coefficients of .55, .60 and .73 using a three-factor structure of the six item scale. Questions 101 through 106 in Appendix 3 represent the Organisational Commitment items.

### *Job Satisfaction*

The amount of satisfaction individuals experience in their job was measured using Hackman and Oldham's (1975) three item measure of job satisfaction. The scale originally included five items, which were included as part of the Job Diagnostic Survey (Hackman & Oldham, 1975). In its initial development, Hackman and Lawler (1971) previously employed the first three items of the scale as a short form of the measure, which were used in the current research. The measure uses a seven-point Likert scale to assess participants' responses to the items. The one negatively worded item was reverse coded so higher scores on the scale indicate a higher degree of job satisfaction. In a study of 208 telecommunication workers, Hackman and Lawler (1971) reported an internal consistency reliability of  $\alpha = .76$ . Katz (1978) reported an internal consistency reliability of  $\alpha = .74$  in a study of 2094 government employees. Questions 107 through 109 in Appendix 3 represent the Job Satisfaction items.

### *Perceived Job Stress*

In this thesis, job stress refers to an employee's response to, or perception of work-related strain. The Perceived Stress Scale was developed by Cohen, Kamarck and Mermelstein (1983) and was used to gauge stress reactions. To differentiate from personal stress, the scale can be shortened and adapted for employee-related research, with the addition of the word 'work' embedded in the items (Vandenberg *et al.*, 2002). The measure used in the current research consists of ten items and uses a five-point Likert scale to assess participants' responses to the items. Positively worded items were reverse coded so higher scores on the scale reflect a higher degree of

work-related stress. Cronbach alpha coefficient as reported by Cohen, Kamarck and Mermelstein (1983) was  $\alpha = .84$  on a sample of 332 college students,  $\alpha = .85$  on a sample of 114 students in an introductory psychology course, and  $\alpha = .86$  on a sample of 64 participants in a smoking cessation programme (using the original 13 item scale). Vandenberg *et al.* (2002), using the work-related version, report a Cronbach alpha coefficient of .88 on a sample of employees from 21 stores of one retail organisation. Questions 110 through 119 in Appendix 3 represent the Job Stress items.

### *Life Satisfaction*

Life Satisfaction was measured using the Satisfaction with Life Scale, developed by Diener, Emmons, Larsen and Griffin (1985). The five-item unidimensional scale measures an overall evaluation of life satisfaction, with each item reflecting various facets of subjective happiness with life. The measure uses a seven-point Likert scale to assess participants' responses to the items. All items were positively worded, thus a high score on the scale indicates higher satisfaction with life. The Cronbach alpha coefficient as reported by Diener, Emmons, Larsen and Griffin (1985) was  $\alpha = .87$  on a sample of 176 undergraduate students. Golele (2003) reports an alpha coefficient of  $\alpha = .92$  on a convenience sample of 54 South Africans. Questions 120 through 124 in Appendix 3 represent the Life Satisfaction items.

### *Piloting the Questionnaire*

The online research questionnaire was piloted on three colleagues, before being broadcasted to a wider audience. They were asked to be critical of the questionnaire, in terms of content, readability and relevance to work-related issues. One respondent indicated that because of the autonomy in their role and lack of direct supervision, they found it difficult to respond to questions regarding the support from a supervisor. To attend to this issue, the word supervisor in the instructions was followed by the phrase "or the person you are responsible to". It was thought that most employees would be aware of who they were responsible to in terms of work performance. Another comment regarded the unsuitable response options on the non-work support scale. There were four questions that required the respondents to answer on a scale ranging from "not at all" to "very much". One question related to *how easy* it was to

talk to people outside work. The option on this question was slightly modified to read “very easy” which better reflected the particular question. Overall, pilot testing suggested that the questionnaire was clearly worded, formatted in a ‘user-friendly’ manner, and representative of work-related issues, thereby ensuring face validity of the research instrument.

### ***Procedure and Sample***

The details of the procedure and sample descriptions are outlined in Chapter Four. For the sake of clarity and recollection, a brief summary of the methodology and sample characteristics will be outlined here. The medium for data collection was an anonymous research questionnaire published over the internet. Participants were recruited by email from several sources, including national business directories, business contacts, list servers, and posters. Three hundred and seventy four employees from various occupational groups participated in the research. As outlined in Chapter Four, the majority of participants were women (65% of sample), who were married or in a recognised de facto relationship (65%), worked full-time (average tenure in job 4.2 years, organisation tenure 6.4 years), were from New Zealand (57%), and held at least a Bachelor’s degree (74%). The average age of the participants was 37.8 years. Data sets with substantial missing data were deleted, leaving 363 useable cases. Missing data within these cases were imputed using NORM software. Overall, the variance of the data did not significantly change after imputation had been conducted.

### ***Descriptive Statistics and Preliminary Analyses***

#### *Descriptive Statistics of the Research Variables*

Table 6.1 provides the means, standard deviations, ranges, and Cronbach alpha coefficients for each of the 17 variables in the current study (after multiple imputation of missing data). All of the variables achieved the suggested minimum alpha coefficient of .70 (Nunnally, 1978).

**Table 6.1**

*Means, Standard Deviations, Ranges, and Alpha Coefficients of the Variables in the Study*

<b>Research Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>	<b>Alpha Coefficient</b>
Extraversion	33.25	7.85	13-50	.88
Neuroticism	36.14	7.68	10-50	.88
Competitive Attitude	11.04	4.21	4-20	.85
Co-Worker Support	15.23	3.99	4-24	.87
Non-Work Support	17.21	2.85	4-20	.80
Supervisor Support	28.31	8.42	8-40	.92
Span of Control	3.25	19.19	0-335	NA
Workload	10.75	3.58	4-19	.82
Climate of Fear	36.81	13.54	14-76	.88
Community Spirit	40.09	10.07	11-56	.89
Person-Environment Fit	10.15	2.51	3-15	.70
Intention to Turnover	9.35	6.10	3-21	.91
Organisational Commitment	31.16	6.92	10-42	.83
Job Satisfaction	15.38	4.72	3-21	.83
Job Stress	23.46	6.70	10-45	.87
Life Satisfaction	25.28	6.21	5-35	.87
Loneliness	42.60	18.54	16-104	.94

*Demographic/Organisational Variables and Loneliness at Work*

In terms of demography, few significant associations were found between the characteristics of the respondents and loneliness at work. Analyses revealed that education status and the percentage of time spent working alone without social contact were associated with loneliness at work. An alpha threshold of .05 was used in the statistical tests. A series of one-way analysis of variance tests revealed non-significant differences between loneliness at work and gender ( $t(360) = 1.86, p = .173$ ), marital status ( $F(5,356) = .44, p = .817$ ), country of residence ( $F(8,353) = 1.18$ ,

$p = .309$ ), employment status ( $F(2,358) = 2.81, p = .062$ ), and type of work environment ( $F(9,352) = 1.04, p = .410$ ). The correlation between age and loneliness at work was not significant ( $r(362) = .006, p = .915$ ) nor was the correlation between the size of the organisation and loneliness ( $r(362) = .06, p = .226$ ), tenure in the job and loneliness ( $r(361) = -.082, p = .121$ ), or tenure in the organisation and loneliness ( $r(360) = -.097, p = .067$ ). From qualitative interpretation of the data, no salient pattern emerged between the degree of loneliness experienced and the respondent's job title. For example, amongst the very lonely were academics, consultants, medical practitioners, and administrative personnel. Amongst the least lonely were academics, scientists, human resources personnel, teachers, solicitors, and administrators. From the present data, no conclusion could be drawn regarding occupational title and loneliness.

The only characteristics showing a statistically significant association with loneliness at work were education status ( $F(3,358) = 3.45, p < .05$ ) and time spent working alone ( $F(9,352) = 3.55, p < .05$ ). Post-hoc comparisons using the Tukey test indicated two sets of comparisons to be statistically significant. Those respondents who worked alone for 90 percent of the day were significantly more likely to report loneliness ( $M = 59.92, SD = 21.04$ ) than those who worked alone for 20 percent of the day ( $M = 38.69, SD = 15.91$ ) or 10 percent of the day ( $M = 39.25, SD = 18.11$ ). In terms of education status, post-hoc comparisons also indicated two sets of comparisons to be statistically significant. The degree of loneliness experienced at work was significantly higher for those who held post-graduate qualifications ( $M = 43.96, SD = 18.03$ ) or a Bachelors degree ( $M = 43.93, SD = 19.75$ ) than for those who held vocational or technical qualifications ( $M = 35.84, SD = 14.87$ ). This finding indicates that those respondents with higher education tend to experience loneliness at work more so than those with lower educational levels. Caution must be exercised when interpreting this finding however, as there were disproportionately fewer respondents who had completed vocational or technical qualifications (49 compared with 174 who had completed post-graduate qualifications and 79 who had a Bachelors degree). It is also likely that the nature of the job, rather than education per se, is influencing the degree of loneliness. This result will be discussed further in Chapter Seven.

Given that loneliness at work was largely unrelated to an individual's demography or the objective characteristics of their employing organisation, the data were included in

the study descriptively rather than for use as explanatory variables in the structural equation model.

### *Outliers, Skew and Kurtosis*

Outliers can alter the outcome of the analysis and tend to violate data normality. Four outliers within the span of control variable were identified through the examination of scatter plots. Exploratory analyses also indicated potential skew and kurtosis problems with the span of control variable. Broadly speaking, skew is the slant in a distribution, whereas kurtosis is the peaked nature of a distribution. A common method to test for normality is to run descriptive analyses to obtain skew and kurtosis statistics. Skew and kurtosis values should be between +3.00 to -3.00 when the data are normally distributed. Values that exceed +3.00 or are less than -3.00 indicate statistically significant degrees of non-normality (Thode, 2002).

According to these heuristics, the only problematic variable was span of control, largely due to the extreme outliers (Skew = 14.78, kurtosis = 249.73). All other variables were well within the recommended threshold for normality. Cohen and Cohen (1983) suggest retaining outliers, where the number of observed cases constitutes less than 1-2 percent of the sample. The analyses are therefore reported on the entire sample, and Bollen-Stine bootstrapping techniques were applied to correct for non-normality. The bootstrapping process will be detailed further in the SEM method section.

### ***Correlations between the Research Variables***

The zero-order correlation coefficients between all variables in the model are presented in Table 6.2. Correlations between the variables were largely as expected with no exceptionally high correlations. In general, if the research variables were too highly correlated, assessment of the unique role of each variable is difficult, if not impossible. According to Kline (1998), bivariate correlations which exceed .85 suggest multicollinearity and variable redundancy. The highest correlation between the research variables was .80 (intention to turnover and job satisfaction). Given the recommended cut-off value of .85, multicollinearity between the variables was

unlikely in the present research. Given that the focus of the study is on loneliness at work, the correlations between the research variables and loneliness will briefly be discussed.

As expected, lower scores on the loneliness at work scale were associated with extraversion ( $r = -.30, p < .05$ ) and emotional stability ( $r = -.25, p < .05$ ). Higher loneliness scores were slightly associated with the indication of a competitive attitude ( $r = .17, p < .05$ ). A perception of inadequate co-worker support was strongly associated with higher levels of loneliness at work ( $r = -.62, p < .05$ ), as was poor supervisory support ( $r = -.48, p < .05$ ), and to a lesser extent non-work support ( $r = -.13, p < .05$ ). Span of control was not significantly associated with loneliness at work ( $r = .01, p = ns$ ). Higher scores on the loneliness at work scale were associated with higher workloads ( $r = .18, p < .05$ ), elevated levels of perceived work stress ( $r = .51, p < .05$ ), a perception of fear in the workplace ( $r = .64, p < .05$ ), and a greater intention to turnover ( $r = .46, p < .05$ ). Higher degrees of loneliness at work were related to lower levels of perceived organisational fit ( $r = -.48, p < .05$ ), job satisfaction ( $r = -.53, p < .05$ ), organisational commitment ( $r = -.52, p < .05$ ), perceived community spirit in the workplace ( $r = -.69, p < .05$ ), and life satisfaction ( $r = -.23, p < .05$ ).

**Table 6.2: Correlation Matrix of the Research Variables**

Research Variables	Extraversion	Emotional Stability	Competitive Attitude	Co-Worker Support	Supervisor Support	Non-Work Support	Span of Control	Workload	Climate of Fear	Community Spirit at Work	Person-Environment Fit	Intention to Turnover	Organisational Commitment	Perceived Job Stress	Job Satisfaction	Life Satisfaction	Loneliness
Extraversion	1.00																
Emotional Stability	<b>.21</b>	1.00															
Competitive Attitude	.01	<b>-.29</b>	1.00														
Co-Worker Support	<b>.24</b>	.09	-.04	1.00													
Supervisor Support	<b>.22</b>	<b>.13</b>	-.07	<b>.49</b>	1.00												
Non-Work Support	<b>-.19</b>	.06	-.09	.07	.06	1.00											
Span of Control	-.03	-.05	.04	-.04	-.05	.02	1.00										
Workload	-.06	-.10	.01	<b>-.11</b>	<b>-.15</b>	-.05	-.08	1.00									
Climate of Fear	<b>-.20</b>	<b>-.33</b>	<b>.21</b>	<b>-.42</b>	<b>-.53</b>	<b>-.11</b>	.03	<b>.22</b>	1.00								
Community Spirit at Work	<b>.23</b>	<b>.19</b>	<b>-.12</b>	<b>.57</b>	<b>.77</b>	.07	-.01	<b>-.15</b>	<b>-.73</b>	1.00							
Person-Environment Fit	<b>.14</b>	<b>.17</b>	<b>-.07</b>	<b>.33</b>	<b>.42</b>	.06	.02	<b>-.13</b>	<b>-.55</b>	<b>.59</b>	1.00						
Intention to Turnover	-.07	<b>-.11</b>	<b>.10</b>	<b>-.29</b>	<b>-.48</b>	.01	-.03	.10	<b>.46</b>	<b>-.57</b>	<b>-.44</b>	1.00					
Organisational Commitment	<b>.15</b>	<b>.12</b>	<b>-.13</b>	<b>.36</b>	<b>.49</b>	-.02	.06	<b>-.14</b>	<b>-.58</b>	<b>.67</b>	<b>.60</b>	<b>-.66</b>	1.00				
Perceived Job Stress	-.12	<b>-.38</b>	<b>.16</b>	<b>-.28</b>	<b>-.42</b>	.00	.05	<b>.48</b>	<b>.60</b>	<b>-.52</b>	<b>-.39</b>	<b>.39</b>	<b>-.44</b>	1.00			
Job Satisfaction	<b>.18</b>	<b>.20</b>	<b>-.12</b>	<b>.33</b>	<b>.54</b>	.07	.04	-.07	<b>-.59</b>	<b>.66</b>	<b>.54</b>	<b>-.80</b>	<b>.68</b>	<b>-.50</b>	1.00		
Life Satisfaction	<b>.20</b>	<b>.27</b>	-.11	.08	.08	<b>.36</b>	.08	-.08	<b>-.21</b>	<b>.18</b>	<b>.20</b>	<b>-.16</b>	<b>.17</b>	<b>-.24</b>	<b>.31</b>	1.00	
Loneliness	<b>-.30</b>	<b>-.25</b>	<b>.17</b>	<b>-.62</b>	<b>-.48</b>	<b>-.13</b>	.01	<b>.18</b>	<b>.64</b>	<b>-.69</b>	<b>-.48</b>	<b>.46</b>	<b>-.52</b>	<b>.51</b>	<b>-.53</b>	<b>-.23</b>	1.00

NB: Figures in **Bold** type represent a significant correlation at the .05 level.

### *Justification for Structural Equation Modelling*

Structural Equation Modelling (SEM) is a set of statistical techniques which takes a hypothesis-testing approach to model analysis. In SEM, a model is made up of various latent variables, or conceptual constructs, which are represented by multiple manifest variables. Structural models are most often illustrated in diagrammatic form to conceptualise the hypothesised paths. Technically, a structural equation model is the hypothesized pattern of directional and non-directional linear relationships among a set of manifest variables and latent variables (Kline, 1998). In the most common form of SEM, the purpose of the model is to account for the variation and co-variation amongst the manifest variables. Subsequently, the adequacy of the model can be determined by the fit of the obtained covariance matrix with the covariance matrix implied by the model. In other words, SEM techniques determine whether the hypothesised model is consistent with the data. If so, it becomes feasible to propose directional relationships between the variables (Byrne, 2001).

Structural equation models are often referred to as ‘causal’ models. Therefore it is tempting to claim that any significant paths within the model infer causal effects between the constructs. However, SEM techniques by themselves, cannot infer causality. In developing a theoretical model, one can postulate causality and begin to think in causal terms. Moreover, SEM techniques can be used to test the adequacy of the theoretical associations and ‘causal thinking’ behind the model. However, while the model may have implicit causal connections in terms of the relevance to everyday life, variables measured using cross-sectional methodologies, irrespective of statistical analysis, cannot be interpreted as having a direct cause and effect relationship. In essence, attributing causality is a methodological issue, not a statistical issue. Nonetheless, this constraint is not necessarily a limiting factor in the Loneliness at Work Model, given the difficulties of implementing a cause-and-effect methodology with non-manipulative variables. Overall, structural equation models imply direction more strongly than simple correlational associations. Moreover, because there is potential within the loneliness model for each variable to influence every other variable, possibly recursively, the use of SEM is helpful in developing a better understanding of the relationship between the constructs. However, on their own

structural equation models do not assume causal effects or completely resolve causal ambiguities.

There are a number of advantages in utilising SEM techniques when analysing survey data compared to path analysis or regression analysis. Firstly, SEM allows the researcher to measure the relative contribution of each indicator to its related latent construct. For example, in the current model we can test how well the co-worker support measure relates to the social support latent factor. Secondly, SEM allows the analysis of psychological constructs without absorbing measurement error. In essence, SEM recognises that the measurement of variables is imperfect and therefore models the measurement error associated with each indicator and with each latent dependent variable, that is, the Loneliness at Work, Employee Attitudes and Wellbeing variables. Thirdly, SEM offers a more thorough analysis of the model by using latent variables for the combination of similarly related variables, rather than using a single manifest derivative. SEM also allows for mediating variables to be modelled and tested. Finally, SEM places emphasis on model fit, whereas various aspects of path analysis utilise multiple r-squared values and significance tests. Emphasising model fit allows the researcher to modify the model to obtain a stronger fit with the data, which also assists in the theoretical model-refining process. In essence, SEM focuses on the strength of model conformity with the data, which is an issue of association not significance.

### ***Structural Equation Modelling Method***

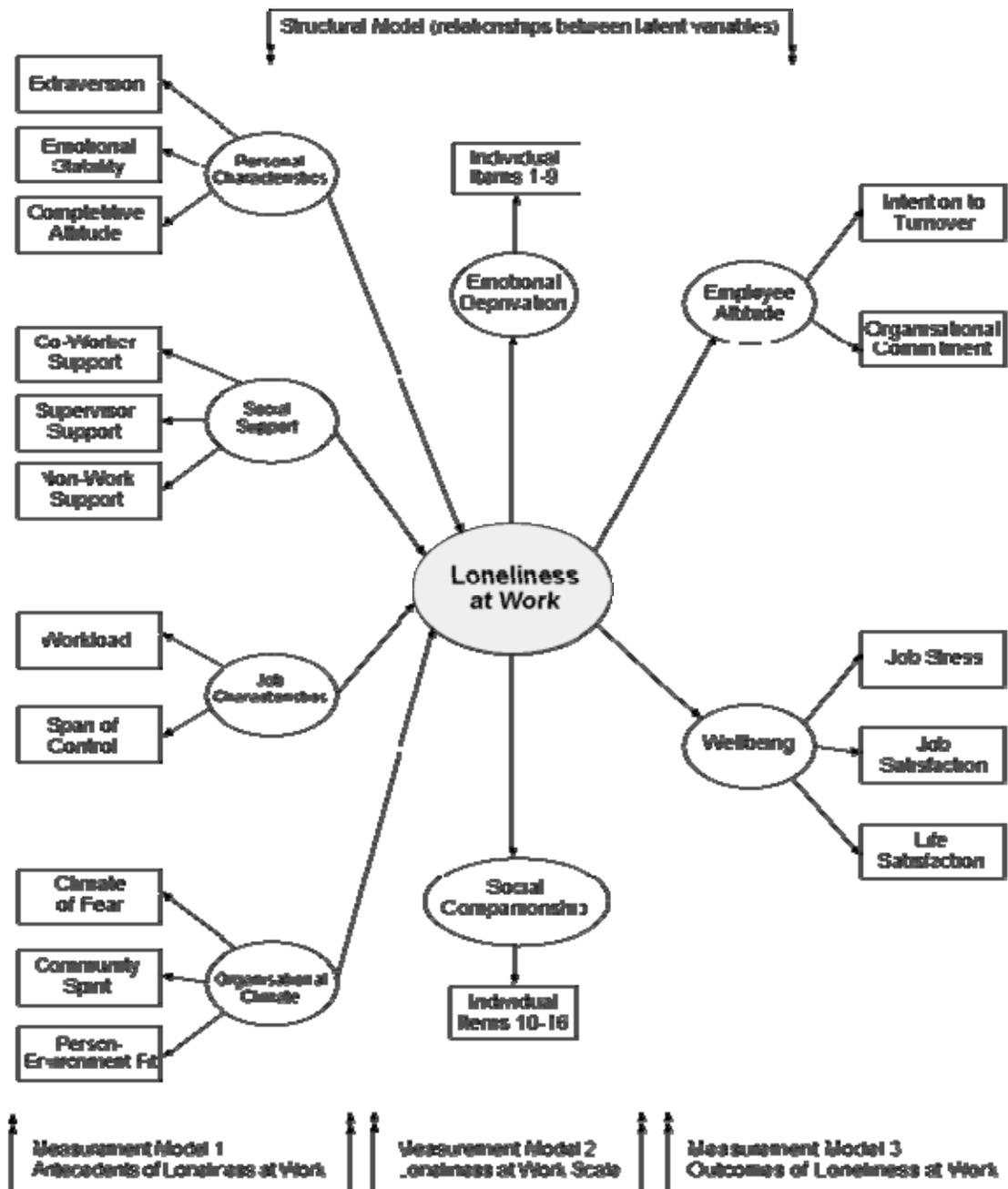
#### *Overview of Measurement and Structural Models*

Schumacker and Lomax (1996) recommend a two-step process in structural equation modelling, namely evaluating the measurement models and fitting the structural model. In SEM, the measurement model refers to each independent set of latent factors with their respective manifest items and their associated error terms. The structural model, on the other hand, defines the relationships among the latent variables only (Byrne, 2001). The diagram in Figure 6.1 reintroduces the architecture for the measurement and structural models in the Loneliness at Work Model. Briefly, the Loneliness at Work model depicts several latent variables which are made up of

various manifest variables. According to the SEM literature (Palmer, Graham, Taylor, & Tatterson, 2002), models should not have independent manifest variables estimating dependent latent variables. Such a situation suggests, for example, that scores on a particular test influences a latent trait an individual has. Rather, the model should conceptually and structurally indicate that certain latent traits influence the latent trait of workplace loneliness, which in turn influences the latent traits of employee attitude and wellbeing.

In Figure 6.1 over, manifest (measured) variables are represented by rectangle boxes, while latent variables are represented by ovals. The error terms are not shown in this representation, but are modelled in the AMOS diagrams in the results section. Effectively, residual variables are associated with the measured variables and are referred to as errors (e), while errors associated with latent dependent variables are referred to as disturbances (d).

The first step of structural equation modelling is confirmatory factor analysis (CFA), where the measurement models are assessed separately from the structural model. If the fit indices or 'goodness of fit' measures for the measurement models are acceptable, the researcher can then, in principle, conclude that the indicators adequately measure the intended latent constructs (Kline, 1998). This process enables the researcher to determine the presence of poorly fitted pieces to the overall structural model before it is assessed. Once the measurement models have been examined, the comprehensive structural model can then be evaluated for fit, and modified if necessary. In terms of the current study, the first step of the process involved using confirmatory factor analysis to examine the efficacy of the three measurement models. The process began with the examination of the Loneliness at Work Scale measurement model (the details of the CFA have previously been detailed in Chapter Four) followed by the evaluation of the 'Antecedents' measurement model and the 'Outcomes' measurement model. Once the measurement models had been examined and refined, the overall structural model was remodelled and analysed.



**Figure 6.1: Architecture for the Measurement and Structural Models**

The model was developed in AMOS Graphics, a software programme designed for structural equation modelling (Arbuckle, 2003). As per standard practice, one path from each latent variable was fixed to 1.0 in order to identify the model (Schumacker & Lomax, 1996) and to set the measurement scale for each factor (Arbuckle, 1999). This process will be discussed further when discussing the results of the measurement models. Maximum likelihood estimation was used for model estimation on the variance-covariance matrix.

### *Item Parcelling*

Bentler (1995) has noted that in order to overcome sample size restrictions, it is acceptable to combine previously developed measures into sum scores. This process is called item parcelling, which is simply the sum of a set of manifest items. A parcel of items then serves as one indicator of a given latent variable. For example, items 13 through 22 in Appendix 3 were aggregated into an 'extraversion' parcel for analysis in the personal characteristics latent factor within the measurement model. In effect, parcelling simplifies the measurement and structural models by including summary scores for instruments which have previously been validated (Little, Cunningham, Shahar & Widaman, 2002). However, for new measures such as the Loneliness at Work Scale, the measurement model must be analysed at the item-level (Bandalos, 2002; Bandalos & Finney, 2001; Hall, Snell, & Foust, 1999). In essence, parcels tend to provide better model fit because they have fewer parameters to estimate, they have fewer chances for residuals to be correlated, and they can lead to a reduction in sampling error (MacCallum, Widaman, Zhang & Hong, 1999). Item parcels tend to function best when constructed on unidimensional structures. A Cronbach Alpha coefficient over 0.7 indicates unidimensionality. In the current study, all research variables achieved the 0.7 cut-off, and each variable was factor analysed to ensure the parcels were in fact unidimensional. Analysis indicated that virtually all variables were unidimensional. Organisational Commitment indicated a two factor solution, however a large general factor was observed. Given this outcome, it was thought appropriate to parcel the items to improve the likelihood of acceptable model fit.

### *Bootstrapping*

An important assumption in SEM analyses is multivariate normality. However, this assumption is rarely met with measures of psychological phenomena (Olsson, Foss, Troye, & Howell, 2000; West, Finch, & Curran, 1995). As indicated previously, the data in the current study do not suffer significantly from non-normality. However, for assurance and completeness, it was thought prudent to execute bootstrapping procedures to counter the possibility of non-normality affecting the results. Maximum likelihood estimation will not, of its own accord resolve issues with non-normality, therefore 2000 Bollen-Stine bootstraps were used in order to counter potential non-

normality (Bollen & Stine, 1992). This technique obtains estimates and standard errors from 2000 multiple random sub-samples, which are then averaged to resolve any inaccuracies that might be obtained from analysis with non-normal data (Schumacker & Lomax, 1996). Bollen-Stine bootstrapping is considered one of the best strategies for correcting non-normal data in samples with 500 participants or less (Nevitt & Hancock, 2000).

### *Model Fit Criteria*

The measurement and structural models were evaluated against a number of fit criteria, as per the recommendations of Schumacker and Lomax (1996). The fit indices utilised in the model evaluation process will be briefly outlined here, but have been detailed in Chapter Four when examining the Loneliness at Work confirmatory factor analysis. In brief, because a large sample size often affects the goodness of fit chi-square test (Tabachnick & Fidell, 2001), several researchers have suggested multiple indices for judging the fit of a model to the data (Hoyle, 1995; Hu & Bentler, 1999). For clarity, the following indices (and their criteria for sufficient fit) were used in the present study to evaluate model fit:

1. **Chi-square test:** an indication of fit between the predicted and obtained covariance matrix. A non-significant chi-square ( $p > .05$ ) indicates satisfactory fit.
2. **Goodness of fit index:** an overall degree of fit of the predicted square residuals compared to the actual data (GFI; criterion of .90 or higher).
3. **Adjusted goodness of fit index:** an overall degree of fit adjusted for the degrees of freedom (AGFI; criterion of .90 or higher).
4. **Comparative fit index:** the difference between the examined model and the independence model (CFI; criterion of .95 or higher).
5. **Root mean square error of approximation:** the difference between the examined model and the saturated model (RMSEA; criteria of .05 or lower with upper bound no higher than .08).
6. **Bayesian information criterion (BIC;** fit is relative to alternative models).

Although SEM is inherently a confirmatory or hypothesis testing approach, in practice it is often used in an exploratory manner to achieve sufficient model fit (Byrne, 2001). Because of the newness of the model it was necessary to alter various aspects of the original model to obtain adequate fit, and therefore report meaningful effects. A general overview of the model refinement process is presented below followed by the results of the measurement and structural models.

### *Model Refinement Process*

For structural equation models such as the Loneliness at Work Model, which have not undergone prior empirical examination, model misspecification is likely. Schumacker and Lomax (1996) suggest that during the SEM process models should be appropriately adjusted, ensuring that the measurement models obtain sufficient fit prior to testing the structural model. As will become evident, adjustments were in fact necessary for the Loneliness at Work model. Therefore, the refinement process will be briefly outlined below, which will be followed by the results of the model evaluation.

During the SEM process, model comparison is usually conducted for two reasons, namely to compare variant models to determine the best structure (as in the Loneliness at Work Scale in Chapter Four), and to compare the fit of an original and a refined or altered model. Should a model require refinement due to an initial lack of fit, original and altered models can be compared to determine if a significant improvement in fit has been obtained. In practice, the model is adjusted based on changes suggested by modification indexes and the examination of factor loadings, in concurrence with theoretical reasoning. Model comparisons can be evaluated using the aforementioned fit measures, implementing certain criteria to determine a significant difference between indices, as detailed in Chapter Four. Briefly, these criteria include: the  $\Delta\chi^2_{\text{diff}}$  test (criterion of  $p < .05$ ), RMSEA (non-overlapping confidence intervals), and BIC (10 points or more favouring the lower BIC value).

In general, the model refinement process is an iterative sequence of steps. SEM models can be improved in three ways: (1) by including additional variables (including additional latent constructs), (2) by including additional paths in the

measurement model to more appropriately depict the relationships among the variables and related constructs, and (3) eliminate variables (and consequently paths) from a model that relate insufficiently to other variables in the measurement model (Schumacker & Lomax, 1996). Hence, more parsimonious models (removal of paths, variables or constructs) and more elaborate models (addition of paths or variables) are tested against the original theoretical model. The process used in this thesis was conducted using the literature, tutorial information, and professional correspondence as a guide (e.g. Byrne, 2001; the AMOS 'Help' option within the software programme; SEMNET messages/correspondence (<http://bama.ua.edu/archives/semnet.html>), and the provision of online information/tutorials, e.g. <http://www.utexas.edu/its/rc/tutorials/stat/amos/index.html>).

The first step in the process was to consider correlating the latent variables. Tanaka and Huba (1984) have argued that models of psychological constructs often provide insufficient model fit because of the forced independence of latent variables. When modelled this way, that is, when correlations are not modelled between the latent variables, the model is effectively indicating that all of the latent constructs in the measurement model are independent. Given that this is an unlikely scenario in psychological research, correlations in the Loneliness at Work model were allowed between the latent variables.

The second step, which is related to the first, involves the inclusion of omitted paths which would lead to large improvements in the model. Lagrange Multiplier Indices (LMIs) indicate the amount of improvement expected in the  $\chi^2$  model fit (Steiger, 1990). In AMOS, a covariance table is provided which indicates the percentage difference in chi-square if a path between the two variables were to be included. Effectively, this part of the process evaluates which parameters should be added to the model to improve fit (Ullman, 2001). This method of model modification is analogous to forward stepwise regression. During this stage paths are considered for inclusion if the related modification statistic provides at least 10% change to the  $\chi^2$  fit (this is later reduced to 5% when the model becomes closer to obtaining fit). In the initial stages of refinement, only the strongest paths are generally considered, so that there is minimal disruption to the original theoretical model. Moreover, additional paths are included only if their inclusion is theoretically justified.

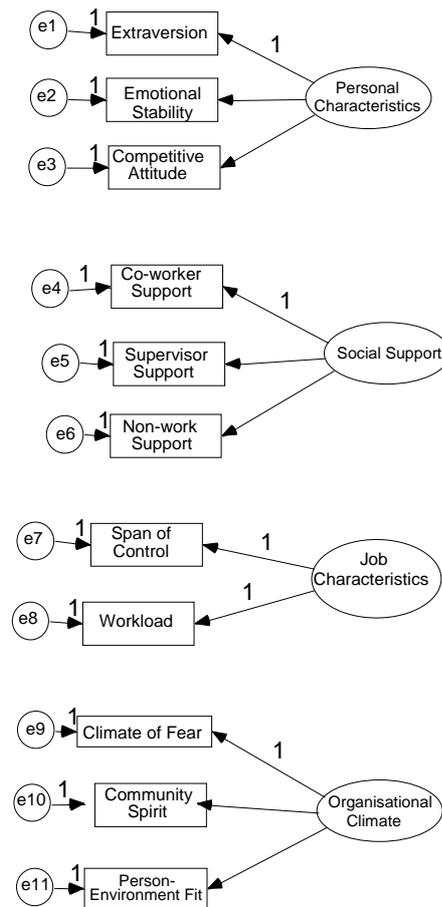
The next series of steps focus on model trimming by deleting paths. Paths are omitted according to the size of their coefficient, with the smallest coefficients being removed first. According to Comrey and Lee (1992) the standardised factor loadings can be interpreted as follows: below .46 is poor, between .46 and .54 is fair, between .55 and .62 is good, between .63 and .70 is very good, and a loading above .71 is excellent. According to Comrey and Lee (1992), standardized paths below .32 are considered too low for interpretive value, and therefore are removed. In essence, the removal of paths below .55 should not hinder the value of the measurement model markedly. The model refinement process continues until a theoretically justified and statistically well-fitting model is achieved. Overall, the iterative process includes the addition of paths based on the modification indices and the removal of paths based on their coefficient loadings.

After the various changes to the measurement models have been conducted, the fit indices are reviewed. The refinement process comes to an end when the model obtains an RMSEA of less than .08 (preferably less than .06), and a GFI of at least .90, or a CFI of at least .95. Additionally, there must be a significantly favourable difference between the RMSEA of the original measurement model and the refined measurement model. Finally, there must be either a significant decrease in chi-square ( $p < .05$ ) or a sizeable (10 points or more) drop in BIC between the original and refined measurement models.

### ***Results: Measurement Models***

#### ***Measurement Model 1: Antecedent Conditions of Loneliness at Work***

The Antecedent measurement model consists of four latent variables, each with manifest derivatives, and is shown in Figure 6.2. The fit statistics are indicated in Table 6.3 over.



**Figure 6.2: Original Measurement Model for the Antecedents of Loneliness at Work**

### *Model Refinement*

One of the issues with the above model is ‘model under-identification’ (Kline, 1998), particularly with the job characteristics factor. An under-identified model is simply a model where there are more unknown parameters to estimate than there are known parameters. In order to run the model, SEM requires the number of unknown, or free parameters to be either the same as the number of known parameters (defined as an identified model), or preferably smaller than the number of known parameters (defined as an over-identified model). Therefore, to facilitate the number of known parameters, certain paths must be fixed to one. Latent factors with fewer than three manifest indicators typically require both manifest-latent paths to be fixed to one, in order to meet identification requirements (Bollen, 1989). With the job characteristics factor there are only two manifest variables. Consequently, the variance of each

variable and the covariance between these variables can be identified, resulting in three known parameters. However, the model is therefore required to estimate the variance for the two error terms, the latent variable, the two paths between the latent variable and the manifest variables, and the two paths between the error terms and the manifest variables. As a result, the SEM programme attempts to estimate seven unknown parameters given the known three parameters, which in effect is not possible to calculate. The job characteristics factor is therefore considered 'under-identified'. In hindsight, this problem could have been avoided if three or more manifest derivatives were used for the job characteristics latent variable.

Despite this procedure of fixing both job characteristic paths to one, the measurement model continued to demonstrate poor fit, with the four factors simply not clustering together in a coherent fashion (as indicated in the fit statistics in Table 6.3 below). In truth, this was largely an anticipated result, given that it was the first time these particular constructs have been modelled in SEM. Consequently, a series of adjustments were necessary to obtain sufficient fit while maintaining conceptual coherence. The procedure and rationale for such changes were outlined in the previous section.

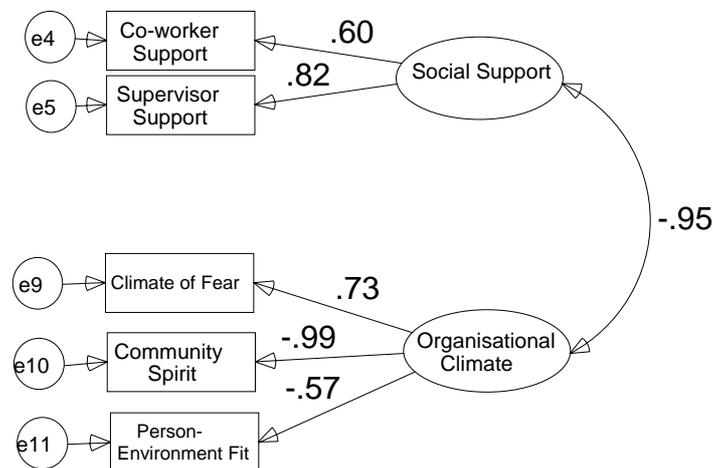
The original measurement model, according to the AMOS output file, was not admissible due to the covariance matrix demonstrating a 'not positive definite' solution. According to AMOS, a 'not positive definite' solution indicates that something within the model is 'wrong' because certain variance estimates are negative. What was 'wrong' with the model was the Job Characteristics variable exhibited negative variance, along with the error variables associated with emotional stability and co-worker support. Consequently, path coefficients within the model were not produced by the programme. In order to run the model, covariance paths were added between all of the latent variables. Correlating the latent variables was a theoretically reasonable resolution, given that all of the variables were hypothesised to relate to loneliness at work, and therefore were predicted to commonly relate to each another. Nonetheless, negative variance was still apparent with the Job Characteristics variable, indicating that the model was statistically invalid. This situation is called a Heywood Case in the SEM literature (Kline, 1998). Heywood Cases have many possible causes, including insufficient sample size to run the model (less than 150

cases), or a poorly specified model, such as having only two indicators per latent variable. In most cases, it is necessary to specify a better-fitting model (Kline, 1998). Therefore, the Job Characteristics latent variable (and its associated manifest variables, error terms, and covariance paths) was removed from the model. This resulted in the solution being admissible, in that the model was over-identified and positive definite, with all variances indicating positive figures. The removal of this variable improved the fit indices, however they remained outside the acceptable range.

The model exhibited poor standardised path coefficients on several variables. The extraversion and competitive attitude manifest variables exhibited low factor loadings with the personal characteristics latent variable (.27 and -.35 respectively). Due to its poor performance (and due to the troublesome nature of having a single-indicator latent variable), the Personal Characteristics latent variable (and its associated manifest variables, error terms, and covariance paths) was removed from the model. Collectively, the poor performance of the Job Characteristics and the Personal Characteristics latent variables, coupled with the fact that the Organisational Climate and Social Support latent variables demonstrated higher variance, indicated that the removal of these variables was warranted to progress with model evaluation. These procedures resulted in marked improvement in model fit. However, the Non-Work Support factor continued to demonstrate a low (and non-interpretable) path coefficient leading to the Social Support latent variable (-.06) and was subsequently removed from the model. This decision was made somewhat reluctantly, as the removal of this variable resulted in the Social Support latent variable being modelled with only two indicators, which can be problematic in subsequent structural model evaluation.

After the modifications were performed, the measurement model consisted of two latent factors, namely Social Support (Co-Worker Support and Supervisor Support) and Organizational Climate (Climate of Fear, Community Spirit, and Person-Environment Fit). The final model is shown in Figure 6.3 below. All the factor loadings were deemed acceptable according to Comrey and Lee's (1992) criteria, as outlined previously. The two latent variables remained correlated in order to over-identify the social support variable and thus improve model fit. The covariance between the two latent variables was considered theoretically coherent, in that the

variables relating to social support could potentially have a reciprocal relationship with the perception of the organisational climate. However, correlating latent variables can have ramifications when testing the structural component of the model, as will be discussed in subsequent sections.



**Figure 6.3: Final Measurement Model for the Antecedents of Loneliness at Work**

Original and final model fit statistics are displayed in Table 6.3.

**Table 6.3**

*Fit Statistics for the Original and Final Measurement Models  
for the Antecedents of Loneliness at Work*

Model	Goodness of Fit			Comparative Fit		
	GFI	AGFI	CFI	RMSEA	RMSEA 90% CI	BIC
Original model ( $\chi^2 = 492.4$ ; $df = 45$ )	.84	.77	.56	.17	.15 - .18	616.19
Final Model ( $\chi^2 = 19.2$ ; $df = 4$ )	.98	.92	.98	.10	.06 - .15	84.07

*Note.* GFI = goodness of fit; AGFI = adjusted GFI; CFI = comparative fit index; RMSEA = root mean standard error of approximation; CI = confidence interval; BIC = Bayesian information criterion.

### *Model Comparison*

Comparison between the original and final model was significant:  $\Delta\chi^2 = 437.2$  ( $\Delta df = 41$ ,  $p < .001$ ), RMSEA ranges did not overlap, and the BIC difference was 532.12. Nevertheless, the RMSEA for the refined model was still higher than the recommended cut-off of .06 (Hu & Bentler, 1999). One of the reasons for this may be due to the simplicity of the model. RMSEA detects the degree to which the tested model differs from the saturated model (the model where all possible paths are tested). Often, RMSEA will suggest poor fit, relative to other indices when the degrees of freedom are small (Gregorich, 1999). Given that only 4 degrees of freedom are present in the final model, it would need to have nearly perfect fit with the data to obtain a recommended RMSEA value of below .06.

Overall, the refined model provided sufficient fit as a measurement model. Model fit could have been improved further by correlating the error terms e9 and e11 (relating to climate of fear and person-environment fit). This procedure would have resulted in absolute fit (rather than sufficient fit), with a non-significant chi-square statistic and perfect fit indices. Correlating error terms is a controversial procedure within the SEM literature, and many argue that the reasoning behind the practice is not sound (Palmer, Graham, Taylor, & Tatterson, 2002). In brief, an error term attached to a manifest variable is simply the 'left over' of what is unrelated to the corresponding latent variable. Therefore, this residual could in fact contain potential relationships with other latent variables which have not been modelled. In essence, correlating the two error terms suggests that an additional (non-modelled) factor could be affecting the way individuals respond to the manifest variables. If this were the case, Palmer *et al.* (2002) argue that the new latent variable should be modelled. This would require an alternative theory and a new set of statistical indices to determine a latent factor which simultaneously influences the perception of climate of fear and person-environment fit. In doing so, such procedures could imply that the theoretical model is being driven by the data and based on the modification indices rather than theoretical insight. Given that the measurement model achieved reasonably sufficient fit without correlating the error terms, it would be arbitrary to add the covariance simply to achieve perfect statistical fit. In essence, correlating error terms should be reserved for situations where no other resolution is possible to achieve sufficient

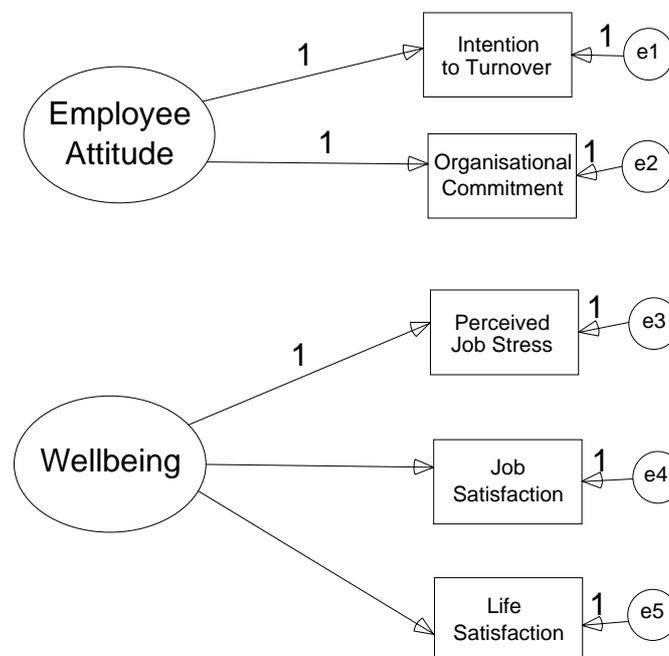
model fit. The goal of the thesis was to obtain sufficient fit based on theory, not absolute fit based on statistical criteria. However, the idea that an alternative model could more adequately explain the relationships between the variables is a topic explored in the next chapter.

### ***Measurement Model 2: Loneliness at Work Scale***

The details of the measurement model (CFA) for the Loneliness at Work Scale were outlined in Chapter Four. To briefly summarise, the two-factor model of the Loneliness at Work Scale provided sufficiently better fit than a single-factor solution. Model fit for the two-factor structure was not perfect, however it was deemed sufficient after refinement procedures failed to provide a better fit with competing model solutions.

### ***Measurement Model 3: Outcomes of Loneliness at Work***

The Outcomes measurement model consists of two latent variables, each with manifest derivatives, and is shown in Figure 6.4.



**Figure 6.4: Original Measurement Model for the Outcomes of Loneliness at Work**

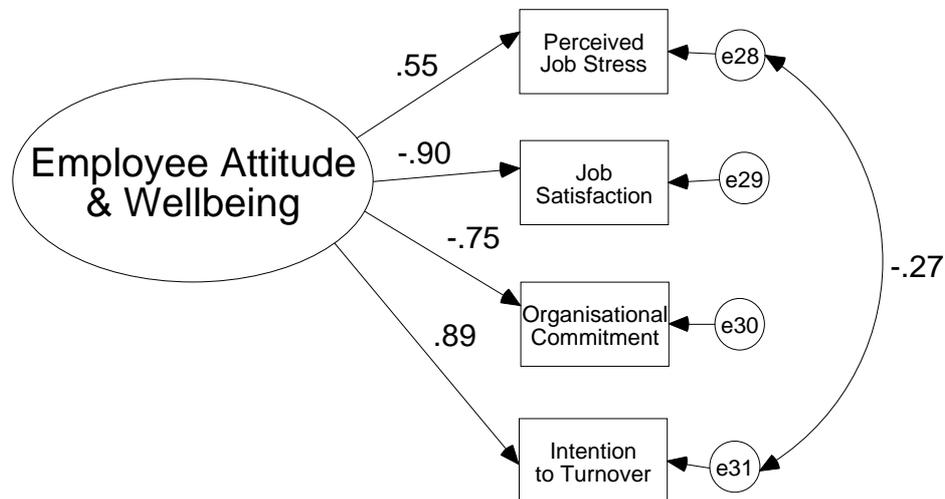
### *Model Refinement*

Similar to the Antecedents measurement model, the Outcomes measurement model faced the same problem of under-identification with the Employee Attitude latent variable. Therefore, both paths from the latent variable to the two manifest variables were constrained to one, in order to meet the requirements for an over-identified model. Despite this procedure, the original measurement model demonstrated markedly poor fit on all fit indices, as indicated in Table 6.4 below.

Given the constraints of obtaining an over-identified model, it was decided to create a single-factor by incorporating all of the manifest variables into one latent factor. On reflection, this is perhaps a more theoretically adequate representation of the variables given the overlapping nature of the constructs. For example, if one was particularly strained because of their work or dissatisfied with their job, they are likely to want to withdraw from their work environment. In fact, previous research (e.g. Hom, Caranikas-Walker, Prussia & Griffeth, 1992) has shown that job satisfaction has a direct relationship with an individual's intention to leave the organisation. Therefore, it may have been arbitrary to separate the constructs into two latent variables, when they are clearly tapping into similar affective responses and withdraw cognitions. When all manifest variables were run as a single-factor model, model fit improved however RMSEA failed to fall within the acceptable range. Consequently, the Life Satisfaction variable was removed from the latent model, due to its poor factor loading (-.26). This resulted in acceptable goodness of fit for the model, except for RMSEA which remained at .12.

When all other attempts to find sufficient fit had failed (including manipulating the original two-factor latent model), the remaining option, according to the modification indices, was to correlate the error terms e1 and e3 (relating to Intention to Turnover and Perceived Job Stress). Improvement was observed in all fit indices, including a significant decrease in RMSEA. By modelling this correlation however, it suggests a further latent variable may be involved and therefore requires cautious interpretation (Palmer, Graham, Taylor, & Tatterson, 2002). However, in order to proceed with a sufficiently fitting model, it was thought justified to model the correlation under these circumstances. Apart from the correlated error terms, all factor loadings were deemed

acceptable according to Comrey and Lee's (1992) criteria, as outlined previously. The final model is shown in Figure 6.5 below.



**Figure 6.5: Final Measurement Model for the Outcomes of Loneliness at Work**

Original and final model fit statistics are displayed in Table 6.4.

**Table 6.4**

*Fit Statistics for the Original and Final Measurement Models for the Outcomes of Loneliness at Work*

Model	Goodness of Fit				Comparative Fit	
	GFI	AGFI	CFI	RMSEA	RMSEA 90% CI	BIC
Original model ( $\chi^2 = 429.93$ ; $df = 6$ )	.78	.45	.45	.44	.41 - .48	482.93
Final Model ( $\chi^2 = 0.39$ , $p = .53$ ; $df = 1$ )	1.00	1.00	1.00	.00	.00 - .12	53.44

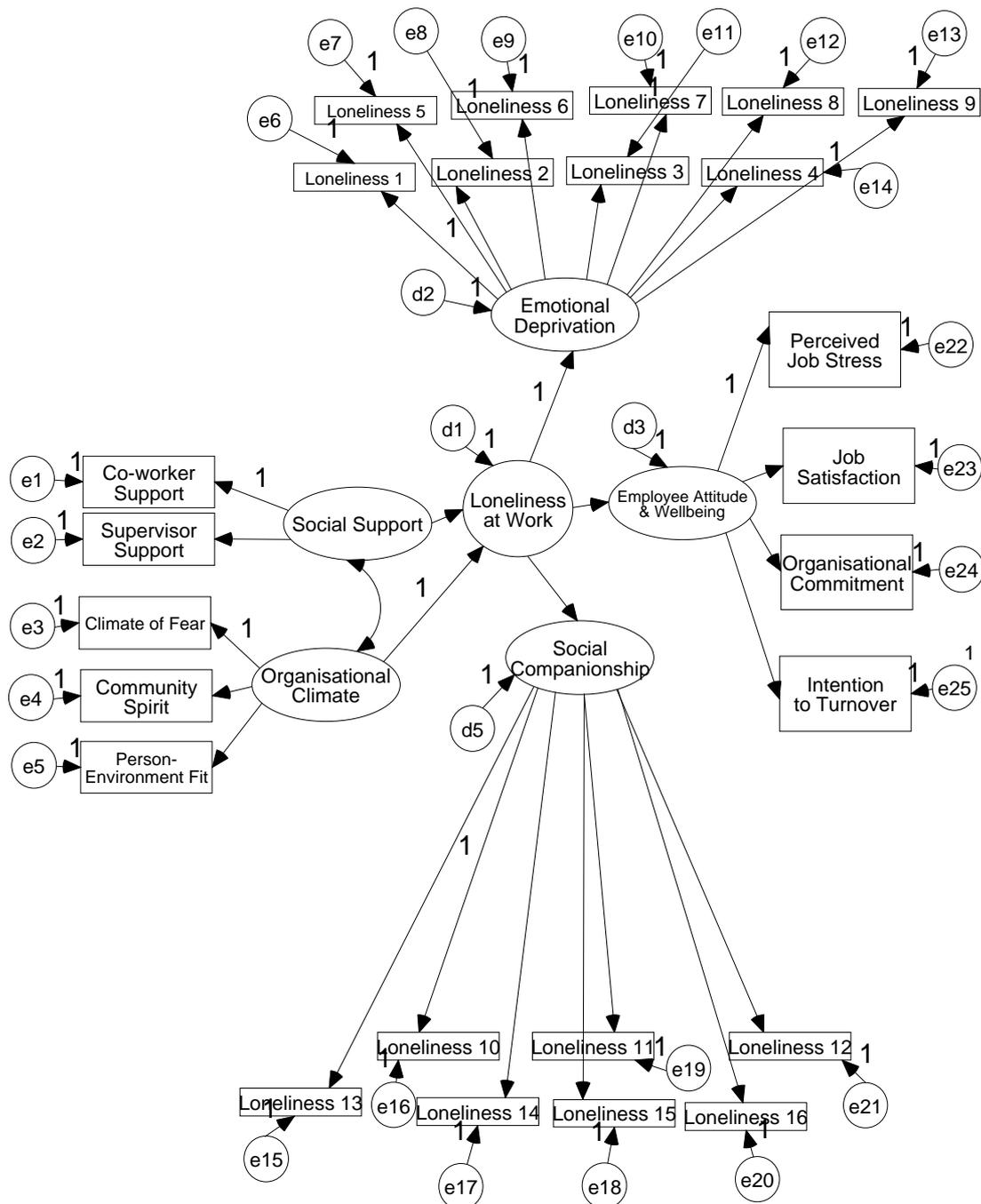
*Note.* GFI = goodness of fit; AGFI = adjusted GFI; CFI = comparative fit index; RMSEA = root mean standard error of approximation; CI = confidence interval; BIC = Bayesian information criterion.

### *Model Comparison*

Comparison between the original and refined model was significant:  $\Delta\chi^2 = 429.54$  ( $\Delta df = 5, p < .001$ ), RMSEA ranges were not overlapping, and the BIC difference was 429.49, notably larger than the 10 point criterion. In essence, the final model represents superior fit than the hypothesised model.

### ***Results: Structural Model***

Having ascertained three measurement models with adequate fit, the next step in the SEM process was to test the structural model for overall goodness of fit. The structural model determines the fit between the latent variables within the model. The original structural model is represented in Figure 6.6 over, and the fit indices are indicated in Table 6.5.



**Figure 6.6: Original Structural Model**

### *Model Refinement*

Initial fit of the overall structural model was noticeably poor, as indicated in Table 6.5 over. Given the lack of overall adequacy of the model, a series of refinements were necessary in order to obtain sufficient fit. It was initially thought that a hierarchical structural model would best represent the theory of loneliness at work, with emotional

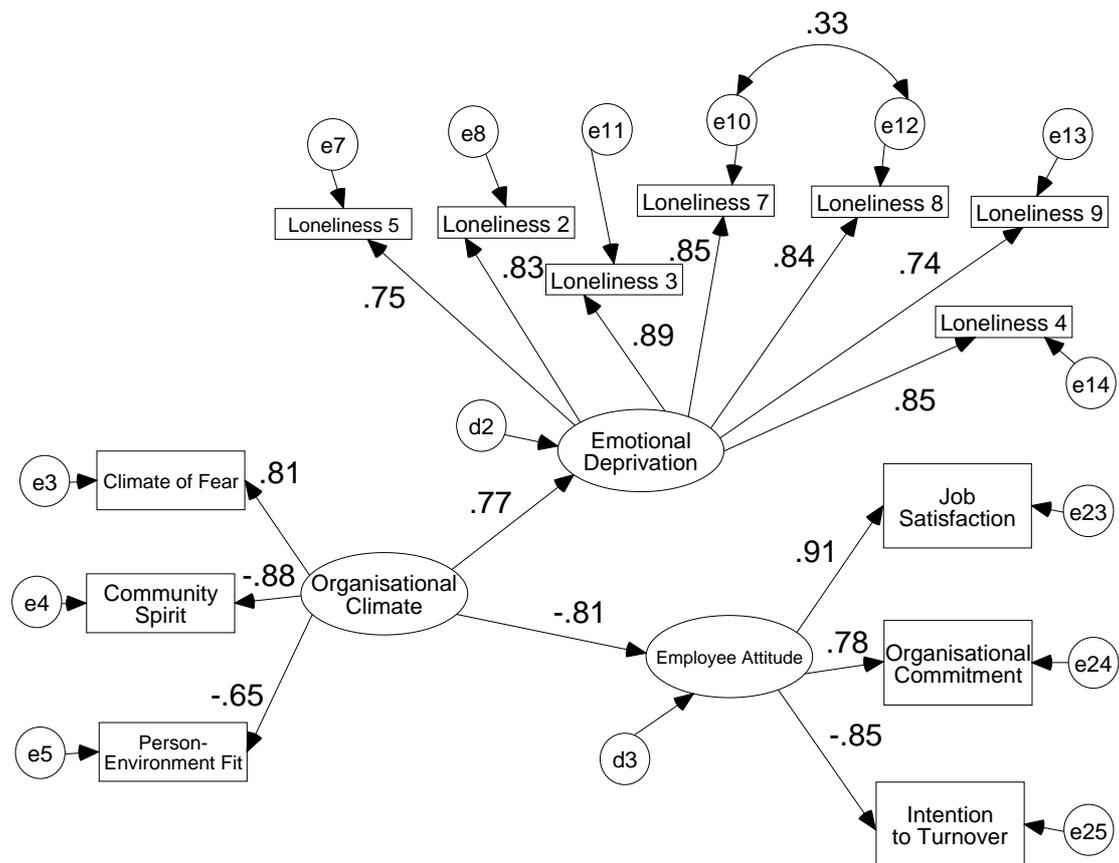
deprivation and social companionship feeding into a common loneliness factor. Because the two loneliness factors were highly correlated (disattenuated correlation of .80), there was indication the two factors may be jointly related to a higher order latent variable. This conception was modelled in the above structural diagram, with loneliness at work acting as the higher order latent variable for emotional deprivation and social companionship. However, as the analysis progressed it was soon realised that this conceptualisation was flawed, largely because the measurement model of the loneliness at work scale had failed to support a hierarchical structure. Consequently, the modelling of a hierarchical latent variable also failed to provide sufficient fit within the overall structural model.

Although modelling a hierarchical latent variable seemed a reasonable avenue to explore, it is somewhat like modelling a single-factor version of the loneliness at work scale, with another related factor performing the same function. As was evidenced in Chapter Four, the single factor model performed poorly as a measurement model, and thus it was not surprising that a model similar to a single factor structure performed equally poorly in the structural model. The hierarchical latent variable was therefore removed from the model, and in doing so necessitated a decision regarding which latent construct best predicted each loneliness factor. Theoretically and intuitively, it was thought that the Organisational Climate latent variable would be related to the Emotional Deprivation factor, while the Social Support latent variable would be related to the Social Companionship factor. It follows that individuals who feel anxious about their work environment and lack a feeling of belonging may feel qualitatively dissatisfied with their relationships (emotional deprivation), while those who have access to social networks and have quality interpersonal relationships may feel quantitatively satisfied with their social relationships (social companionship). Nonetheless, the modified model failed to provide sufficient fit with the data.

The Social Support latent variable performed poorly in the structural model with low factor loadings between the supervisor support factor and the social support latent variable (.47), and between the social support latent variable and the social companionship factor (-.59). More disturbing was that the social companionship factor demonstrated a very weak coefficient leading to the Employee Attitude and Wellbeing latent variable (-.04). In manipulating the model to improve fit, the Social

Support latent variable also demonstrated poor loadings with the Emotional Deprivation factor (-.32). Despite the adequacy of the Social Companionship factor within the two-factor measurement model of the loneliness at work scale, its poor performance within the overall structural model resulted in its removal. Similarly with the Social Support latent variable, due to its poor factor loadings within the structural model, and its relatively low variance compared with the Emotional Climate latent variable, it was also removed. Perceived job stress demonstrated a relatively low factor loading (.42) within the employee attitude and wellbeing latent variable, and was subsequently removed from the structural model. The above deletions were based on model fit statistics and the strength of path coefficients, in accordance with theoretical justification. This resulted in a model comprising of Organisational Climate leading to Emotional Deprivation, which consequently mapped onto Employee Attitude. Due to comparatively poor factor loadings, items one and six of the Emotional Deprivation factor were deleted (factor loadings of .64 and .68 respectively). Despite this attempt, model fit remained mediocre with the path coefficient from Emotional Deprivation to Employee Attitude was low (.51).

In order to achieve adequate model fit, the path leading from the Emotional Climate latent variable was modified to run directly to the Employee Attitude latent variable (as shown in Figure 6.7 below). This runs contrary to the thesis' theory which argues that certain organisational and personal factors influence organisational outcomes, which is mediated by the perception of the quality of interpersonal relationships at work. Conceptually, however, there is reason to believe that factors relating to an organisation's climate could have a direct effect on an employee's attitude toward the organisation, without any mediating effect of the quality of interpersonal relationships. Finally, in an attempt to obtain a model which was marginally sufficient in terms of model-data fit, modification indices suggested that error terms e10 and e12 should be correlated to achieve sufficient model fit. Alternative modifications to the structural model resulted in poorer fit, weaker path coefficients, or illogical theoretical reasoning. Therefore, the final structural model is shown in Figure 6.7 over.



**Figure 6.7: Final Structural Model**

Fit statistics for the original and final structural models are displayed in Table 6.5 below.

**Table 6.5**  
*Fit Statistics for the Original and Final Structural Models*

Model	Goodness of Fit				Comparative Fit	
	GFI	AGFI	CFI	RMSEA	RMSEA 90% CI	BIC
Original SEM ( $\chi^2 = 1121.16, p = .00; df = 270$ )	.79	.75	.87	.09	.088-.099	1445.36
Final SEM ( $\chi^2 = 228.5, p = .00; df = 62$ )	.92	.88	.96	.086	.074-.098	399.39

*Note.* GFI = goodness of fit; AGFI = adjusted GFI; CFI = comparative fit index; RMSEA = root mean standard error of approximation; CI = confidence interval; BIC = Bayesian information criterion.

### *Model Comparison*

Comparison between the original and final model was only partially significant:  $\Delta\chi^2 = 892.66$  ( $\Delta df = 208$ ,  $p < .001$ ), BIC difference 1333.03, however the RMSEA ranges were slightly overlapping. The refined structural model was very close to achieving fit according to the criteria of Hu and Bentler (1999). However, further modifications to the model resulted in an insufficient RMSEA improvement. An RMSEA index above .08 suggests that there are too many paths in the model. However, removing further paths from the model to improve the RMSEA index resulted in a marked decrease in model fit. Therefore, to present a model which retained necessary structure in accordance with theoretical rationale, the final model was deemed sufficient for interpretation despite the RMSEA achieving only mediocre status (Browne & Cudeck, 1993).

### *Path Coefficients*

The standardised path coefficients within the modified structural model were significant and reasonably large, as indicated in Figure 6.7 above. According to criteria from Comrey and Lee (1992), all of the path coefficients were considered ‘excellent’ (above .71), with the exception of the path between Organization Climate and Person-Environment Fit, which was deemed ‘very good’. Organisational Climate was the sole latent predictor of the remaining Loneliness at Work Scale latent factor (Emotional Deprivation), which was defined by Community Spirit (-.88), Climate of Fear (.81), and Person-Environment Fit (-.65). The Emotional Deprivation factor retained seven of its nine original items and was primarily defined by items 3 (.89; “I feel myself withdrawing from the people I work with”), item 4 (.85; “I often feel emotionally distant from the people I work with”), and item 7 (.85; “I often feel isolated when I am with my co-workers”). The Employee Attitude and Wellbeing latent variable retained all but one of its factors and was defined by Job Satisfaction (-.91), Organisational Commitment (.78), and Intention to Turnover (.85). Finally, as indicated above, the relationship between the latent factors was contrary to expectation. As hypothesised, Organisation Climate significantly predicted Emotional Deprivation with a path coefficient of .77. However, Emotional Deprivation failed to

predict Employee Attitude and was instead directly predicted by Organization Climate (.81).

### *Summary*

In general terms, SEM is used to test whether the data obtained fit with a proposed theoretical model. As such, the theoretical model tested in this thesis received only partial support with the given data. The proposed model failed to support the mediated relationship between personal and organisational characteristics, loneliness at work, and various outcome measures. Although the notion of the hypothesised relationships was conceptually and intuitively appealing, the proposed relationships were not completely supported by the data. The following chapter discusses the implications of these results and other issues raised in the study.

## CHAPTER SEVEN

### Discussion and Conclusions

This thesis set out to study loneliness in the workplace. In particular, the research explored the relationship between loneliness at work and various personal and organisational factors. The link between the work environment and the development of loneliness has up until now, been an unexplored area of psychological research. To help guide the thesis, several research objectives were formulated which formed the basis of the study. The first of these objectives involved developing a conceptual understanding and definition of loneliness in the workplace through canvassing existing literature and research. The second objective involved establishing a psychometrically acceptable scale to measure loneliness at work. The final section of the thesis was concerned with developing a theoretical model for loneliness at work based on relevant literature, and testing this model for degree of fit using structural equation modelling.

In general, the results of the research suggest that the 16-item Loneliness at Work Scale demonstrates good psychometric properties, with two correlated factors emerging from separate exploratory and confirmatory factor analyses. The factors represent the emotional deprivation and lack of social companionship aspects of loneliness at work. However, the results only provide limited support for the Loneliness at Work Model. The hypothesised relationship between personal and organisational characteristics, loneliness at work, and various outcome measures was not supported. Nevertheless, the results suggest that organisational climate serves to simultaneously predict the emotional deprivation factor of loneliness and employee attitudes.

The purpose of this chapter is to analyse and discuss the research findings, with a particular focus on the methodology used in the research, the development and results of the Loneliness at Work Scale, and the analysis of the Loneliness at Work Model. The underlying theory of loneliness at work, and its antecedent conditions and probable consequences, will also be discussed. Accordingly, this chapter weighs up the strengths and limitations of the research, and discusses the implications of the

results in terms of theoretical significance and practical considerations. Directions for future research will be discussed throughout the chapter.

### ***Methodological Approach***

When research results fail to pan out as expected, several questions naturally arise. One of these relates to the methodology used in the research, including the way the constructs were measured. This section will briefly discuss the characteristics of the respondents, critique the measurement of the research variables (not including the loneliness at work scale which will be discussed in the following section), and review the chosen methodology for the study.

#### *The Sample*

The current sample represented an educated group of employees in predominately white-collar professions from various organisations and industries. Loneliness was found to be associated with the amount of time the respondent spent working alone and their education status, with higher qualifications relating to higher levels of loneliness at work. Although speculation regarding these results could be interesting, in that we could conclude ‘people who work alone experience greater loneliness’, or ‘educated employees tend to suffer from loneliness at work’, caution needs to be exercised when analysing such results. As indicated in Chapter Two of this thesis, one of the precipitating events for feeling lonely in general is social isolation (e.g. Ernst & Cacioppo, 1998). Therefore, perhaps it is not surprising to discover that individuals who work alone, without any form of social interaction for significant periods of time, experience a greater discrepancy in their actual and desired interpersonal relationships at work. However, there is potentially more to this result than a simple cause and effect relationship. For example, individuals who work alone may do so out of choice, perhaps as a result of their social anxiety when interacting with others. Therefore, it is conceivable that social anxiety, and the need to withdraw from social company, may perpetuate loneliness rather than the objective situation of working alone.

Similarly, the association between loneliness at work and education status needs to be addressed cautiously for a number of reasons. Firstly, the sample represented mostly

university-educated respondents, perhaps due to the internet-based methodology where the user is typically a white-collar employee with a tertiary education (Wilson, 2000). Such response-bias prohibits, or at least lessens the accuracy of, direct comparison between educated and non-educated respondents. Secondly, it may not be the level of education which creates loneliness per se, but rather the features of the job and the characteristics of the individual performing the job which tends to coincide with higher levels of education. To verify this claim, further research could determine whether discriminating results are obtained in more traditional blue-collar jobs. Such research could help ascertain whether reports of loneliness were directly influenced by the nature of the role, the level of education, or perhaps moderated by the flow on effect of education status determining rank within an organisation, which could lead to isolation and loneliness. Moreover, future research could study loneliness within a single organisation, which may help to draw more specific conclusions regarding organisational structure and work-related loneliness. This possibility will be discussed in subsequent sections of the chapter.

Interestingly, there was no relationship between loneliness and age, gender, marital status, country of residence, employment status, tenure, physical layout of office, or the size of the organisation. This is not to conclusively say that no such relationship exists, merely that no empirical associations were found in the current research. What can be concluded from these results however is that in a diverse sample of white-collar employees demographic factors do not seem to be related to loneliness at work. From this level of analysis, it would seem that loneliness is affected more by the situation, such as whether or not the individual is working alone, rather than being dictated by one's general circumstances, such as whether the individual is married or the size of the organisation they work for. This result may also indicate that the construct measured in the loneliness at work scale tends to be related more with work-related factors than personal or demographic characteristics. This provides partial evidence for the construct validity of the work-related nature of the loneliness scale. However, further research could help clarify whether this result is sample-specific or more widely applicable to an additional set of respondents. The issue of construct validity will be discussed in a subsequent section of the chapter.

The group of respondents was largely representative of white-collared employees. While the respondents' occupations ranged from low-skilled work, such as check-out operating, to highly trained work related to a professional career, the majority of respondents held occupations which were skilled or professional in nature, and thus were not entirely representative of the population as a whole. Therefore, it is not altogether surprising that when evaluating the reported degree of loneliness with the respondents' job title, no salient pattern emerged. Those individuals who reported no, or very little, loneliness could not be differentiated from those who reported very high levels of loneliness, in terms of job title. Again, it would be inaccurate to conclude that the type of job one holds is unrelated to the development of work-related loneliness. More poignantly, this result may represent the restricted range of occupations within the sample group, which were predominately professional and therefore degrees of loneliness could not be differentiated at the job title level.

It is apparent from the data that few respondents held senior management positions. In fact, the majority of respondents (60%) were individual contributors to their employing organisation. Moreover, those who held supervisory positions were predominately responsible for only one or two employees. Given this, it is likely that there were too few respondents at the 'top' end of the organisation to enable direct comparison with those in non-supervisory positions. Again, the distinction between the 'top' position and the 'bottom' position within the sample was restricted given the homogeneity of the sample. However, job title alone provides insufficient information regarding the characteristics of the respondent's role and their associated seniority which may, or may not, create loneliness. As such, it is a deficient measure of the job's characteristics. This chapter now turns to a discussion of the measures used in the research.

### *Measurement*

The research employed fourteen previously established scales to measure the variables of interest. These measures were chosen due to their fidelity with the construct, their brevity, and their psychometric qualities. Overall, the established measures continued to demonstrate good internal consistency in the current research, and were reasonably clear and straightforward to respond to, as evidenced by the low

levels of missing data within each variable. Difficulties arose however when measuring the objective characteristics of the respondent's role, in terms of seniority within the organisation and role responsibility.

As with previous research which relates job title or hierarchical position with scores on loneliness (e.g. Bell, Roloff, Van Camp & Karol, 1990; Reinking and Bell, 1991) the present research failed to accurately measure the nature of the respondent's role within their organisation. In particular, the questions regarding job title, the size of the organisation, and supervisory responsibility did not capture the essence of the characteristics associated with the respondent's position and their employing organisation. Effectively, these questions were included to ascertain the seniority of the respondent within the organisation, so hypotheses relating objective job characteristics with loneliness at work could be deciphered. However, the characteristics of the 'top' and 'bottom' positions within an organisation are difficult to isolate in a cross-sectional self-report survey. Asking respondents to indicate their job title and the number of employees they are responsible for, while being an objective indicator of a management position, fails to encapsulate the perceived burden or responsibility of such management positions. For example, chief executive officers may actively manage very few people, whereas middle managers may be responsible, directly or otherwise, for several hundred employees. Nevertheless, the pressure of making judgements regarding very complex or poorly defined issues, and the accountability for decisions where there are no right or wrong answers can fall heavily on senior management, whereas middle managers may avoid this level of public accountability. It may therefore be more important to capture the characteristics of each job and each organisation specifically, rather than inferring that a single indicator can determine the individual's work-related responsibilities.

A related issue concerns the individual's preference for working conditions, such as the respondent's desire to work alone, their ideal office environment, or their preference for supervising others. The research questionnaire asked individuals to provide objective information regarding the physical work environment. However, the respondent's preference for the provision of such conditions was overlooked in the series of questions. Because loneliness is viewed as the discrepancy between an individual's actual and desired interpersonal relationships, perhaps it is the

satisfaction of the working conditions, or the congruence between the employee's preference and their actual work environment which is of consequence to psychological wellbeing. Although this is not a major limiting factor to the current research, as it may have been measured by variables such as organisational fit, future research could incorporate work environment preferences when studying loneliness at work.

In sum, the current research failed to gather sufficient information regarding the characteristics of the job and the employing organisation to determine the relationship between work-related loneliness and position or organisation type. Further research could examine these associations within one large organisation, which may help clarify the relationship between seniority and the experience of loneliness at work. It may also be prudent to conduct research specifically on employee loneliness and management related loneliness. In the current study, it was assumed that the antecedents and consequences of loneliness would be equivalent for both managers and employees. Perhaps future research could facilitate the identification of the differing social dynamics for the roles of managers and employees, and therefore explore the various interrelationships between organisational or role characteristics, loneliness, and various outcomes at different occupational levels. Such queries open up a wide range of future conceptual and empirical research possibilities.

In hindsight, it may have been advantageous to include a measure of negative affectivity in the main study to further explore the various relationships between the research variables. Negative affectivity is an individual's predisposition to view and evaluate situations, people and events negatively (Watson & Clark, 1984). Research has indicated that negative affectivity is an important individual difference variable that can explain variance in respondents' reported experiences of attitudinal and affective variables (e.g. Chen & Spector, 1991). Given this, negative affectivity may have been a contributing factor towards how an individual views their interpersonal relationships in the workplace. For example, it may be that negative affectivity, as an individual predisposition, influences the perception of situational variables, such as organisational climate or lack of social support, and therefore indirectly contributes to an employee's feelings of loneliness. However, Costa and McCrae (1990) indicate that the constructs of neuroticism and trait-negative affect are reasonably comparable,

and at a basic level relate to the negative way individuals perceive themselves and the world. Given that the current research included a measure of neuroticism, the confounding problem of an unmeasured third variable relating to a negative outlook on life may have partially been mitigated. Because loneliness is a deeply personal and subjective experience, there are potentially many ‘hidden factors’ in the study of the phenomenon. As such, research on loneliness has the potential to overlook a multitude of unmeasured third variables, relating primarily to an individual’s predisposition. These alternative explanations will be explored in subsequent sections of this chapter.

### *Methodology*

One of the criticisms which could be levelled at this research is the reliance on a cross sectional, single-point data collection methodology. In other words, all of the research variables were obtained through one online survey, rather than gathered from several sources or over several time periods. A related limitation to this study, which is also endemic to much of organisational psychology research (Sackett & Larson, 1990), is the sole reliance on self-report data. Self-report methods, particularly as applied to cross-sectional research designs, have been criticised for the potential of contamination due to common method variance, and ‘percept-percept’ inflation. Common method variance is a situation whereby some of the observed variance between the research variables can be attributed to the use of a common measurement technique rather than due to true construct relationships (Spector, 1992). Most researchers agree that common method variance is a potential problem in behavioural research, particularly in survey research where all the variables are collected in a cross-sectional manner from the same respondents (e.g. Cook & Campbell, 1979; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, the criticisms of self-report methodologies may not be as serious as they are often depicted as. A study by Crampton and Wagner (1994) examined ‘percept-percept’ inflation using 42,934 correlations published in 581 journal articles. The authors concluded that their findings “challenge the validity of general condemnations of self-report methods, suggesting instead that domain-specific investigations are required to determine which areas of research are especially susceptible to percept-percept effects” (p. 67).

There are numerous procedural remedies to counter common method variance associated with cross-sectional designs, such as temporal separation of the measures, ensuring respondent anonymity, and improving scale items. The most common strategy to reduce problems associated with the use of self-report data is to collect data from multiple sources (supervisors, co-workers, personnel files) and employ multiple methodologies, such as behavioural observations for the constructs of interest (Podsakoff *et al.*, 2003). Although triangulation of the data might be a solution for many organisational studies, it does have potential limitations with regards to research on loneliness. For example, the information gained from behavioural observations or co-worker reports may be misleading when the construct of interest is related to an individual's perception or appraisal of work-related factors. Furthermore, asking individuals to discuss loneliness is perhaps more difficult than say, ostracism or other psychological constructs which can potentially be blamed or externalised to others. In terms of perception, loneliness tends to imply the 'strength' of an individual's social disposition. Therefore the use of an anonymous research questionnaire which did not refer to loneliness may have helped to reduce methodological bias.

As indicated in Chapters Two and Four of this thesis, the current research was primarily concerned with an individual's judgement about his or her work environment, and their appraisal of that context in relation to the quality of interpersonal relationships at work. Given this, common method variance was controlled through statistical remedies rather than methodological procedures. Structural equation modelling techniques, where the effects of measurement error are controlled for, were used in the current research. Moreover, the wording of the loneliness items and the design of the questionnaire were carefully considered prior to survey construction. In general, if research measures have been carefully developed and constructed they should be resistant to common method variance (Spector, 1994).

In thinking about loneliness, there are complex and dynamic processes involving interactions among intrapersonal, interpersonal, and environmental factors which are not adequately captured in cross-sectional self-report research, and in fact are quite difficult to evaluate even longitudinally. Many studies using cross-sectional methodologies often report the limitations of the design when discussing the weight of

their conclusions, and recommend the collection of longitudinal data. However, while it is true that a cross-sectional survey design cannot assess causal hypotheses, longitudinal studies which simply measure constructs over time with no manipulation of variables cannot establish causality. In terms of methodology, this research could be extended with the addition of qualitative data, rather than longitudinal data. This way greater depth could be sought regarding the dispositional, intrapersonal, interpersonal, and environmental factors which contribute towards loneliness in the workplace. Consideration regarding the nature of the sample would be required, as would the response format (interviews, diary study) and the content and context of the research questions. Given that the sensitivity of the research topic could adequately be managed, there is potential to gather rich data using qualitative methods.

### *The Loneliness at Work Scale*

#### *Factor Structure*

As indicated in Table 4.1, exploratory factor analysis revealed that the 16 loneliness at work scale items extracted into two correlated factors. The items loaded highly onto their respective factor, with minimal cross-loadings. The decision to retain the items within the scale for the subsequent confirmatory factor analysis was based on the statistical evidence of the initial factor structure and because the items within each factor meaningfully related to one another within each factor. Confirmatory factor analysis suggested the data best fit a two-factor model over a single-factor structure (Table 4.2). In fact, the only structure which gave any theoretical and psychometric promise of a replicable factor solution was the two-factor (16-item) scale. The two factors consist of both positively and negatively worded items, and clearly represent items relating to emotional deprivation (factor one) and social companionship (factor 2) at work. The scale emerged with a high alpha reliability for both studies. The process for developing and refining the scale was guided by a number of authorities on psychometric testing (e.g. Anastasi, 1976; Kline, 2000), and was modified after several iterative steps, as detailed in Chapter Four.

The two-factor model provides further support for the previous research and literature presented in Chapter Four, which suggest a distinction between the emotional and

social aspects of loneliness (e.g. Rubenstein & Shaver, 1982; Russell, Cutrona, Rose & Yurko, 1984; DiTommaso & Spinner, 1993, 1997). The research results also support the theoretical distinction between emotional isolation and social isolation made by Weiss (1973) and the empirical findings of van Baarsen, Snijders, Smilt and van Duijn (2001). Given the results of the current research, there is reasonable preliminary evidence to suggest that the emotional-social distinction is experientially different and empirically distinct. As such, it appears that both the perceived quantitative and qualitative aspects of interpersonal relationships seem to play a role in the development of loneliness at work. Realistically, there are situations where differentiating between the emotional and social aspects of work adds to the understanding of how loneliness develops from within the workplace. This differentiation was subsequently represented in the loneliness at work model. The results of the structural equation modelling, which will be discussed shortly, provided partial support for the differing predictors of the emotional and social aspects of loneliness at work. Nonetheless, while these results add to our understanding of the dimensionality and nature of loneliness at work, they do however raise a number of measurement issues.

The main issue concerns the dimensionality of the scale and the possibility of a method artefact. The relatively high coefficient alpha for the scale could suggest a unidimensional scale with two factors emerging as methodological artefacts. Although each of the two factors consists of positively and negatively worded items, the majority of the negatively worded items load on the first factor, while the majority of the positively worded items load on the second factor. Arguably therefore, the scale may be factoring the items according to item wording, rather than construct differentiation. Moreover, given the substantial correlation between the two factors ( $r = .80$ , disattenuated path coefficient corrected for measurement error), one may question the value of measuring two separate aspects of loneliness. However, given the superior fit of the hypothesised two-factor model in the confirmatory factor analysis, and the fact that the positive and negative items are not merely antonyms of one another, there is support for the existence of two conceptually differentiated constructs. Moreover, the items within each factor are theoretically relevant to one another, providing partial support for the construct validity of the two factors.

In order to determine whether the factors are in fact conceptually distinct however, various measures relating to social companionship, such as the opportunity and prevalence of friendship at work (Nielsen, Jex & Adams, 2000), and emotional deprivation, such as work-related ostracism (Williams, 2002), could be investigated in relation to each factor. In other words, future studies could explore whether measuring two dimensions of loneliness is actually useful, which would involve developing separate nomological networks for the two dimensions. At an item level, this process could also help ascertain which items within the scale are more representative of each factor. During the validation process, future research could explore the relationship between the two factors and negative and positive affect. It may be that a relationship exists between the positive items and positive affect and the negative items with negative affect, indicating perhaps that the factor structure relates to positive or negative item wording, rather than actual construct differences. However, one could also argue that the negative features of loneliness and the positive qualities of social companionship would be conceptually related to negative and positive affect respectively, rather than simply demonstrating an empirical relationship with item wording. It seems logical therefore, that both theoretical cohesion of the items within the two factors and a consideration of item wording should be taken into account when determining the conceptual nature of the factor structure.

In reality however, data from one sampled population is insufficient evidence for demonstrating a robust factor solution or construct validity. Walkey and McCormick (1985) argue that the usefulness of any scale is limited by the extent to which the factors, and their associated subscales, are based upon replicable characteristics of the scale itself rather than the idiosyncratic characteristics of the responding group. As such, the replicability of any factor structure should be examined with several populations before any conclusions are drawn regarding construct validity. While the use of the scale in the current research was appropriate for exploratory investigation, further analysis of the relationship between organisational factors and loneliness at work should firstly concentrate on replicating the scale's psychometric properties. While it is unrealistic to guarantee that the results from this study will generalise across all groups of employees, there is sufficient evidence in the current study to confidently develop and advance the structure and validity of the Loneliness at Work Scale. Ultimately of course, the reliability and validity of the measure, and its

associated factors, depends upon its ability to thoughtfully and carefully elucidate the construct of loneliness at work. Needless to say, the issue of replication and construct validity requires further substantiation with additional research.

### *State or Trait Measurement*

One of the issues raised in the loneliness literature is whether loneliness is a trait or a state. As reviewed in Chapter Two of this thesis, the experience of loneliness differs with respect to the duration of the feelings. As such, loneliness can be a short-lived, fleeting experience lasting only as long as the person needs to adapt into the social environment. Conversely, loneliness can resemble a personality trait, persisting over time and across different social contexts. In terms of psychometric scale development, it was necessary to create the scale items so they represent either state qualities, or trait characteristics. When the scale items were developed, it was initially thought they would represent state loneliness, rather than dispositional qualities. However, temporal stability of the scale items suggest otherwise.

The test-retest reliability for the total scale was .83 and .80 for each factor. Expectations regarding high test-retest reliability coefficients require the assumption that loneliness is an enduring phenomenon rather than a short-term fleeting experience. In other words, the test-retest correlation of .83 suggests that the measure of loneliness has a substantial 'trait-like' component rather than being 'state-like' (Marangoni & Ickes, 1989). If in fact the scale was measuring state loneliness, the test-retest over time would be small, say less than .50. Shaver, Furman and Buhrmester (1985) reported test-retest reliabilities over a two month period for their trait-state measure of loneliness. Test-retest correlations for trait loneliness varied between .77 and .83, whereas state loneliness correlations varied between .29 and .64. Further, Spielberger (1983) reported test-retest correlations of the State-Trait Anxiety Inventory over three time periods based on a sample of college students. The correlations varied between .73 to .88 for their trait anxiety measure and .16 to .54 for their state anxiety measure.

Employing the above figures as a benchmark for the current study, the loneliness at work scale seems to primarily measure enduring feelings of loneliness. That is, the

scale items, according to this reasoning, tend to measure dispositional loneliness rather than short-term transient loneliness. It would seem therefore that the instructions to the respondents (“below is a list of statements concerning the way you may have been feeling over the past month”) were not adequate in themselves to denote state loneliness. More relevantly, the items are perhaps indicative of dispositional qualities over a greater length of time, and thus reflect trait loneliness. This conclusion does however warrant further research. To elucidate this issue, further research could triangulate the scale items with various measures known to tap into state and trait qualities. Given what has been identified in the current research, it would be expected that the loneliness at work scale items would be associated with trait-like phenomena, more so than short-term states, such as mood or state anxiety.

#### *Criterion-Related Validity*

The correlations between the loneliness scale and the research variables provide partial evidence for criterion-related validity. Ideally under optimal scale development conditions (Kline, 2000), the loneliness at work scale should be compared with other scales measuring the same, or a very similar construct. However, as indicated in Chapter Four of this thesis, there are no published or well-validated measures of loneliness at work. Thus, the research variables measured in the main study were used to gauge the criterion-related validity of the loneliness at work scale, within a theoretically relevant nomological network partially established in Chapter Five.

A nomological network is a set of laws relating the theoretical constructs of interest within a conceptual system. The nomological network, in itself does not directly determine how we define constructs (in this case loneliness), as constructs can be defined without reference to other theoretical attributes (Boorsboom, Mellenbergh & van Heerden, 2004). However, developing a theoretical network of relationships does provide some indication of the relationship loneliness has with other variables which would be expected to have some degree of association. Boorsboom *et al.* (2004) have recently argued that tables of correlations between scores and other psychological measures provide little more than circumstantial evidence for construct validity. Given this reasoning, there can be no definitive conclusion in research concerning the validity of a newly developed scale. Hence, conclusions, generalisations, and

speculations regarding the validity of the scale must necessarily be restrained. Therefore, by determining the relationship between loneliness at work and other psychological constructs, no conclusive evidence is being offered regarding the validity of the construct. Merely that the scale appears to be related to various psychological constructs (convergent validity), more so than it does to other less related constructs (discriminant validity).

Based on previously reviewed research in Chapter Five, it was expected that scores on the loneliness at work scale would be negatively related to co-worker support, supervisor support, organisational fit, job satisfaction, organisational commitment, and community spirit. Hence, it was also anticipated that scores on the scale would be positively related to workload, work stress, fear in the workplace, and intention to turnover. However, as the scale was not intended to measure stress, satisfaction, commitment, support, climate or turnover it should not relate too highly with these constructs. While it was recognised that personal characteristics would influence work-related loneliness, because the scale was developed to measure the quality of workplace relationships, it was expected that scores on the scale would bear a less substantial relationship with non-work variables such as extraversion, emotional stability, competitive attitude, life satisfaction and non-work support. As shown in Table 6.2 in Chapter Six, the expected direction and strengths of correlations were supported. As such, the loneliness at work scale seems to be more closely aligned with work-related variables, particularly co-worker support, climate of fear, and community spirit at work, than it does to non-work variables, such as personal characteristics, non-work support, and life satisfaction.

Arguably, the correlations between the loneliness at work scale and stress, support, and emotional climate are reasonably high. These results raise the issue of whether the correlations are due to a genuine shared symptomatology, or whether they simply reflect a lack of discriminant validity between the measures. Moreover, one could be tempted to conclude that these constructs merely reflect different aspects of the same underlying psychological process. Realistically, it is difficult to know from an experiential perspective whether distress and loneliness, for example, are truly distinguishable constructs. As such, one would expect an empirical overlap of the constructs, due to the presence of loneliness being a considerable stressor in one's

life. Nonetheless, the correlations between loneliness and the various measures of social support and organisational climate range from .48 to .69. Thus, the corresponding proportion of variance shared by these constructs is approximately 23% to 48%. This leaves a reasonable proportion of the variance in each measure unexplained by the other, leaving a certain degree of uniqueness within each construct.

In terms of discriminant validity, it was interesting to note that the presence of a spouse or de facto partner was not related to loneliness at work. Previous research (e.g. van Baarsen, Snijders, Smit & van Duijn, 2001; Weiss, 1982) indicates that unmarried respondents are more likely to experience general loneliness than married respondents. Research has also shown that one of the best predictors of loneliness is marital status (Ernst & Cacioppo, 1998). Such a finding is anticipated given that the presence of a spouse often depicts an intimate or close connection with another individual. In the present research, marital status was not associated with loneliness at work. Moreover, lack of non-work support was only slightly correlated with loneliness at work ( $r = -.13$ ). This provides partial evidence for the discriminant validity of the scale, in that the 16 items are measuring something other than an intimate connection or non-work relational support.

The degree of support received from non-work providers for work-related issues is a topical subject in social and organisational research (Lim, 1996). Interestingly, previous research (Lim, 1996; Lindorff, 2001) has indicated that non-work relationships are the most common providers of support for non-work problems. Additionally, Lindorff's (2001) research also demonstrates that support from work colleagues is appropriate for specific work problems. While the presence of a supportive spouse can alleviate a certain degree of overall anxiety with work-related issues, the provision of spousal support may be of limited help during problematic periods at work. It seems therefore, that in the event of a work-related problem the support provided by family and friends is of some use, but nevertheless falls short in actually managing the work-related problem. As such, different types of relationships serve different functions (de Jong-Gierveld & van Tilburg, 1987). While the world of work is integral to our lives generally, there remains a certain degree of separation between work and 'life'. The provision and domains of social support and the effect

they have on loneliness could be explored further using qualitative research methodologies.

At first glance, the issue of whether there is a differentiation between loneliness at work and loneliness in general seems questionable. In other words, one could plausibly argue that loneliness experienced in the workplace and loneliness experienced outside of work reflect the same basic social and emotional processes. Therefore, one could also claim that the experiential nature of loneliness is similar irrespective of the social environment. As such, there could be evidence for a mutual influence, in that, loneliness at work contributes to loneliness in general, and individuals who report high levels of general loneliness may concurrently feel lonely at work. While this may be the case, the purpose of the research was to measure and identify the interrelationships of loneliness in the workplace, not simply loneliness in general. Overall, the relationship between various psychological variables and loneliness has previously been established, as detailed in Chapter Two. Therefore, the objective of the current research was to explore the concept of work-related loneliness, as a differentiated construct from everyday loneliness. Prior to data collection, a decision was made to omit any measure of general loneliness. At the time, it was thought that the inclusion of a general loneliness scale, such as the UCLA Loneliness Scale (Russell, 1996), may have influenced the responses to the loneliness at work scale. As such, respondents may have failed to conceptually differentiate between loneliness outside of work and loneliness at work, which may have arbitrarily inflated the correlation between the two scales.

As part of further validation studies employing the loneliness at work scale, the inclusion of a general loneliness scale may help to determine the construct validity of the scale. The current research has been successful in relating the loneliness at work scale with other work-related constructs. Perhaps future validation studies could further investigate the psychology of the scale by ensuring that the items are in fact related to the psychological construct of loneliness, as well as workplace factors. This process will help ensure that the scale is measuring 'loneliness' in relation to 'work'. However, careful consideration, regarding the methodology used to assess the validity of the scale, would be required to ensure the respondents were differentiating between their experiences at work and their loneliness in everyday life. In reality, it may be

conceptually arbitrary to separate the two forms of loneliness. However, given the reasoning outlined in this thesis, there is sufficient evidence to suggest that the two constructs are differentiated in nature. Nonetheless, it would be prudent to design a validation study with the implementation of a time-delay between administering a general measure of loneliness and the loneliness at work scale. Such procedures may help to overcome potential measurement biases.

This section has discussed the factor structure, the reliability, and the validity of the loneliness at work scale. In terms of the refinement of the scale, research could continue to examine the construct validity of the measure. It would be advantageous to explore the relationship of the scale with other work and non-work factors, and to establish its discriminating power between occupational groups. Through such refinement and exploration, the construct validity of the overall scale, along with its subscales could be enhanced. Developing a conceptualisation and measure of loneliness at work was an important step in aiding an understanding of the phenomenon, and providing a platform for the development of the loneliness at work model.

### ***The Loneliness at Work Model***

#### *Overview*

The hypothesised loneliness at work model specified a linear arrangement of antecedent conditions affecting loneliness at work, which in turn affected employee attitude and wellbeing. It was hypothesised that personal characteristics (made up of extraversion, emotional stability and competitive attitude), social support (from co-workers, supervisor, and non-work sources), job characteristics (workload, span of control), and emotional climate (represented by a climate of fear, community spirit, and organisational fit) were thought to collectively influence the degree of loneliness experienced in the workplace. Loneliness at work, which was represented by emotional deprivation and a lack of social companionship at work, was also hypothesised to affect employee wellbeing (comprising perceived job stress, job satisfaction, and life satisfaction) and employee attitude (intention to turnover and organisational commitment). The hypothesised relationships between the research

variables were based on literature, previous empirical research and anecdotal evidence.

As detailed in Chapter Six, several adjustments to the measurement and structural models were required in order to demonstrate sufficient fit and to enable interpretation of the path coefficients. Given the desire to maintain theoretical coherence with the hypothesised model, perfect statistical fit was considered secondary to psychological interpretability. This approach is consistent with the behavioural sciences literature, where researchers are required to look at the psychological plausibility of the relationships, rather than statistical relationships alone (e.g. Zumbo & Rupp, 2004). Model refinement resulted in an overall structural model whereby emotional climate influenced both the emotional deprivation factor of loneliness at work (made up of seven items), and employee wellbeing and attitude, a subsequently merged latent variable, comprising job satisfaction, organisational commitment, and intention to turnover. This chapter will now turn to a discussion of these results.

#### *Interpretation and Implications of the Model Results*

The current research has provided initial evidence that there might be an important relationship between organisational climate, loneliness, and various outcomes related to individual and organisational attitude. Overall, the present data provide limited evidence for the view that personal characteristics, social support, and job-related factors predict loneliness at work. Moreover, contrary to theoretical expectation, there was no structural relationship between loneliness at work and perceived job stress. Technically, the model failed to demonstrate a sufficient statistical relationship which would allow for psychological interpretation. However, outright rejection of the loneliness at work model may be premature.

The results raise the issue of the relationship between the manifest variables as indicators of the associated latent variable. One reason why the model failed to demonstrate a sufficient structural pattern was due to the variables not clustering together in a coherent fashion in the measurement models. This indicates that the factors comprising the personal characteristics latent variable, along with aspects of the social support and the job characteristics variables did not share sufficient

variance to tap into a unified latent variable. Therefore, while each manifest derivative may be predictive of loneliness at work, it would seem that the latent variables have been grouped into conceptually incongruent clusters. For example, with hindsight it is not surprising the job characteristics latent variable failed to demonstrate statistical cohesion. Conceptually, workload and span of control may independently relate to the development of loneliness at work, however collectively they have little commonality. Those who are in a supervisory role may have a greater workload due to employee administration and responsibility. At the same time, some managers may report less workload due to subordinate delegation. Therefore, conceptually the two factors may not be causally related. Similarly with the personal characteristics latent variable, which also demonstrated poor statistical cohesion, there seems to be statistical independence between extraversion, emotional stability and competitive attitude.

As indicated in Chapter Five, latent variables cannot fully capture the construct of interest using manifest derivatives. However, with hindsight and in future, careful consideration should be given both to the relationship between the latent variables in the structural model and the conceptual cohesion between the similarity of the manifest variables, and their causal association with their corresponding latent variable. As such, evidence for a relationship between the constructs may emerge with more refined latent variables.

Although it is difficult to generalise or speculate on the results of the model given the methodological and analytical limitations previously discussed, it is of note that the sole surviving latent variable tapping into the emotional deprivation factor of loneliness is predominately an environmental predictor of loneliness. As outlined in Chapter Two, past research on loneliness has focussed almost exclusively on personality factors as causal mechanisms for the development of loneliness. While it would be inaccurate to conclude that personal characteristics, social support and job characteristics do not play a part in the development of work-related loneliness, the final results are nonetheless interesting, and suggest that environmental factors do feature in the development of work-related loneliness.

The emotional climate variable comprised climate of fear, community spirit and organisational fit. These factors statistically cohered together, and demonstrated a

strong relationship to the emotional deprivation factor (.77) and the employee attitude and wellbeing latent variable (-.81). In many respects, the emotional climate latent variable represents various indicators of interpersonal conflict and general difficulties with workplace relationships. As such, the latent variable is largely characterised by an underlying negative psychological milieu within the organisation. In terms of the research literature on loneliness, interpersonal conflict within an individual's existing relationships can contribute to feelings of loneliness (Rook, 1988). In earlier literature, Rook (1984a) indicated that the number of conflicting relationships elderly widowed women had, significantly predicted greater loneliness. Whilst this is not evidence for a cause and effect relationship, it seems plausible that an elevated level of interpersonal conflict can trigger loneliness by reducing the qualitative nature of relationships. Rook (1984a) also indicates that relationship development can be equally problematic as relationship initiation when the social environment exhibits a certain degree of interpersonal conflict or disconnection.

In terms of a lack of community spirit at work, working in a productive environment without a sense of community or availability of friendship at work can create an inherent sense of loneliness. According to the current research, a lack of workplace cohesion or sense of belonging contributes to a negative emotional climate. Seidenberg (1980) commented that working in an atmosphere of chronic distrust and suspicion of both competitors and fellow co-workers can have a brutalising effect on one's character and sense of belonging within an organisation. In many ways the workplace is replacing traditional social institutions, such as church and community groups, and as a result employees are becoming more aware of the quest for nonmaterial fulfilment at work, such as good quality interpersonal relationships (Giacalone & Jurkiewicz, 2003). Consequently, the idea of the workplace being a social foundation for developing a sense of belonging is becoming increasingly relevant to organisational practices (Pfeffer, 2003).

The results of the current research suggest that good quality relationship development is problematic in workplaces which exhibit a climate of fear, poor community spirit, and low congruence between an employee's values and those of the organisation. Given these results, there are several implications which warrant further analysis. Ryan and Oestreich (1991), in their book on fear in the workplace, discuss the

phenomenon as an 'undiscussable' organisational problem. As such, the issues surrounding a negative emotional climate in a particular workplace are not often brought to light. This situation, together with the fact that loneliness is often considered a 'taboo' subject (Creagh, 1995), can make rectifying or addressing poor emotional climates difficult. From discussions with several individuals who have experienced working in a hostile environment, it appears that employees are often hard pressed to determine the initiating cause of the negative climate (although they may express strong opinions regarding one facet of the problem). Furthermore, managers often express ignorance, or perhaps wilful blindness with regards to organisational morale problems, and the factors which may be causing the negativity in the first place. As such, the key informants of organisational decisions and practices may not have a good handle on the 'pulse' of the employee problems within the organisation (Jex & Crossley, 2005). However, pinpointing or isolating the cause of the negative climate can often prove problematic in organisations where deep-rooted organisational, personal, and behavioural issues exist. As such, the reasons for a negative emotional climate could vary considerably.

One reason for a negative emotional climate may stem from a poorly operating personnel system, which is reinforced by abrasive behaviour from senior management. According to Ryan and Oestreich (1991, p. 58) "people at the top who demonstrate abrasive or ambiguous behaviour, who appear insensitive to others, or who do not seem to collaborate with one another reinforce a general sense of mistrust". On the other hand, a negative climate could stem from a lack of cohesion or trust between co-workers, which could stimulate negativity and anxiety. Perlman and Peplau (1984) suggest that co-workers who are in direct competition for scarce resources may find it difficult to be cooperative and supportive of one another. It seems therefore that negativity or hostility can flow through the organisation both laterally and vertically, and perhaps not surprisingly, affects the quality of work-related interpersonal relationships. As such, the current research suggests that a negative emotional climate can be highly detrimental to the development of good quality relationships. If this is the case however, it may be valuable for managers, or those charged with the responsibility of employee welfare, to recognise that issues such as fear, social discord and loneliness at work may go unreported or be obscured, and thus give the superficial illusion of a healthy social environment. As suggested by

the results of this research, such negative environments could become evident when examining employee withdrawal behaviours, such as high turnover and low levels of organisational commitment.

Although an empirical relationship was not supported between loneliness at work and employee attitudes, the direct association between a negative work environment and employee withdrawal could prove to be costly for the organisation if in fact the organisation loses valuable employees as a result. Moreover, wilful blindness of the problems associated with a negative organisational climate may exacerbate the adverse consequences, leading to a continual reduction in job satisfaction and organisational commitment, and increased turnover. Reduced organisational commitment and job satisfaction also has ramifications for job performance and the completion of discretionary or extra-role activities known to boost organisational performance. For example, job satisfaction has been linked to voluntary overtime, organisational citizenship behaviour, and adaptive behaviour such as willingness to respond to change or the acquisition of new skills (Warr, 2005). Given that a negative emotional climate was linked with certain employee withdrawal behaviours, it would be expected that a reduction in discretionary activities and employee performance would also be evident. However, the nature of the underlying causality between extra-role behaviours and performance has yet to be determined.

The significant association between emotional climate and intention to turnover is particularly notable since previous research has suggested that turnover intentions are directly related to actual turnover (Steel & O'Valle, 1984). Although one cannot speculate too widely as to the implications of this finding (given that additional factors such as the availability of alternative employment influence staff turnover), the overlap suggests a certain degree of influence between emotional climate and turnover intentions. What is perhaps more concerning from an organisational perspective is the possibility that the employee decides to remain working with the organisation despite their dissatisfaction. This situation has potential ramifications associated with losses in performance and productivity, due to reduced organisational commitment and job satisfaction. Not surprisingly therefore, organisational climates which benefit from a supportive and cooperative environment are linked to enhanced teamwork and increased productivity (Shadur, Kienzle & Rodwell, 1999).

The finding that co-worker and supervisor support was not associated with the social companionship factor of loneliness partially supports previous research that loneliness and receiving social support are distinguishable constructs (see Chapter Two for a review). In other words, the perception of the quantitative aspects of interpersonal relationships at work is different from actual support from co-workers or supervisors. Whilst one would think that a lack of social support at work was predictive of the experience of loneliness at work, the research from the current study illustrates that there is an empirical distinction between actual social support and the perception of social companionship. In terms of implications, this result would suggest that attending to the emotional climate of the organisation, rather than offering objective social support, is perhaps the most critical factor to prevent loneliness from developing at work.

### *Alternative Frameworks for Understanding Loneliness at Work*

According to the theoretical and empirical literature reviewed in Chapter Five, it seems reasonable to hypothesise that selected dispositional factors in conjunction with various organisational and job characteristics influence loneliness at work. When lonely, it also follows that an individual is likely to withdraw and experience reduced wellbeing. Realistically, the model offers a preliminary framework of representing the many possible relationships between loneliness-related variables, and a means of thinking about the concept of loneliness at work. However, it may be unrealistic to expect that the causal mechanisms for loneliness can ever truly be exposed in quantitative psychological research. Although written some time ago, Kenny (1979, p. 11) argues:

*“... although we cannot deny that human behaviour is caused, our intuitions and traditions are still correct in telling us that people are free. Even highly developed causal models do not explain behaviour very well. A good rule of thumb is that one is fooling oneself if more than 50% of the variance is predicted. It might then be argued that the remaining unexplained variance is fundamentally unknowable and unexplainable. Human freedom may then rest in the error term ...”*

As such, various theories of loneliness may be more complex than the quantitative research and statistical techniques available to test them. Without dismissing the validity of the theory presented in this thesis, the loneliness at work model is perhaps an oversimplification of the complex cognitive, perceptual, emotional and structural events taking place in both individuals and organisations. The loneliness at work model was an ambitious portrayal of the possible mediating role loneliness played in the relationship between various antecedent and outcome variables. Ironically however, the model was perhaps too complex to test as a preliminary model using structural equation modelling techniques. Thus, many of the components of the loneliness model could not be adequately tested in the overall structural model due to poor statistical performance. It may therefore be reasonable to conclude that the measurement and data analytic procedures were problematic, rather than a fault lying purely with the theory. The following section nonetheless considers a restructure of the loneliness at work model with alternative conceptualisations of the related constructs, particularly in relation to the various moderators of the causal pathways within the model.

### *Rethinking the Loneliness at Work Model*

In hindsight, it is likely that the various relationships between the constructs in the loneliness at work model are not limited to a linear process, nor do they reflect direct cause and effect associations. For example, it is possible that any one of the constructs within the model could act as an independent variable, a mediator, a moderator, or a dependent variable depending on the situation. Speculating further, it is likely that the relationship between loneliness at work and various psychological constructs is recursive. That is, while loneliness has the potential to contribute to various personal and organisational outcomes, those suffering from high levels of stress or low levels of job satisfaction for example, may experience loneliness as a consequence.

Based on theoretical interpretation, the loneliness at work model represents loneliness as a stressor leading to the perception of job stress. It might be argued however, that if one was experiencing work-related stress as a result of a demanding workload, they may have limited time available for good quality social interactions, and thus feel lonely as a consequence. Moreover, due to their taxing workload and the weight of

time pressure they may feel irritable and tense, and repel others from enjoying their social companionship. As indicated previously, such a situation may inhibit the initiation or maintenance of good quality interpersonal relationships. On the other hand, work stress resulting from unfamiliar and potentially threatening situations, may actually increase the desire to affiliate with others. In general, people tend to seek companionship when they are anxious or frightened (Rook, 1984a). When an individual feels threatened because of a work situation, such as a performance evaluation or the threat of redundancy, they may have a heightened need for contact with others. During these stages, the desire for social companionship may be especially great, and loneliness may be particularly intense if social discourse is not achieved. Given these scenarios, the extent to which job stress is a consequence of feeling lonely at work (as argued and tested in Chapters Five and Six) or is an antecedent condition of loneliness is a moot point and therefore remains an empirical question. In truth, loneliness at work may well be a stressor and a strain depending on the individual and the situation.

In terms of identifying the causal association between perceived job stress and loneliness, the research question might be whether loneliness leads to stress, whether stress leads to loneliness, or whether a recursive relationship exists wherein the relationship is bidirectional. As indicated previously, a survey design measuring both constructs at one point in time cannot assess this causal hypothesis. Nonetheless, even if longitudinal data were available on the constructs, temporal placement is not a sufficient condition for establishing a causal relationship. However, a longitudinal design incorporating quasi-experimental methods whereby loneliness was measured at time intervals corresponding with temporal stress fluctuations, could potentially address the causal mechanisms of the stress-loneliness relationship.

Regarding other relationships within the loneliness at work model, the sequence of relationships between social support and organisational climate may require restating. For example, Odden and Sias' (1997) research suggests that peer relationships are associated with supervisor's behaviour. Their research found employees are more likely to form friendships with co-workers when they perceive their supervisor as being unsupportive, unfair, untrustworthy, and unwilling to provide recognition of employee accomplishment. Previous research by Sias and Jablin (1995) also indicates

that co-workers become closer when they perceive their supervisor has treated particular group members unfairly. In the case of the present research, it could be that supervisor support, or lack thereof, may influence both fear at work and the perception of co-worker support. These relationships may also be moderated by a sense of organisational justice (Cropanzano, Goldman, & Benson, 2005). For instance, if an employee's supervisor exhibited inconsiderate and unfair behaviour, which was unregulated by the organisation, the employee may experience fear towards their supervisor given the power differential and a sense of inherent injustice. The worker may then rely on fellow co-workers for advice and support in dealing with their supervisor and the organisation more generally. This reliance may draw co-workers together to form more meaningful relationships. Contextual factors, such as supervisor consideration, may therefore influence other organisational factors, which may indirectly affect the development of loneliness.

Although hypothesised, it is not entirely clear that the supervisor is the most effective person in terms of relieving an employee's feelings of isolation and lack of good quality interpersonal relationships. From the employee's perspective, the supervisor is potentially the most powerful person in the organisation as a source of punishment, reward, and social support. However, as indicated previously, the provision of support and friendship may be problematic for supervisors, as the nature of the manager-employee relationship is essentially non-reciprocal (Gilbreath, 2004). In other words, supervisors may not wish to disclose personal information which suggests they are less than competent. Similarly, the subordinate may feel equally uncomfortable receiving such information. Moreover, employees may also feel inhibited in revealing personal disclosures or fallibilities to their supervisor, as it may impede their chances for promotion or financial recognition. Potentially, such a strained situation demonstrates the limited assistance supervisors can offer in overcoming an employee's relationship difficulties at work. Therefore, while the supervisor may have an indirect effect on an employee's interpersonal relationship satisfaction with other organisational members, their direct impact on the development of loneliness may be questionable. In future, research may benefit from examining the influence supervisor support has on the morale of the organisation, which may dictate the quality of social relationships between fellow employees. According to research originating in the 1940s the immediate supervisor is a tremendously important factor in the

determination of employee morale (Hull & Kilstad, 1942, in Gilbreath, 2004). It may therefore be prudent to consider the effect supervisor behaviour has on co-worker support and emotional climate, rather than treating the factors as direct contributors to loneliness at work.

One of the difficulties in studying a psychological phenomenon such as loneliness is the host of cognitive processes which potentially moderate the perception of various situations and events which are thought to trigger loneliness. Consequently, it is important that theories relating to psychological processes actually attempt to explain the relationships between the phenomena depicted in the flow diagrams, rather than simply stating that one particular variable causes another variable, and to end our thinking there. This thesis set out to explore the nature of loneliness in the workplace, particularly the environmental triggers which were thought to exacerbate feelings of emotional and social deprivation. However, it has become apparent throughout this thesis that coping mechanisms, resilience, and other individual and regulatory differences impacts on each of the hypothesised links within the model. Although this research has demonstrated a relationship between environmental factors and the development of loneliness at work, dispositional factors would tend to influence how the individual perceives those environmental factors. In the same social environment, one individual may view the climate of the organisation to be onerous and the support they receive inadequate, while another may feel completely satisfied with both of these factors.

Future research on work-related loneliness may benefit from looking more closely at dispositional factors which influence how the individual interacts with their social environment. From this perspective, it would be advantageous to study loneliness within one organisation. This way, a certain degree of control and awareness of the environmental conditions could be achieved, and the examination of dispositional factors could be evidenced in relation to work-related loneliness. As outlined in Chapters Two and Three, it appears that the transactional view (that is, both environmental and dispositional factors interacting to influence loneliness) offers a valid explanation for the development of loneliness. As such, in order to understand loneliness one must not only consider the dispositional characteristics of the individual and the ways in which they operate in their social environment, but also the

ways in which the social environment operates on the individual, either causing or perpetuating loneliness. Future research could therefore explore the transactional view further by focusing on the moderating role certain dispositional factors may play in both the interpretation of environmental factors and in the perception of loneliness.

The experience of loneliness at work may also be mitigated, or moderated by the compensation of work-related challenge and growth. Therefore, bouts of loneliness may largely be relieved by the consolation of success, opportunity, and achievement. Such experiences could well satisfy an individual's self-esteem and reassurance of worth, which may mitigate the potential issue of loneliness. Alternatively of course, the very fact that an individual exhibits behaviours relating to self-assurance and success may overcome potential interpersonal difficulties by attracting other like-minded individuals as social comrades. According to Potthoff (1976) and Rokach (1985) much of the meaning in life comes from interacting and relating to others. Accordingly, when this aspect is missing in one's life, loneliness can be felt very deeply. However, while this is true for the great majority of individuals, if an individual were completely satisfied through the challenge of their work, they may find deep fulfilment in the solitary accomplishment of that work, rather than human relationships. In fact, for some individuals who are required to focus single-mindedly on their work, relationships with others can potentially act as a source of strain. As such, there would be little, if any, incongruence between their actual and desired work-related relationships. In fact, the provision of work-based friendships may prove burdensome. However, this situation may relate more to an individual's perception of success or challenge, rather than to any objective reality. In equivalent situations, it would be interesting to note those factors which are influential in the development of loneliness between individuals who have demonstrated comparable success in their chosen careers. As indicated previously, it would be expected that the individual's perception of their success or their challenging role, and how those factors affect their interpersonal relationships, is more relevant than the fact itself.

In many respects, identifying as lonely tells us very little about how the individual came to feel lonely and the distress that may, or may not be, associated with it. Throughout the literature, loneliness is often referred to as a painful experience, with most research associating the phenomenon with negative personal outcomes (see

Chapter Two for a review of this literature). For most individuals, there exists a strong and pervasive drive to be accepted by others, and thus, this motive underlies much of human behaviour (Leary, 2001). As such, people try to behave in ways that will not jeopardise their social acceptance which may lead to social rejection or ostracism (Williams, 2002). Consequently, most individuals appear to be aware of the importance of developing meaningful interpersonal relationships. When asked ‘what is necessary for happiness?’ most people regard social relationships with friends and family as being the most important factor (Berscheid, 1985). However, despite our cognisance of the importance of interpersonal relationships, and our inevitable avoidance of complete social isolation, merely identifying as lonely may not always cause grief. Moreover, the remedies for loneliness may actually result in further distress to the individual (such as interacting with strangers) and perhaps outweigh the disadvantages of simply accepting the feeling of being lonely. However, we cannot presume that all lonely individuals are accepting or comfortable with their situation, as most individuals seem to be motivated to overcome their loneliness (Rook, 1988). This chapter now turns to a discussion of possible interventions for work-related loneliness.

### *Interventions for Loneliness*

*“To every complex problem there is a simple solution - startling in its simplicity, piercing in its clarity - and hopelessly and completely wrong”*

(Gore Vidal in Briner & Reynolds, 1999, p. 647).

Arguably, little can be done to change the nature of some occupational positions, and the potential isolation and loneliness that can accompany those positions (Cooper & Quick, 2003). In other words, loneliness can be forced upon employees as a condition of their job or their position in the hierarchy. However, if the results of this research are indeed representative of a wider problem of poor quality social relationships at work, there are several interventions which could be implemented at both the individual and the organisational level. Like occupational stress, loneliness interventions can be directly related to the core manifestation of the problem by providing individual assistance, or can be approached indirectly, such as attending to

the nature of the individual's social network or the negative climate of the organisation.

The aim of this section is not to provide a list of prescriptive recommendations which potentially gloss over of the complex issues surrounding organisations and loneliness. In fact, it is all too common in the literature to see research reports skirting around the difficulties of intricate organisational issues (Briner & Reynolds, 1999), with vague recommendations such as "Support at work may be able to protect people from some of the damaging effects of bullying" (Quine, 1999, p. 228). While it is beyond the scope of this thesis to offer a comprehensive intervention strategy (as this would require a thesis in itself) it is important to accommodate the complexities surrounding loneliness, and offer interventions which at least attempt to tap into the underlying cause of the problem.

In terms of intervention strategies, one could argue that it is inappropriate to offer remedies for work-related loneliness when little evidence was presented in the current research demonstrating a link between loneliness and adverse consequences. In other words, prior to intervening one should provide evidence which clearly demonstrates a causal link between specific work conditions, loneliness, and various outcomes in terms of employee wellbeing and behaviour. Such evidence allows for the implementation of appropriate preventative interventions based on causal processes which are both possible and desirable. However, causal processes regarding organizational characteristics are difficult to accurately identify and therefore the effects of any intervention may be difficult to predict (Briner & Reynolds, 1999). Nevertheless, despite the structural model failing to show a mediating relationship, it is clear from the raw scores on the loneliness scale that several respondents presented considerable degrees of loneliness. In fact, 14 respondents scored in the top quartile of the range of loneliness scores (scores of 84-112, from a possible range of 16-112). Although this represents a small percentage of the total sample, it does indicate that a lack of good quality interpersonal relationships at work is affecting a number of individuals at work, and requires intervention at some level. This chapter now turns to a brief discussion on viable interventions for both individuals and organisations.

### *Organisational Interventions*

It has been argued that work-related stress is most effectively managed by work-related sources of support (supervisor and co-workers), because the stress treatment occurs in the context of the stressful situation (Beehr, 1985). Therefore, attending to the work environment rather than remedying personal factors, may help to reduce feelings of loneliness at work, and concurrently improve job satisfaction and organisational commitment. As such, organisational interventions may help to create a healthy work environment by attending to organisational values which emphasise conflict resolution and a sense of belonging.

The crux of the matter however, relates primarily to accurately diagnosing and monitoring employees' beliefs and perceptions related to the organisational climate. Again, it is beyond the scope of this thesis to discuss the issues involved with the diagnostic process of accurately determining the effects of organisational climates (see Ashkanasy, Wilderom & Peterson, 2000). However, identifying the core underlying issues which require remedying, and interpreting identified shortcomings is critical to any successful organisational change effort. However, according to Michela and Burke (2000) organisational change initiatives are often hindered by a misperception of priorities. Specifically, managers are typically concerned with the organisation's mission, strategy, productivity and performance. However, organisational change specialists are often interested in leadership, culture, human systems, management practices, and individual needs, which relate to organisational performance. For climate change to be effective, particularly regarding the improvement of human relations within the organisation, an integration of priorities relating to effective management and individual welfare is essential.

Irrespective of perspective however, a lack of good quality social relations can be seen as symptomatic of a poor organisational climate. A strongly bureaucratic organisation, for example, emphasises position-bound interactions where relationships are limited to those that are functionally required for fulfilling the employee's duties. As such, the employee's loyalty, according to the bureaucracy, is to the organisation and its endeavours, not to personal advancement or improved welfare (Adams & Balfour, 1998). Within such organisations it may be that fear and lack of cohesion

between co-workers represents the overall climate and impedes the development of good quality relationships. In this respect, training can help to orient organisational members, particularly senior management, toward the kinds of behaviours that will lead to a climate of trust, belonging and shared values. These behaviours could include, for example, encouraging employees to seek each other out for support, and identifying when it is appropriate to admit social and emotional fallibility. Such behaviours are contingent upon an overall structure and environment whereby organisational members are permitted to develop various social opportunities.

Organisations concerned with a consistently poor climate affecting individual welfare might consider creating, or perhaps improving communication channels through which employees can confidentially voice their concerns without fear of retribution or ridicule. In terms of reducing fear in the work environment, rather than bury the predicament, Ryan and Oestreich (1991) propose interventions such as openly identifying acceptable and unacceptable work behaviours and actively coaching those who require behavioural change. Furthermore, managers can be instructed to promote a climate of trust, openness and friendship among staff, and to model interactions which the organisation seeks to promote (Rousseau, 1995).

In reality however, employers cannot force employees not to be lonely. In fact, one may question why loneliness is, or should be, an organisational responsibility. Organisations, it would seem, can provide training and other tangible needs related to organisational functioning more readily than offer services responsive to the solutions of employee welfare. Consequently, programmes to ameliorate loneliness might have difficulty in gaining organisational support, or employee participation for that matter. Because loneliness is an inherently personal experience, interventions may therefore be required at an individual level.

### *Individual Interventions*

In the myriad of loneliness-provoking factors, it is possible that some occupations and some organisations can potentially force people to be antisocial, as the demands of high performance working life can preclude various social activities. Moreover, many people would like to be socially connected at work but time does not often allow for

interpersonal closeness throughout the day. Therefore, many individuals are inherently required to accept loneliness as part of their occupation. Given the complicated and highly differentiated patterns of loneliness, a variety of personal interventions can be applied to help individuals cope with loneliness. The following section briefly discusses various possibilities for individual loneliness interventions.

If we revisit the definition of work-related loneliness outlined in Chapter Three, as ‘the distress caused by the perceived lack of good quality interpersonal relationships between employees in a work environment’, then interventions to alleviate loneliness should work by closing the gap between actual and desired interpersonal relationships. In this respect, the individual has to experience meaningful human contact and feel a sense of inclusion to ease the burden of loneliness. In very broad terms, loneliness interventions accomplish this by concentrating on evaluating the preferred level of interpersonal interaction for the individual (Peplau & Goldston, 1984). As such, interventions can focus on lowering the individual’s preference to match their social reality through the individual reappraising their expectations regarding the social deficiency. Alternatively, interventions can focus on improving the actual level of social contact, by raising the perception of social interaction and suggesting ways to improve the reality to match the individual’s preference for social companionship. When environmental changes are not feasible, such as finding alternative employment to improve social relations, and when accepting loneliness is no longer an option, the individual must reappraise the subjective evaluations of their social networks.

As indicated previously, the most appropriate intervention to alleviate an individual’s loneliness is dependent upon the cause of the loneliness. For example, if a person is lonely at work because of a general negative outlook on life, cognitive therapy may be useful to mitigate feelings of loneliness (DeRubeis, Tang & Beck, 2001). On the other hand, if a person is feeling lonely because of limited social opportunities within their organisation, or they dislike working alone, perhaps the best remedy would be to explore joining a social or community group to gain a sense of belonging. However, such recommendations are potentially ill-fated if the underlying cause of the distress is not attended to.

Rook (1984b) proposed three goals for loneliness interventions: (1) the promotion of social bonding, (2) the enhancement of coping with loneliness, and (3) the prevention of loneliness. The first two approaches aim to help lonely individuals develop social skills and adopt healthier social cognitions by challenging their faulty perceptions. The third category, which is rarely researched or implemented, is the primary prevention of loneliness through loneliness management training (e.g. Klingman & Hochdorf, 1993). Overall, loneliness interventions have met with mixed or limited success (Ernst & Cacioppo, 1998). For instance, merely focussing on building social bonding and networks does not seem to facilitate an associated decrease in loneliness, in the short term at least. Because the development of meaningful interpersonal relationships tends to take time, interventions to remedy a deficient social network may not have an immediate affect on loneliness. With regards to workplace loneliness, individual treatments which help individuals understand their feelings of loneliness and encourage individuals to appreciate that both person and situation factors can contribute to loneliness may be useful.

Another intervention which may prove useful for work-related loneliness is journal writing or diary keeping. This approach, developed by Pennebaker (1997), aims to assist individuals who have experienced trauma, and requires participants to write about a personal traumatic event. There is evidence that such interventions do indeed reduce the level of health behaviours, self-reported symptoms, and indicators of physical health (Pennebaker, 1997). In terms of the workplace, the act of personal writing may promote self-understanding regarding an individual's feeling of loneliness, and may help reframe the individual's distress over relationship deficiencies. It may also help provide insight for individuals who are socially anxious or feel defeated by their social relationships.

To overcome loneliness in the workplace it may also be necessary for the individual to improve their communication skills. Research by Jones, Hobbs and Hockenbury (1982) suggests that improvements in communicative competence can reduce loneliness. Bell (1985), using an experimental design on a sample of 968 undergraduate students, has also demonstrated that lonely people tend to be passive and restrained communicators. In terms of overt behaviours, self-reported lonely respondents were less talkative and exhibited lower rates of interruptions and vocal

back-channels. These studies, although not widely generalisable to employees, may have various implications for the workplace. For example, socially or emotionally uninvolved employees may be less attractive to co-workers due to their inhibited social behaviour and poor communication skills. Therefore, improved camaraderie may be achieved through sharing an experience with another person by modifying one's own behaviour. As such, interventions related to improved communication, engaging with the social environment, and creating an experience of communality may help to reduce loneliness.

Other individual intervention strategies relating to the workplace could include the provision of peer support through coaching or mentoring programmes (Cooper & Quick, 2003). Such sources of social support may provide a work-based outlet for employees to speak freely about personal or work-related issues, and to help correct the perceived deficiency between actual and desired relationships at work. The underlying purpose behind these programmes should be to increase relationship-oriented behaviours so the beneficial consequences of social support can be achieved. The effectiveness of such interventions is, however, a matter of speculation. Empirically, the value of such interventions has yet to be evidenced.

In sum, it seems reasonable to assume that any intervention, whether it is targeted at the individual or the organisation will have mixed effects. While it is presumably the intention of most interventions to provide positive outcomes, it seems likely that there will be some negative and unintended side-effects in countering loneliness, such as the invasion of privacy. However, one would hope that by removing the causes or sources of loneliness, such as reducing fear and enhancing a feeling of community spirit, the effects can only be positive and far-reaching.

### *Conclusions*

This thesis has provided partial support for the hypothesis that loneliness experienced at work is not entirely attributed to personality characteristics, but rather to external characteristics concerning the organisation's climate. Moreover, it has affirmed the selective importance of fear, community spirit, and organisational fit in the development of emotional deprivation at work. While it is clear that the detailed predictions of the loneliness at work model have not stood up to empirical test, it does not necessarily undermine its usefulness in understanding work-related loneliness. With little empirical data from previous research to validate or substantiate this study, it can only be considered a beginning. In general, the relationships between the variables reported in the present research are complex and therefore would benefit from further enquiry. Various suggestions for future research have been provided throughout this chapter, and primarily relate to methodological improvements and further determining the relationship between job characteristics and loneliness.

A natural extension to this thesis would be to investigate the coping mechanisms used by people who are experiencing loneliness at work. The question of how an individual copes with loneliness in the workplace, particularly in relation to the organisation's climate, is not clear. In this respect, personal mechanisms, such as overcoming shyness or minimising negative thoughts in social situations, and the provision of organisational resources, such as eliminating bullying behaviour or providing areas in which employees can freely socialise, could be used as coping or regulatory mechanisms. As outlined previously, it follows that some of these strategies or responses would be more effective than others in stopping or mitigating the experience of loneliness at work.

In the workplace, Krackhardt and Stern (1988) have noted that much of the influence and the actual work within an organisation is accomplished through an informal structure of friends, contacts, and 'accidental' communications. Broadly speaking, increased attention to the development and quality of interpersonal relationships at work may therefore be advantageous in understanding the dynamics of organisational behaviour and improving both individual and organisational wellbeing. Given the complex nature of interpersonal relationships, organisations, and loneliness, this

research has gone some way toward understanding the potential for people to feel lonely at work.

## REFERENCES

- Adams, G. & Balfour, D. (1998). *Unmasking administrative evil*. Thousand Oaks, CA: Sage Publications.
- Adamson, B., & Axmith, M. (2003). The CEO disconnect: Finding consistency between personal values and the demands of leadership. *Ivey Business Journal*, *May/June*, 1-6.
- Allen, R. & Oshagan, H. (1995). The UCLA Loneliness Scale: Invariance of social structural characteristics. *Personality and Individual Differences*, *19* (2), 185-195.
- Allison, D. (1997). Assessing stress among public school principals in British Columbia. *Psychological Reports*, *80*, 1103-1114.
- Amichai-Hamburger, Y., & Ben-Artzi, E. (2003). Loneliness and internet use. *Computers in Human Behavior*, *19* (1), 71-80.
- Anastasi, A. (1976). *Psychological Testing*. New York: Macmillan.
- Anastasi, A., & Urbina, S. (1998). *Psychological testing* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Anderson, C., & Arnoult, L. (1985). Attributional style and everyday problems in living: Depression, loneliness, and shyness. *Social Cognition*, *3*, 16-35.
- Archibald, F., Bartholomew, K., & Marx, R. (1995). Loneliness in early adolescence: A test of the cognitive discrepancy model of loneliness. *Personality and Social Psychology Bulletin*, *21*, 296-301.
- Aronson, E., & Patnoe, S. (1997). *The jigsaw classroom: Building cooperation in the classroom*. New York: Addison Wesley Longman.
- Asher, S., Hymel, S. & Renshaw, P. (1984). Loneliness in children. *Child Development*, *55* (4), 1456-1464.

- Ashkanasy, N., & Nicholson, G. (2003). Climate of fear in organisational setting: Construct definition, measurement and a test of theory. *Australian Journal of Psychology, 55* (1), 24-29.
- Ashmos, D., & Duchon, D. (2000). Spirituality at work: A conceptualisation and measure. *Journal of Management Inquiry, 9* (2), 134-145.
- Ashkanasy, N., Wilderom, C., & Peterson, M. (2000). *Handbook of organisational culture and climate*. Thousand Oaks, CA: Sage Publications.
- Austin, B. (1983). Factorial structure of the UCLA loneliness scale. *Psychological Report, 53*, 883-889.
- Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling, 9*, 78-102.
- Bandalos, D. L., & Finney, S. J. (2001). Item parceling issues in structural equation modeling. In G. A. Marcoulides & R. E. Schumacker (Eds.), *New developments and techniques in structural equation modeling* (pp. 269-296). Mahwah, NJ: Lawrence Erlbaum.
- Barnett, B. (1990). Peer assisted leadership: Expanding principals' knowledge through reflective practice. *Journal of Educational Administration, 28*(3), 67-76.
- Baumeister, R., Reis, H., & Delespaul, P. (1995). Subjective and experiential correlates of guilt in daily life. *Personality and Social Psychology Bulletin, 21* (12), 1256-1268.
- Beck, A., Epstein, N., Brown, G., & Steer, R. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*(6), 893-897.
- Beehr, T. (1985). The role of social support in coping with organizational stress. In T. Beehr and R. Bhagat (Eds.), *Human Stress and Cognition in Organizations: An Integrated Perspective*. (pp. 375-398). New York: Wiley.

- Beehr, T., Farmer, S., Glazer, S., Gudanowski, D., & Nair, V. (2003). The enigma of social support and occupational stress: Source of congruence and gender role effects. *Journal of Occupational Health Psychology, 8* (3), 220-231.
- Bell, R. (1985). Conversational involvement and loneliness. *Communication Monographs, 52*, 218-235.
- Bell, R.A., Roloff, M.E., Van Camp, K., & Karol, S.H. (1990). Is it lonely at the top? Career success and personal relationships. *Journal of Communication, 40*(1), 9-23.
- Bentler, P. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246.
- Berman, E., West, J., & Richter, M. (2002). Workplace relations: Friendship patterns and consequences (according to managers). *Public Administration Review, 62*(2), 217-230.
- Berscheid, E. (1985). Interpersonal attraction. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology*. New York: Random House.
- Bollen, K. (1989). *Structural equations with latent variables*. New York: Wiley.
- Bollen, K. (2002). Latent variables in psychology and the social sciences. *Annual Review of Psychology, 53*, 605-634.
- Bollen, K., & Long, J. (1993). Introduction. In K. Bollen & J. Long (Eds.), *Testing structural equation models* (pp. 1-9). Newbury Park, CA: Sage.
- Bollen, K., & Stine, R. A. (1992). Bootstrapping goodness-of-fit measures in structural equation models. *Sociological Methods and Research, 21*, 205-229.
- Bolman, L. and Deal, T. *Reframing Organizations: Artistry, Choice and Leadership*. San Francisco, CA: Jossey-Bass.
- Boorsboom, D., Mellenbergh, G., & van Heerden, J. (2004). The concept of validity. *Psychological Review, 111*(4), 1061-1071.

- Booth, R., Bartlett, D., & Bohnsack, J. (1992). An examination of the relationship between happiness, loneliness, and shyness in college students. *Journal of College Student Development, 33*, 157-162.
- Borys, S. & Perlman, D. (1985). Gender differences in loneliness. *Personality and Social Psychology Bulletin, 11* (1), 63-74.
- Bowlby, J. (1969). *Attachment and loss*. London, Hogarth Press.
- Bradburn, N. (1969). *The structure of psychological wellbeing*. Chicago, IL: Aldine.
- Bragg, M. (1979). *A comparative study of loneliness and depression*. Unpublished doctoral dissertation. University of California, Los Angeles.
- Briner, R., & Reynolds, S. (1999). The costs, benefits, and limitations of organisational level stress interventions. *Journal of Organisational Behaviour, 20*, 647-664.
- Brings, D. (1986). Loneliness, perception of control, and health. (Doctoral dissertation, University of Manitoba, 1985). *Dissertation Abstracts International, 47*, 1326B.
- Browne, M., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. Bollen & J. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Buhrmester, D., Furman, W., Wittenberg, M., & Reis, H. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology, 55*, 991-1008.
- Burger, J. (1995). Individual differences in preference for solitude. *Journal of Research in Personality, 29*, 85-108.
- Byrne, B. (2001). *Structural equation modeling with AMOS : basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Cable, D. M., & Judge, T. A. (1996). Person-organization fit, job choice decisions, and organizational entry. *Organizational Behavior and Human Decision processes*, 67, 294-311.
- Cacioppo, J. (2004). All in the Mind: Ostracism, the cruel power of silence. Retrieved from the World Wide Web on 22 July 2004 from <http://www.abc.net.au/rn/science/mind/stories/s1066040.htm>
- Cacioppo, J., Hawkley, L., & Berntson, G. (2003). The anatomy of loneliness. *Current Directions in Psychological Science*, 12, 71-74.
- Caplan, R., Cobb, S., French, J., Van Harrison, R., Pinneau, S. (1975). *Job demands and worker health: Research report*. University of Michigan: Institute for Social Research.
- Caught, K., Shadur, M. & Rodwell, J. (2000). The measurement artefact in the Organisational Commitment Questionnaire. *Psychological Reports*, 87(Pt. 3, 1), 777-788.
- Chadsey-Rusch, J., DeStefano, M., Gonzalez, P. & Collet-Klingenberg, L. (1992). Assessing the loneliness of workers with mental retardation. *Mental Retardation*, 30 (2), 85-92.
- Chay, Y. (1993). Social support, individual differences and wellbeing: A study of small business entrepreneurs and employees. *Journal of Occupational and Organisational Psychology*, 66, 285-302.
- Cheek, J., & Buss, A. (1981). Shyness and sociability. *Journal of Personality and Social Psychology*, 41(2), 330-339.
- Chen, P., & Spector, P. (1991). Negative affectivity as the underlying cause of correlations between stressors and strains. *Journal of Applied Psychology*, 76, 398-407.
- Cheng, H., & Furnham, A. (2002). Personality, peer relations, and self-confidence as predictors of happiness and loneliness. *Journal of Adolescence*, 25(3), 327-339.

- Ciftci-Uruk, A., & Demir, A. (2003). The role of peers and families in predicting the loneliness level of adolescents. *Journal of Psychology, 137* (2), 179-193.
- Clark, L., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.
- Clegg, C. & Wall, T. (1981). A note on some new scales for measuring aspects of psychological wellbeing at work. *Journal of Occupational Psychology, 54*, 221–5.
- Cobb S (1976). Social support as a moderator of life stress. *Psychosomatic Medicine 38*, 300–314.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: L. Erlbaum Associates.
- Cohen, S., & Wills, T. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*, 310-357.
- Cohen, S., Kamarck, T., & Mermelstein R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385-396.
- Comrey, A., & Lee, H. (1992). *A first course in factor analysis*. Hillsdale, NJ: Lawrence Erlbaum.
- Conger, J. (1994). *Spirit at Work*. San Francisco, CA: Jossey-Bass.
- Constable, J., & Russell, D. (1986). The effect of social support and the work environment upon burnout among nurses. *Journal of Human Stress, 12*, 20-26.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology, 53*, 39-52.
- Cook, T., & Campbell, D. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin.
- Cooper, C. (1981). *The stress check*. Englewood Cliffs, CA: Prentice-Hall.

- Cooper, C., & Quick, J. (2003). The stress and loneliness of success. *Counselling Psychology Quarterly*, 16 (1), 1-7.
- Cooper, C., Dewe, P., & O'Driscoll, M. (2001). *Organizational Stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage Publications.
- Cotton, P., & Hart, P. (2003). Occupational wellbeing and performance: A review of organisational health research. *Australian Psychologist*, 38 (2), 118-127.
- Cox, H. (1987). Verbal abuse in nursing: Report of a study. *Nursing Management*, 19, 47-50.
- Cox, T. (1978). *Stress*. Baltimore, MD: University Park Press.
- Cox, T. (1993). *Stress research and stress management: Putting theory to work*. Health and Safety Executive Contract Research Report 61. Suffolk: HSE Books.
- Cramer, K. & Barry, J. (1999). Conceptualisations and measures of loneliness: a comparison of subscales. *Personality and Individual Differences*, 27, 491-502.
- Crampton, S., & Wagner, J. (1994). Percept-percept inflation in micro-organisational research: An investigation of prevalence and effects. *Journal of Applied Psychology*, 79, 67-76.
- Creagh, T. (1995). *Loneliness: a taboo topic for New Zealand*. Orewa, NZ: Colcom Press.
- Cropanzano, R., Goldman, B., & Benson, L. (2005). Organisational justice. In J. Barling, E. Kelloway, M. Frone (Eds.), *Handbook of work stress*. Thousand Oaks, CA: Sage Publications.
- Cubitt, S., & Burt, C. (2002). Leadership style, loneliness and occupational stress in New Zealand primary school principals. *New Zealand Journal of Educational Studies*, 37 (2), 159-169.
- Cutrona, C. (1982). Transition to college: Loneliness and the process of social adjustment. In L. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of*

- current theory, research, and therapy* (pp. 291-309). New York: John Wiley & Sons.
- Damsteegt, D. (1992). Loneliness, social provisions, and attitude. *College Student Journal*, 26, 135-139.
- Davis, S., Hanson, H., Edson, R., & Ziegler, C. (1992). The relationship between optimism-pessimism, loneliness, and level of self-esteem in college students. *College Student Journal*, 26, 244-247.
- De Botton, A. (2001). *The consolations of philosophy*. New York : Vintage Books.
- De Botton, A. (2002). *The art of travel*. London : Hamish Hamilton.
- De Dreu, C., West, M., Fischer, A., & MacCurtain, S. (2001). Origins and consequences of emotions in organisational teams. In R. Payne & C. Cooper (Eds.), *Emotions at Work* (pp. 199-312). New York: Wiley.
- De Jong-Gierveld, J. & Kamphuis, F. (1985). The development of a rasch-type loneliness scale. *Applied Psychological Measurement*, 9(3), 289-299.
- De Jong-Gierveld, J. (1987). Developing and testing a model of loneliness. *Journal of Personality and Social Psychology*, 53, 119-128.
- DeBerard, M., & Kleinknecht, R. (1995). Loneliness, duration of loneliness, and reported stress symptomatology. *Psychological Reports*, 76, 1363-1369.
- Derlega, V., & Margulis, S. (1982). Why loneliness occurs: The interrelationship of social-psychological and privacy concepts. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy* (pp.152-165). New York: John Wiley & Sons.
- DeRubeis, R., Tang, T., & Beck, A. (2001). Cognitive Therapy. In K. Dobson (ed.), *Handbook of cognitive-behavioural therapies*. NewYork: Guildford Press.
- Diener, E., Emmons, R., Larsen, R., Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.

- Dignam, J., & West, S. (1988). Social support in the workplace: Tests of six theoretical models. *American Journal of Community Psychology, 16* (5), 701-724.
- Dignam, J., Barrera, M., & West, S. (1986). Occupational stress, social support and burnout among correctional officers. *American Journal of Community Psychology, 14*, 177-193.
- DiTommaso, E. & Spinner, B. (1992). The development and initial validation of the social and emotional loneliness scale for adults. *Personality and Individual Differences, 14* (1), 127-134.
- DiTommaso, E., & Spinner, B. (1997). Social and emotional loneliness: A re-examination of Weiss' typology of loneliness. *Personality and Individual Differences, 22*(3), 417-427.
- DiTommaso, E., Brannen, C., & Best, L. (2004). Measurement and Validity Characteristics of the Short Version of the Social and Emotional Loneliness Scale for Adults. *Educational & Psychological Measurement, 64* (1), 99-119.
- DiTommaso, E., Brannen-McNulty, L., Ross, R., & Burgess, M. (2003). Attachment styles, social skills and loneliness in young adults. *Personality and Individual Differences 35*, 303-312.
- Doctor, M., & Kahn P. (1989). *The Encyclopaedia of Phobias, Fears, and Anxieties*. New York: Facts on File.
- Dolan, S., & Renaud, S. (1992). Individual, organisational and social determinants of managerial burnout: A multivariate approach. *Journal of Social Behaviour and Personality, 7*, 95-110.
- Doyle, D., & Forehand, M. (1984). Life satisfaction and old age: A re-examination. *Research on Aging, 6*, 432-448.
- Dozier, R. (1998). *Fear Itself: The Origin and Nature of the Powerful Emotion That Shapes Our Lives and Our World*. New York: St Martin's Press.

- Duck, S., Pond, K., & Leatham, G. (1994). Loneliness and the evaluation of relational events. *Journal of Social & Personal Relationships, 11* (2), 253-276.
- Dussault, M. & Barnett, B. (1996). Peer assisted leadership: Reducing educational managers' professional isolation. *Journal of Educational Administration, 34* (3), 5-14.
- Dussault, M. & Thibodeau, S. (1997). Professional isolation and performance at work of school principals. *Journal of School Leadership, 7*, 521-536.
- Dussault, M., Deaudelin, C., Royer, N., & Loïselle, J. (1999). Professional isolation and occupational stress in teachers. *Psychological Reports, 84*, 943-946.
- Earle, W., Giuliano, T., & Archer, R. (1983). Lonely at the Top: The effect of power on information flow in the dyad. *Personality and Social Psychology Bulletin, 9* (4), 629-637.
- Ernst, J., & Cacioppo, J. (1998). Lonely hearts: Psychological perspectives on loneliness. *Applied & Preventative Psychology, 8*, 1-22.
- Fenlason, K., & Beehr, T. (1994). Social support and occupational stress: Effects of talking to others. *Journal of Organisational Behaviour, 15*, 157-175.
- Fine, G. (1986). Friendships in the work place. In V. Derlega & B. Winstead (Eds.), *Friendship and social interaction*. New York: Springer-Verlag.
- Fisher, D. (1994). Loneliness. In R. Corsini (ed.), *Encyclopaedia of psychology*, Vol. 2 (pp. 350-351). New York: John Wiley & Sons & Sons.
- Flanders, J. (1982). A general systems approach to loneliness. In L. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 166-179). New York: John Wiley & Sons.
- Floyd, F., & Widaman, K. (1995). Factor analysis in the development of clinical assessment instruments. *Psychological Assessment, 7*, 286-299.

- Foubert, J. & Sholley, B. (1996). Effects of gender, gender role, and *individualized trust on self-disclosure*. *Journal of Social Behavior and Personality*, 11, 277-288.
- Franken, R., & Brown, D. (1995). Why do people like competition? The motivation for winning, putting forth effort, improving one's performance, performing well, being instrumental, and expressing forceful/aggressive behaviour. *Personality and Individual Differences*, 19 (2), 175-184.
- Freeman, F. (1934). *Individual differences: the nature and causes of variations in intelligence and special abilities*. London: Harrap.
- Fromme, A. (1965) *The Ability to Love*. New York: Pocket Books.
- Fromm-Reichmann, F. (1959). Loneliness. *Psychiatry*, 22, 1-15.
- Gaev, D. (1976). *The psychology of loneliness*. Columbus: Adams.
- Gerson, A., & Perlman, D. (1979). Loneliness and expressive communication. *Journal of Abnormal Psychology*, 88, 258-261.
- Giacalone, R., & Jurkiewicz, C. (2003). Toward a science of workplace spirituality. In R. Giacalone & C. Jurkiewicz (Eds.), *Handbook of workplace spirituality and organisational performance*. Armonk, New York: M.E. Sharp.
- Gilbreath, B. (2001). *Supervisor behaviour and employee psychological wellbeing*. Unpublished doctoral dissertation. New Mexico State University, Las Cruces, USA.
- Gilbreath, B. (2004). Creating healthy workplaces: The supervisor's role. In C. Cooper & I. Robertson (Eds.), *International Review of Industrial and Organizational Psychology*, 19, 93-118.
- Goldberg, L. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality Psychology in Europe*, vol. 7 (pp. 7-28). Tilburg, The Netherlands: Tilburg University Press.

- Goswick, R., & Jones, W. (1981). Loneliness, self-concept, and adjustment. *Journal of Psychology, 107*, 237-240.
- Gotesky, R. (1965). Aloneness, loneliness, isolation, solitude. In J. Edie (ed.), *An invitation to phenomenology*. Chicago, IL: Quadrangle Books.
- Graham, J., Cumsille, P., & Elek-Fisk, E. (2003). Methods for handling missing data. In J. Schinka & W. Velicer (Eds.). *Research Methods in Psychology* (pp. 87-114). New York: John Wiley & Sons.
- Green, V. & Wildermuth, N. (1993). Self-focus, other-focus, and interpersonal needs as correlates of loneliness. *Psychological Reports, 73*, 843-850.
- Greene, M., & Kaplan, B. (1978). Aspects of loneliness in the therapeutic situation. *International Review of Psycho-analysis, 5*, 532-540.
- Greenglass, E. (1993). The contribution of social support to coping strategies. *Applied Psychology: An International Review, 42*, 323-340.
- Greenglass, E., Burke, R., & Konarski, R. (1987). The impact of social support on the development of burnout in teachers: Examination of a model. *Work & Stress, 11* (3), 267-278.
- Greenhaus, J., Parasuraman, A., & Wormley, W. (1990). Effects of race on organisational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal, 33*(1), 64-86.
- Gregorich, S. (1999). High RMSEA, but fine fit with other measures. SEMNET Archives retrieved from the World Wide Web on 17 November 2004 from <http://bama.ua.edu/cgi-bin/wa?A2=ind9910&L=semnet&T=0&F=&S=&P=35086>.
- Gumbert, D., & Boyd, D. (1984). The loneliness of the small business owner. *Harvard Business Review, 62* (6), 33-38.
- Gutek, B. (1985). *Sex and the workplace*. San Francisco, CA: Jossey-Bass.

- Hackman, J., & Lawler, E. (1971). Employee Reactions to Job Characteristics. *Journal of Applied Psychology Monograph*, 55, 259-286.
- Hackman, J., & Morris, C. (1975). Group tasks, group interaction process, and group performance effectiveness: A review and proposed integration. In L. Berkowitz (ed.), *Advances in Experimental Social Psychology*. New York: Academic Press.
- Hackman, J., & Oldham, G. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60, 159-170.
- Hackman, R., & Lawler, E. (1971). Employee Reactions to Job Characteristics. *Journal of Applied Psychology*, 55, 259-286.
- Hall, R., Snell, A., & Foust, M. (1999). Item parceling strategies in SEM: Investigating the subtle effects of unmodeled secondary constructs. *Organization Research Methods*, 2, 233-256.
- Hancock, B. (1986). *Loneliness: Symptoms and social concerns*. New York: University Press of America.
- Hanisch, K. A. (1995). Organizational withdrawal. In N. Nicholson (Ed.), *The Blackwell encyclopaedic dictionary of organizational behavior* (p. 604). Cambridge, MA: Blackwell.
- Hanisch, K. A., & Hulin, C. L. (1991). General attitudes and organizational withdrawal: An evaluation of a causal model. *Journal of Vocational Behavior*, 39, 110-128.
- Hart, L., Zasloff, R., & Benfatto, A. (1996). The socialization role of hearing dogs. *Applied Animal Behaviour Science*, 47, 7-15.
- Hart, P. (1999). Predicting employee life satisfaction: A coherent model of personality, work and nonwork experiences, and domain satisfaction. *Journal of Applied Psychology*, 84, 564-584.
- Hartog, J., Audy, J., & Cohen, Y. (1980). *The anatomy of loneliness*. New York: International Universities Press.

- Haynes, S., Richard, D., & Kubany, E. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment, 7*, 238-247.
- Hays, R. & DiMatteo, M. (1987). A short-form measure of loneliness. *Journal of Personality Assessment, 51* (1), 69-81.
- Hibbard, D. (2000). *The influence of two dimensions of competitiveness on achievement, adjustment, and interpersonal relationships among high school seniors*. Unpublished Doctoral Dissertation. University of Texas At Dallas, USA.
- Hill, C. (1987). Affiliation motivation: People who need people ... but in different ways. *Journal of Personality and Social Psychology, 52* (5), 1008-1018.
- Hochschild, A. (1997). *The time bind: When work becomes home and home becomes work*. New York: Metropolitan Books.
- Hogan, R., Curphy, G., & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American Psychologist, 49*, 493-504.
- Hoglund, C. & Collison, B. (1989). Loneliness and irrational beliefs among college students. *Journal of College Student Development, 30*, 53-58.
- Hojat, M. (1982). Psychometric characteristics of the UCLA Loneliness Scale: A study with Iranian college students. *Educational & Psychological Measurement, 42*(3), 917-925.
- Hom, P. W., & Griffeth, R. W. (1995). *Employee turnover*. Cincinnati, OH: South-Western College Publishing.
- Hom, P., Caranikas-Walker, F., Prussia, G., & Griffeth, R. (1992). A meta-analytical structural equations analysis of a model of employee turnover. *Journal of Applied Psychology, 77*, 890-909.
- Horowitz, L., French, R., & Anderson, C. (1982). The prototype of a lonely person. In L. Peplau & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy* (pp. 351-378). New York: John Wiley & Sons.

- Houkes, I., Janssen, P., de Jonge, J., Nijhuis, F. (2001). Specific relationships between work characteristics and intrinsic work motivation, burnout and turnover intention: A multi-sample analysis. *European Journal of Work and Organizational Psychology, 10*(1), 1-23.
- House, J. (1981). *Work stress and social support*. Reading, MA: Addison-Wesley.
- House, J., Landis, K., & Umberson, D. (1988). Social relationships and health. *Science, 241*, 540-545.
- Howard, M. (2002). *Perceptions of isolation among Georgia high school principals*. Unpublished doctoral dissertation. Georgia Southern University, Georgia.
- Hu, L., & Bentler, P. (1995). Evaluating model fit. In R. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6* (1), 1-55.
- Inman, J. (2001). Relationships among employees' job satisfaction, satisfaction with co-workers, and interpersonal relationship styles. *Dissertation Abstracts International: Section B: The Sciences & Engineering, 62*(2-B), 1127.
- Jex, S. (1998). *Stress and job performance: Theory, research, and implications for managerial practice*. Thousand Oaks, CA: Sage Publications.
- Jex, S., & Crossley, C. (2005). Organizational Consequences. In J. Barling, E. Kelloway, M. Frone (Eds.), *Handbook of work stress*. Thousand Oaks, CA: Sage Publications.
- Jones, R. (1994). The loneliness of leadership. *The Executive Educator, 16*(3), 26-30.
- Jones, W. (1981). Loneliness and social contact. *Journal of Social Psychology, 113*, 295-296.

- Jones, W. (1982). Loneliness and social behaviour. In L. Peplau & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy* (pp. 238-252). New York: John Wiley & Sons.
- Jones, W., Carpenter, B., & Quintana, D. (1985). Personality and Interpersonal Predictors of Loneliness in Two Cultures. *Journal of Personality and Social Psychology*, 48 (6), 1503-1511.
- Jones, W., Freemon, J., & Goswick, R. (1981). The persistence of loneliness: Self and other determinants. *Journal of Personality*, 49 (1), 27-48.
- Jones, W., Hobbs, S., & Hockenbury, D. (1982). Loneliness and social skill deficits. *Journal of Personality and Social Psychology*, 42, 682-689.
- Jones, W., Hobbs, S., & Hockenbury, D. (1982). Loneliness and social skill deficits. *Journal of Personality and Social Psychology*, 42, 682-689.
- Jones, W., Rose, J., & Russell, D. (1990). Loneliness and social anxiety. In H. Leitenberg (ed.), *Handbook of social and evaluation anxiety*. New York: Plenum Press.
- Joyce, A. (2004). Are friends good for business? *The Christchurch Press*, July 17, 11.
- Judge, T., Bono, J., Ilies, R., & Gerhardt, M. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87, 765-780.
- Kamath, M. & Kanekar, S. (1993). Loneliness, shyness, self-esteem, and extraversion. *Journal of Social Psychology*, 133, 855-857.
- Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Karasek, R., Baker, D., Marxer, F., Ahlbom, A., & Theorell, A. (1981). Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men. *American Journal of Public Health*, 71, 694-705.
- Katz, R. (1978). Job longevity as a situational factor in job satisfaction. *Administrative Science Quarterly*, 23 (2), 204-223.

- Keashly, L., Trott, V., & MacLean, L. (1994). Abusive behavior in the workplace: A preliminary investigation. *Violence & Victims, 9*(4), 341-357.
- Kenny, D. (1979). *Correlation and causality*. New York: John Wiley & Sons and Sons.
- Killeen, C. (1998). Loneliness: An epidemic in modern society. *Journal of Advanced Nursing, 28*, 762-770.
- Kirk, J. (2003). *It's lonely at the (executive) top*. Retrieved from the World Wide Web on 24 July 2003 from [www.workopolis.com/servlet/Content/torontostar/20030609/closed?section=TORSTAR](http://www.workopolis.com/servlet/Content/torontostar/20030609/closed?section=TORSTAR).
- Kirova-Petrova, A. (1997). Exploring children's loneliness feelings. *Dissertation Abstracts International Section A: Humanities & Social Sciences, 58* (5-A), p. 1602.
- Kline, P. (1994). *An easy guide to factor analysis*. London: Routledge.
- Kline, P. (2000). *The handbook of psychological testing*. London: Routledge.
- Kline, R. (1998). *Principles and Practice of Structural Equations Modeling*. New York: Guilford Press.
- Klingman, A. & Hochdorf, Z. (1993). Coping with distress and self harm. The impact of a primary prevention program among adolescents. *Journal of Adolescence, 16*, 121-140.
- Klitzman, S., House, J., Israel, B., & Mero, R. (1990). Work stress, non-work stress, and health. *Journal of Behavioral Medicine, 13*, 243.
- Knight, R.G., Chisholm, B.J. Marsh, N.V., & Godfrey, H.P. (1988). Some normative reliability and factor analytic data for the revised UCLA Loneliness Scale. *Journal of Clinical Psychology, 44*, 203-206.
- Krackhardt, D. & Stern, R. (1988). Informal networks and organizational crises. *Social Psychology Quarterly 51* (2), 123-140.

- Kram, K., & Isabella, L. (1985). Mentoring alternatives: The role of peer relationships in career development. *Academy of Management Journal*, 28, 110-132.
- Kraus, L., Davis, M., Bazzini, D., Church, M., & Kirchman, C. (1993). Personal and social influences on loneliness: The mediating effect of social provisions. *Social Psychology Quarterly*, 56 (1), 37-53.
- Kulik, C., Oldham, G. & Hackman, J. (1987). Work design as an approach to person-environment fit. *Journal of Vocational Behavior*, 31, 278-296.
- Laireiter, A., & Baumann, U. (1992). Network structures and support functions: Theoretical and empirical analyses. In H. Veiel & U. Baumann (Eds.), *The meaning and measurement of social support* (pp. 33-55). New York: Hemisphere.
- Landau, J., & Hammer, T. (1986). Clerical employees' perceptions of intra-organizational career opportunities. *Academy of Management Journal*, 29(2), 385-404.
- Larkin, T., & Larkin, S. (1996). Reaching and changing frontline employees. *Harvard Business Review*, 74, 95-104.
- Larson, R., Csikszentmihalyi, M., & Graef, R. (1982). Time alone in daily experience: Loneliness or renewal? In L. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy* (pp. 40-53). New York: John Wiley & Sons.
- Lau, S. & Green, G. (1992). The social stigma of loneliness: Effect of target person's and perceiver's sex. *Personality and Social Psychology Bulletin*, 18, 182-189.
- Lazarus, R. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Lazarus, R. (1999). *Stress and emotion: a new synthesis*. London, England: Free Association Books.
- Leary, M. (2001). *Interpersonal rejection*. Oxford: Oxford University Press.

- Lee, T. W., Mitchell, T. R., & Wise, L. (1996). An unfolding model of voluntary employee turnover. *Academy of Management Journal*, 39, 5–36.
- Leon, M. (2002). Work in the trenches: Fear and anxiety in the work-place – an exploration. In L. Morrow, I. Verins & E. Willis (Eds.), *Mental health and work: Issues and perspectives*. Adelaide, South Australia: Auseinet.
- Lim, V. (1996). Job insecurity and its outcomes: Moderating effects of work-based and nonwork-based social support. *Human Relations*, 49, 171-194.
- Lindorff, M. (2001). Are they lonely at the top? Social relationships and social support among Australian Managers. *Work and Stress*, 15 (3), 274-282.
- Little, R. & Rubin, D. *Statistical Analysis with Missing Data*. NewYork: Wiley.
- Little, T., Cunningham, W., Shahar, G., & Widaman, K. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151-173.
- Long, J. (1983). *Confirmatory factor analysis*. Newbury Park, CA: Sage.
- Lu, L. (1999). Work motivation, job stress and employees' wellbeing. *Journal of Applied Management Studies*, 8(1), 61-72.
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, 4, 84-99.
- MacCallum, R., & Austin, J. (2000). Applications of structural equation modelling in psychological research. *Annual Review of Psychology*, 51, 201-226.
- Marangoni, C. & Ickes, W. (1989) Loneliness: A theoretical review with implications for measurement. *Journal of Social & Personal Relationships*, 6(1), 93-128.
- Marcelissen, F., Winnubst, J., Buunk, B., & de Wolfe, C. (1988). Social support and occupational stress: A causal analysis. *Social Science and Medicine*, 26, 365-373.

- Martin, U., & Schinke, S. (1998). Organisational and individual factors influencing job satisfaction and burnout of mental health workers. *Social Work in Health Care*, 28(2), 51-62.
- Matthews, B., & Shepherd, J. (2002). Dimensionality of Cook and Wall's (1980) British Organisational Commitment Scale revisited. *Journal of Occupational and Organizational Psychology*, 75(3), 369-376.
- McCann, B., Russo, J., & Benjamin, A. (1997). Hostility, social support, and perceptions of work. *Journal of Occupational Health Psychology*, 2 (2), 175-185.
- McCrae, R., & Costa, P. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, 52, 81-90.
- McDonald, A. (1985). Conflict at the summit: A deadly game. In E. Collins (Ed.), *The executive dilemma* (pp. 15-29). New York: Wiley.
- McLean, A. (1979). *Work Stress*. New York: Addison-Wesley.
- McWhirter, B. (1990). Loneliness: A review of current literature, with implications for counselling and research. *Journal of Counselling and Development*, 68, 417-422.
- Medora, N., & Woodward, J. (1986). Loneliness among adolescent college students at a midwestern university. *Adolescence*, 21, 391-402.
- Melamed, Y., Szor, H., & Bernstein, E. (2001). The Loneliness of the Therapist in the Public Outpatient Clinic. *Journal of Contemporary Psychotherapy*, 31 (2), 103-112.
- Michela, J., & Burke, W. (2000). Organizational culture and climate in transformations for quality and innovation. In N. Ashkanasy, C. Wilderom & M. Peterson (Eds.), *Handbook of organizational culture and climate* (pp. 225-244). Thousand Oaks, CA: Sage Publications.

- Mijuskovic, B. (1979). *Loneliness in philosophy, psychology, and literature*. Assen: Van Gorcum.
- Mitchell, M. (2003). *Overcoming loneliness at work*. Retrieved from the World Wide Web on July 12, 2004 from [http://www.ivillage.co.uk/workcareer/survive/persondev/qas/0,,156475\\_156750,00.html](http://www.ivillage.co.uk/workcareer/survive/persondev/qas/0,,156475_156750,00.html).
- Moore, D., & Schultz, N. (1983). Loneliness at adolescence: Correlates, attributions, and coping. *Journal of Youth & Adolescence*, 12 (2), 95-100.
- Moore, T. (1996). Caring for the Soul. *Executive Excellence*, 13(6), 14.
- Moos, R. (1988). Psychosocial factors in the workplace. In S. Fisher, & J. Reason (Eds.), *Handbook of Life Stress, cognition and health* (pp. 193-209). Chichester, England: John Wiley & Sons & Sons.
- Morrow, P., McElroy, J. & Elliot, S. (1994). The effect of preference for work status, schedule, and shift on work-related attitudes. *Journal of Vocational Behavior*, 45, 202-222.
- Moustakas, C. (1961). *Loneliness*. Englewood Cliffs, NJ: Prentice-Hall.
- Mowday, R., Steers, R. & Porter, L. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14, 224-247.
- Murphy, P. & Kupshik, G. (1992). *Loneliness, stress and wellbeing: A helper's guide*. New York: Tavistock/Routledge.
- Nevitt, J., & Hancock, G. R. (2000). Improving the root mean square error of approximation for nonnormal conditions in structural equation modeling. *Journal of Experimental Education*, 68, 251-268.
- Nielsen, K., Jex, S., & Adams, G. (2000). Development and Validation of Scores on a Two-Dimensional Workplace Friendship Scale. *Educational and Psychological Measurement*, 60, 628-643.
- Nunnally, J.C. (1978). *Psychometric theory*. New York: McGraw-Hill.

- O'Driscoll, M. (2003). *Relationship of work-to-family and family-to-work conflict with satisfaction, psychological strain and physical health: A longitudinal investigation*. Paper presented at the 5<sup>th</sup> Australian Industrial and Organisational Psychology Conference, Melbourne, Australia.
- O'Driscoll, M., & Beehr, T. (1994). Supervisor behaviours, role stressors and uncertainty as predictors of personal outcomes for subordinates. *Journal of Organisational Behaviour, 15*, 141-155.
- O'Driscoll, M., & Dewe, P. (2001). Mediators and moderators of stressor-strain linkages. In P. Perrewe & D. Ganster (Eds.). *Research in occupational stress and wellbeing: Exploring theoretical mechanisms and perspectives* (pp. 257-287). New York: JAI Press, Elsevier Science.
- Odden, C., & Sias, P. (1997). Peer communication relationships and psychological climate. *Communication Quarterly, 45*, 153-166.
- Olsson, U. H., Foss, T., Troye, S. V., & Howell, R. D. (2000). The performance of ML, GLS and WLS estimation in structural equation modeling under conditions of misspecification and nonnormality. *Structural Equation Modeling, 7*, 557-595.
- Ornish, D. (1998). *Love and survival: The scientific basis for the healing power of intimacy*. New York: Harper Collins.
- Page, R., & Cole, G. (1991). Demographic Predictors of Self-Reported Loneliness in Adults. *Psychological Reports, 68*, 939-945.
- Palmer, R. F., Graham, J. W., Taylor, B., & Tatterson, J. (2002). Construct validity in health behaviour research: Interpreting latent variable models involving self-report and objective measures. *Journal of Behavioural Medicine, 25*, 525-550.
- Parker, J., & Asher, S. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*(4): 611-621.

- Parkes, K. (1995). The effects of objective workload on cognitive performance in field settings: A two-period cross-over trial. *Applied Cognitive Psychology, 9*, 153-171.
- Peccei, R., & Guest, D. (1993). *The Dimensionality and Stability of Organisational Commitment: A Longitudinal Examination of Cook and Wall's (1980) Organisational Commitment Scale (BOCS)*. Centre for Economic Performance, London School of Economics, Discussion Paper 149.
- Penley, J., & Tomaka, J. (2002). Associations among the Big Five, emotional responses and coping with acute stress. *Personality and Individual Differences, 32*, 1215-1228.
- Pennebaker, J. (1997). *Opening up: The healing power of expressing emotions*. New York: Jilford.
- Peplau, L. & Goldston, S. (1984). *Preventing the harmful consequences of severe and persistent loneliness*. Maryland: National Institute of Mental Health.
- Peplau, L. (1985). Loneliness research: Basic concepts and findings. In I. Sarason & B. Sarason (Eds.), *Social support: Theory, research and application* (pp. 270-286). Boston, MA: Martinus Nijhof.
- Peplau, L., & Perlman, D. (1982). Perspectives on loneliness. In L. Peplau & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy*. New York: John Wiley & Sons.
- Perlman, D. & Peplau, L. (1984). Loneliness research: A survey of empirical findings. In L. Peplau & S. Goldston (Eds.), *Preventing the harmful consequences of severe and persistent loneliness*. Maryland: National Institute of Mental Health.
- Pfeffer, J. (2003). Business and the spirit. In R. Giacalone & C. Jurkiewicz (Eds.), *Handbook of workplace spirituality and organisational performance*. Armonk, New York: M.E. Sharp.
- Pfeifer, J., & Veiga, J. (1999). Putting people first for organization success. *Academy of Management Executive, 13*(2), 37-51.

- Pinquart, M. (2003). Loneliness in married, widowed, divorced, and never-married older adults. *Journal of Social & Personal Relationships*, 20 (1), 31-53.
- Pinquart, M., & Sorensen, S. (2003). Risk factors for loneliness in adulthood and old age – A meta analysis. *Advances in Psychology Research*, 19, 111-143.
- Podsakoff, P., MacKenzie, S., Yeon-Lee, J., & Podsakoff, N. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88 (5), 879-903.
- Potthoff, H. (1976). *Loneliness: Understanding and dealing with it*. Nashville, TN: Abingdon.
- Quine, L. (1999). Workplace bullying in NHS community trust: staff questionnaire survey. *British Medical Journal*, 318(7178), 228–232.
- Raftery, A. (1993). Bayesian model selection in structural equation models. In K. Bollen & J. Long (Eds.), *Testing structural equation models* (pp. 163-180). Newbury Park, CA: Sage.
- Raftery, A. (1995). Bayesian model selection in social research. In P. Marsden (Ed.), *Sociological Methodology* (pp. 111-195). Cambridge, MA: Blackwell.
- Rawlins, W. (1992). *Friendship matters: Communication, dialectics, and the life course*. New York: Aldine de Gruyter.
- Reinking, K., & Bell, R. (1991). Relationships among loneliness, communication competence, and career success in a state bureaucracy: A field study of the ‘lonely at the top’ maxim. *Communication Quarterly*, 39 (4), 358-373.
- Rice, R., Near, J. & Hunt, R. (1980). The job-satisfaction/life-satisfaction relationship: A review of empirical research. *Basic and Applied Social Psychology*, 1, 37-64.
- Riesman, D. (1961). *The lonely crowd: A study of the changing American character*. New Haven, CT: Yale University Press.

- Riggio, R., Watring, K., & Throckmorton, B. (1993). Social skills, social support, and psychosocial adjustment. *Personality and Individual Differences, 15*, 275-280.
- Riordan, C., & Griffeth, R. (1995). The opportunity for friendship in the workplace: An underexplored construct. *Journal of Business and Psychology, 10*, 141 - 154.
- Riskind, J. & Wilson, D. (1982). Interpersonal attraction for the competitive person: Unscrambling the competition paradox. *Journal of Applied Social Psychology, 12*, 444-452.
- Roberts, R., Lewinsohn, P., & Seeley, J. (2003). A brief measure of loneliness suitable for use with adolescents. *Psychological Reports, 72*, 1379-1391.
- Rogers, C. (1970) *On Encounter Groups*. New York: Harper and Row.
- Rokach, A. & Brock, H. (1997). Loneliness and the effects of life changes. *The Journal of Psychology, 131* (3), 284-298.
- Rokach, A. & Brock, H. (1998). Coping with loneliness. *The Journal of Psychology, 132* (1), 107-121.
- Rokach, A. (1985). Theoretical approaches to loneliness: From a univariate to a multidimensional experience. *Review of existential psychology and psychiatry, 19* (2/3), 225-254.
- Rokach, A. (1989). Antecedents of loneliness: A factorial analysis. *The Journal of Psychology, 123* (4), 369-384.
- Rokach, A. (1996). The causes of loneliness. *Psychology: A Journal of Human Behavior, 33*, 1-11.
- Rokach, A. (1998). The relation of cultural background to the causes of loneliness. *Journal of Social and Clinical Psychology, 17* (1), 75-88.
- Rokach, A. (1999). Cultural background and coping with loneliness. *The Journal of Psychology, 133* (2), 217-229.
- Rokach, A. (2000). Loneliness and the life cycle. *Psychological Reports, 86* (2), 629-642.

- Rokach, A. (2001). Strategies of coping with loneliness throughout the lifespan. *Current Psychology: Developmental, Learning, Personality, Social*, 20 (1), 3-18.
- Rook, K. (1984a). Research on social support, loneliness, and social isolation. *Review of Personality and Social Psychology*, 5, 239-264.
- Rook, K. (1984b). Promoting social bonding: Strategies for helping the lonely and social isolated. *American Psychologist*, 39 (2), 1389-1407.
- Rook, K. (1987). Social support versus companionship: Effects on life stress, loneliness, and evaluations by others. *Journal of Personality and Social Psychology*, 52, 1132-1147.
- Rook, K. (1988). Toward a more differentiated view of loneliness. In S. Duck (Ed). *Handbook of personal relationships: Theory, research and interventions*. New York: Wiley.
- Rook, K. (2000). Loneliness. In A. Kazdin (ed.), *Encyclopaedia of psychology*, Vol. 5 (pp. 73-76). Oxford: Oxford University Press.
- Rook, K., & Peplau, L. (1982). Perspectives on helping the lonely. In L. Peplau & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy* (pp. 351-378). New York: John Wiley & Sons.
- Rousseau, D. (1995). *Psychological contracts in organisations: Understanding written and unwritten agreements*. Thousand Oaks, CA: Sage Publications.
- Rubenstein, C. & Shaver, P. (1982). The experience of loneliness. In L. Peplau, & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy* (pp. 206-223). New York: John Wiley & Sons.
- Rubin, D. (1987). *Multiple imputation for nonresponse in surveys*. New York: John Wiley & Sons.
- Russell, D. (1982). The measurement of loneliness. In L. Peplau & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy* (pp. 351-378). New York: John Wiley & Sons.

- Russell, D. (1996). UCLA Loneliness Scale (version 3). Reliability, validity and factor structure. *Journal of Personality Assessment*, 66 (1), 20-40.
- Russell, D., Cutrona, C., Rose, J. & Yurko, K. (1984). Social and emotional loneliness: An exploration of Weiss's typology of loneliness. *Journal of Personality and Social Psychology*, 46, 1313-1321.
- Russell, D., Peplau, L., & Cutrona, C. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39 (3), 472-480.
- Russell, D., Peplau, L., & Ferguson, M. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, 42(3), 290-294.
- Ryan, K., & Oestreich, D. (1991). *Driving fear out of the organisation*. San Francisco: Jossey-Bass Publishers.
- Ryff, C., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9, 1-28.
- Sackett, P., and Larson, J. (1990). Research strategies and tactics in I/O psychology. In M. D. Dunnette and L. Hough (Eds.) *Handbook of industrial and organizational psychology*. Palo Alto, CA: Consulting Psychologists Press.
- Saklofske, D., & Yackulic, R. (1989). Personality predictors of loneliness. *Personality and Individual Differences*, 10 (4), 467-472.
- Saklofske, D., Yackulic, R., & Kelly, I. (1986). Personality and loneliness. *Personality and Individual Differences*, 7 (6), 899-901.
- Saranson, B., Saranson, I., & Pierce, G. (1990). *Social Support: An interactional view*. New York: Wiley.
- Scalise, J., Ginter, E., & Gerstein, L. (1984). A multidimensional loneliness measure: The loneliness rating scale. *Journal of Personality Assessment*, 48, 525-530.

- Schafer, J. & Olsen, M. (1998). Multiple imputation for multivariate missing-data problems: A data analyst's perspective. *Multivariate Behavioral Research*, 33, 545-571.
- Schafer, J. (1997). *Analysis of incomplete multivariate data*. New York: Chapman & Hall.
- Schafer, J., & Graham, J. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147-177.
- Schill, T., Toves, C., & Ramanaiah, N. (1981). UCLA loneliness scale and effects of stress. *Psychological Reports*, 49, 257-258.
- Schmidt, L., & Fox, N. (1995). Individual differences in young adults' shyness and sociability: Personality and health correlates. *Personality and Individual Differences*, 19, 455-462.
- Schmidt, N. & Sermat, V. (1983). Measuring loneliness in different relationships. *Journal of Personality and Social Psychology*, 44 (5), 1038-1047.
- Schultz, N. & Moore, D. (1986). The loneliness experience of college students: Sex differences. *Personality and Social Psychology Bulletin*, 12, 111-119.
- Schumacker, R., & Lomax, R. (1996). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum.
- Segrin, C. (1998). Interpersonal communication problems associated with depression and loneliness. In P.A. Andersen & L. K. Guerrero (Eds.), *Handbook of communication and emotion: Research, theory, applications and contexts* (pp. 215-242). San Diego, CA: Academic Press.
- Seidenberg, R. (1980). The lonely marriage in corporate America. In J. Hartog, J. Audy, & Y. Cohen (Eds.), *The anatomy of loneliness* (pp. 186-203). New York: International Universities Press.
- Selye, H. (1980). The stress concept today. In I. Kutash, L. Schlesinger, & Associates (Eds.), *Handbook on stress and anxiety* (pp. 127-144). San Francisco, CA: Jossey Bass.

- Sergin, C. (1993). Effects of dysphoria and loneliness on social perceptual skills. *Perceptual and Motor Skills*, 77, 1315-1329.
- Sergin, C., & Kinney, T. (1995). Social skills deficits among the socially anxious: Rejection from others and loneliness. *Motivation and Emotion*, 19, 1-24.
- Sermat, V. (1978). Sources of loneliness. *Essence*, 2, 271-276.
- Sermat, V. (1980). Some situational and personality correlates of loneliness. In J. Hartog, J. Audy, & Y. Cohen (Eds.), *The anatomy of loneliness* (pp. 305-318). New York: International Universities Press.
- Shadur, M., Kienzle, R., & Rodwell, J. (1999). The relationship between organizational climate and employee perceptions of involvement. *Group and Organization Management*, 24 (4), 479-504.
- Shaver, P. & Brennan, K. (1991). Measures of depression and loneliness. In J. Robinson & P. Shaver (Eds.), *Measures of personality and social psychological attitudes*. San Diego: Academic Press.
- Shaver, P., Furman, W., & Buhrmester, D. (1985). Transition to college: Network changes, social skills, and loneliness. In S. Duck & D. Perlman (Eds.), *Understanding personal relationships: An interdisciplinary approach* (pp. 193-219). London: Sage.
- Sias, P., & Cahill, D. (1998). From co-workers to friends: The development of peer friendships in the workplace. *Western Journal of Communication*, 62 (3), 273-299.
- Sias, P., & Jablin, F. (1995). Differential superior-subordinate relations, perceptions of fairness, and co-worker communication. *Human Communication Research*, 22, 5-38.
- Slater, P. (1976). *The Pursuit of Loneliness: American Culture at the Breaking Point*. Boston, MA: Beacon.

- Solano, C. & Koester, N. (1989). Loneliness and communication problems: subjective anxiety or objective skills? *Personality and social psychological bulletin*, 15 (1), 126-133.
- Solano, C.H. (1980). Two measures of loneliness: A comparison. *Psychological Reports*, 46, 23-28.
- Sparks, K., Faragher, B., & Cooper, C. (2001). Wellbeing and occupational health in the 21<sup>st</sup> century workplace. *Journal of Occupational and Organizational Psychology*, 74, 489–509.
- Spector, P & Fox, S. (2004) *Counterproductive Workplace Behavior: Investigations of Actors and Targets*. Washington, DC: American Psychological Association.
- Spector, P. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of Organizational Behavior*, 15, 365-392.
- Spielberger, C. (1983). *State-Trait Anxiety Inventory for Adults: Test Manual*. Redwood City, CA: Consulting Psychologists Press.
- Spitzberg, B., & Hurt, H. (1987). The relationship of interpersonal competence and skills to reported loneliness across time. *Journal of Social Behavior & Personality. Special Issue: Loneliness: Theory, research, and applications*, 2 (2, pt 2), 157-172.
- Steel, R., & Ovalle, N. (1984). A Review and Meta-analysis of Research on the Relationship between Behavioral Intentions and Employee Turnover. *Journal Applied Psychology*, 69 (4), 673-86.
- Steiger, J. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25, 173-180.
- Steinburg, A., Sullivan, V. & Montoya, L. (1999). Loneliness and social isolation in the workforce for Deaf individuals during the transition years: A preliminary investigation. *Journal of Applied Rehabilitation Counseling*, 30 (1), 22-30.

- Stephan, E., Faeth, M., & Lamm, H. (1988). Loneliness as related to various personality and environmental measures: Research with the German adaptation of the UCLA Loneliness Scale. *Social Behavior and Personality*, *16*, 169-174.
- Stokes, J. (1985). The relation of social network and individual difference variables to loneliness. *Journal of Personality and Social Psychology*, *48* (4), 981-990.
- Stout, J. (1984). Supervisors' structuring and consideration behaviours and workers' job satisfaction, stress, and health problems. *Rehabilitation Bulletin*, *28*, 133-138.
- Stroebe, M., van Vliet, T., Hewstone, M., Willis, H. (2002). Homesickness among students in two cultures: Antecedents and consequences. *British Journal of Psychology*, *93*(2), 147-168.
- Stroebe, W., Stroebe, M., Abakoumkin, G., & Schut, H. (1996). The role of loneliness and social support in adjustment to loss: A test of attachment versus stress theory. *Journal of Personality and Social Psychology*, *70*, 1241-1249.
- Strongman, K. (1996). *The psychology of emotion: Theories of emotion in perspective*, 4<sup>th</sup> edn. West Sussex, England: John Wiley & Sons & Sons.
- Sud, A., & Malik, A. (1999). Job related stress, social support and trait anxiety among school teachers. *Journal of the Indian Academy of Applied Psychology*, *25*(1-2), 25-33.
- Suedfeld, P. (1987). Past the reflection and through the looking-glass: Extending loneliness research. *Journal of Social Behaviour and Personality*, *2*(2, pt 2), 51-56.
- Sullivan, H. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Tabachnick, B. & Fidell, L. (2001). *Using multivariate statistics*. Boston, MA: Allyn and Bacon.
- Tagiuri, R. (1968). The concept of organisational climate. In R. Tagiuri & G. Litwin (Eds.), *Organisational Climate: Explorations of a concept*. Boston: Harvard University.

- Tait, M., Padgett, M., & Baldwin, T. (1989). Job and life satisfaction: A re-evaluation of the strength of the relationship and gender effects as a function of the date of the study. *Journal of Applied Psychology*, 74, 502-507.
- Tanaka, J. (1993). Multifaceted conceptions of fit in structural equation models. In K. Bollen & J. Long (eds.), *Testing structural equations models*. Newbury Park, CA: Sage Publications.
- Tanaka, J., & Huba, G. (1984). Confirmatory hierarchical analyses of measures of psychological distress. *Journal of Personality and Social Psychology*, 46, 621-635.
- Taylor, F. (1947). *Scientific Management*. New York: Harper & Row.
- Thode, H. (2002). *Testing for normality*. New York : Marcel Dekker
- Ukwuoma, A. (1999). Sources of stress experienced by Nigerian Catholic priests. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 60 (4-A), 1031.
- Ullman, J. (2001). Structural equation modeling. In B. Tabachnick & L. Fidell (Eds.), *Using multivariate statistics* (pp. 653-771). Boston, MA: Allyn and Bacon.
- Unden, A. (1996). Social support at work and its relationship to absenteeism. *Work Stress*, 10, 46-61.
- Van Baarsen, B., Snijders, T., Smit, J. & van Duijn, M. (2001). Lonely but not alone: Emotional isolation and social isolation as two distinct dimensions of loneliness in older people. *Educational & Psychological Measurement*, 61(1), 119-135.
- Vandenberg, R., Park, K., DeJoy, D., Wilson, M., & Griffin-Blake, C. (2002). The healthy work organization model: Expanding the view of individual health and wellbeing in the workplace. In P. Perrewe & D. Ganster (Eds.), *Historical and Current Perspectives on Stress and Health* (pp. 57-115). London: Elsevier Science Ltd.

- Vashishtha, A., & Mishra, P. (1999). Social support as related to organizational commitment of supervisors. *Journal of the Indian Academy of Applied Psychology*, 25(1-2), 71-74.
- Vaux, A. (1988). Social and personal factors in loneliness. *Journal of Social and Clinical Psychology*, 6, 462-471.
- Vincenzi, H., & Grabosky, F. (1987). Measuring the emotional/social aspects of loneliness and isolation. *Journal of Social Behavior and Personality*, 2(2), 257-270.
- Viswesvaran, C., Sanchez, J., & Fisher, J. (1998). The role of social support in the process of work-stress: A meta-analysis. *Journal of Vocational Behavior*, 54, 314-334.
- Walkey, F., & McCormick, I. (1985). Multiple replication of factor structures: A logical solution for a number of factor problems. *Multivariate Behavioural Research*, 20, 57-67.
- Walsh, W., Craik, K., & Price, R. (1992). *Person-environment psychology: Models and perspectives*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Warr, P. (1999). Wellbeing and the workplace. In D. Kahneman, E. Diener & N. Schwarz (Eds.), *Wellbeing: The foundations of hedonic psychology*. New York: Russell Sage Foundation.
- Warr, P. (2005). Work, wellbeing, and mental health. In J. Barling, E. Kelloway, M. Frone (Eds.), *Handbook of work stress*. Thousand Oaks, CA: Sage Publications.
- Watson, D., & Clark, L. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, 96, 465-490.
- Weiss, R. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: The MIT Press.
- Weiss, R. (1974). The provisions of social relationships. In Z. Rubin (Ed.), *Doing unto others*. Englewood Cliffs, NJ: Prentice-Hall.

- Weiss, R. (1982). Issues in the study of loneliness. In L. Peplau & D. Perlman (Eds.), *Loneliness: A source book of current theory, research and therapy* (pp. 351-378). New York: John Wiley & Sons.
- Weiss, R. (1987). Reflections on the present state of loneliness research. *Journal of Social Behavior and Personality*, 2 (2), 1-16.
- Weiss, R. (1989). Reflections on the present state of loneliness research. In M. Hojat & R. Crandall (Eds.), *Loneliness: Theory, research and applications* (pp. 51-56). Newbury Park, California: Sage Publications.
- West, S. G., Finch, F. J., & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56-75). Thousand Oaks, CA: Sage.
- Westaway, M., Maritz, C., & Golele, N. (2003). Empirical testing of the satisfaction with life scale: A South African pilot study. *Psychological Reports*, 92 (2), 551-554.
- Williams, J., & Solano, C. (1983). The social reality of feeling lonely: Friendship and reciprocation. *Personality and Social Psychology Bulletin*, 9, 237-242.
- Williams, K. (2002). *Ostracism: The power of silence*. New York: The Guildford Press.
- Wilson, P. (2000). *Internet Users: Who are they?* Retrieved from the World Wide Web on 5 October 2004 from <http://www.environmentics.com.au/internetuse>
- Winstead, B., Derlega, V., Montgomery, M., & Pilkington, C. (1995). The quality of friendship at work and job satisfaction. *Journal of Social and Personal Relationships*, 12 (2), 199-215.
- Wittenberg, M., & Reis, H. (1986). Loneliness, social skills, and social perception. *Personality & Social Psychology Bulletin*, 12 (1), 121-130.
- Wolden, W., & Good, L. (1995). The retail environment: Relationship of tension and social support. *Clothing & Textiles Research Journal*, 13(4), 280-288.

- Wood, L. A. (1986) Loneliness. In Harré, R. (ed.) *The Social Construction of Emotions*. Oxford: Basil Blackwell Ltd.
- Wright, J. (1992). *The competitive style of life: Its relationship to envy and the potential effects on interpersonal relationships*. Unpublished Doctoral Dissertation. California School of Professional Psychology, Fresno, USA.
- Wright, P. (1985). The acquaintance description form. In S. Duck & D. Perlman (Eds.), *Understanding personal relationships: An interdisciplinary approach* (pp. 39-62). London: Sage.
- Yager, J. (1997). *Friendshifts: The power of friendship and how it shapes our lives*. Stamford, CT: Hannacroix Creek Books.
- Yalom, I. (1998). It's lonely at the top: Isolation as a problem for CEOs. *Inc.*, 20 (5), 39-41.
- Young, J. (1982). Loneliness, depression and cognitive therapy: Theory and application. In L. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy*. New York: Wiley-Interscience.
- Zakahi, W. & Duran, R. (1982). All the lonely people: The relationship among loneliness, communicative competence, and communication anxiety. *Communication Quarterly*, 30, 203-209.
- Zilboorg, C. (1938) Loneliness. *Atlantic Monthly*, 161, 45-54.
- Zumbo, B., & Rupp, A. (2004). Responsible modelling of measurement data for appropriate inferences. In D. Kaplan (Ed.), *The Sage handbook of quantitative methodology for the social sciences*. Thousand Oaks, CA: Sage Publications.

## **APPENDICES**

**Appendix 1:** Initial Pool of Items for the Loneliness at Work Scale

**Appendix 2:** Revised Pool of Items for the Loneliness at Work Scale

**Appendix 3:** Research Questionnaire for Main Study

**Appendix 4:** Table of Means, Standard Deviations, Ranges and Correlations Before and After Multiple Imputation Calculations

### Appendix 1: Initial Pool of Items for the Loneliness at Work Scale

	Items Relating to Social Support and Friendship from Co-Workers
1	I find it difficult to form friendships at work
2	People at work take the trouble to get to know me*
3	I feel that my colleagues don't want anything to do with me
4	I have friends at work who would help me out in a time of need*
5	I purposely avoid interacting with my colleagues
6	I feel happy with the relationships I have made through work*
7	I feel isolated from the people I work with
8	There are people I can talk to at work*
9	I feel left out from social activities at work
10	I feel left out from office conversation
11	I feel part of a group of friends at work*
12	There are people I can turn to if I feel I am not coping at work*
13	I often become shy around work colleagues
14	The people I work with are generally too busy to bother about my problems
15	Members of my work group give me the support I need*
16	I participate in social activities at work*
17	I am excluded from the company of my co-workers
18	I can talk to my colleagues about the pressures I face at work*
19	The friendships I have with people at work are superficial
20	There is someone at work who I can talk to about my day to day work problems*
21	I wish to be included in the social activities at work more
22	I feel I belong to a network of friends at work*
23	I often feel deserted when I am under pressure at work
24	Because of my demanding workload I am unable to socialise with others as much as I would like to
25	I fear I may be ostracised because of the decisions I have to make at work
26	I feel I fit in socially at work*
27	I have someone to spend time with on my lunch break with if I want to*
28	I get support from the people I work with*
29	I feel left out from work groups
30	I can turn to my colleagues for help when I need it*

31	I feel that friendships at work get in the way of my career success
32	I find it difficult to make friends at work
33	I can find a friend at work when I need one*
34	I feel that there is no one at my level with whom I can discuss work issues with
	<b>Affiliation with Co-Workers/Colleagues</b>
35	I can share personal thoughts with the people I work with*
36	I have a lot in common with my fellow workers*
37	My co-workers are not interested in relating to me
38	I like the people I work with*
39	My colleagues are genuinely concerned about my welfare*
40	My colleagues value my opinion when a decision is to be made*
41	I seem to have little to say to the people I work with
42	I feel that my colleagues acknowledge my strengths and positive qualities*
43	I have difficulty relating to others at work
44	I receive support from my colleagues when I propose a new idea*
45	I have a lot in common with my colleagues*
46	My ideas are shared with the people I work with*
47	I get along very well with my colleagues*
48	I feel that my colleagues put me down
49	People at work understand me*
50	If I achieve well at work my colleagues resent me for it
51	My colleagues generally are interested in what I am doing*
52	I feel valued by my co-workers*
53	I can identify with the people I work with*
54	I feel that no one at work really knows me well
55	People in my workplace are really interested in what I think*
56	When I'm at work I feel as if there is no one who understands me
	<b>Items Relating to Emotional Deprivation at Work</b>
57	I feel as if the people I work with don't even know I exist
58	I feel alienated from the people I work with
59	I feel appreciated by the people I work with*
60	Nobody at work really knows who I am
61	I feel disconnected from others at work

62	I feel that people at work go out of their way to ignore me
63	I feel myself withdrawing from the people I work with
64	I feel misunderstood by the people I work with
65	I feel that I do not matter to those I work with
66	I feel the absence of a meaningful relationship at work
67	I feel I have no one at work I can lean on in a time of need
68	There is no one I can really trust at work
69	I have work friends with whom I can talk openly*
70	I often feel alone when I'm at work
71	I feel content with the relationships I have made at work*
72	I feel deserted by those I work with
73	I feel like I don't have a friend in the world
74	There is someone at work with whom to share my work achievements and disappointments*
75	I feel ignored by my fellow workers
76	I lack companionship at work
77	At work I often feel left out
78	When I'm working I feel that people are around me but not really with me
79	I allow myself to become close to my colleagues*
80	I feel that no one cares about me in this organisation
81	People at work do not seem to notice that I am around
82	I believe that no one cares what happens to me at work
83	I feel in tune with others I work with*
84	I feel rejected by my work colleagues
85	I feel unhappy at work because I don't have anyone to talk to
86	I feel emotionally distant from the people I work with
87	There are people at work who take the trouble to listen to me*
88	I feel rejected by my work colleagues
89	I feel I burden others at work with my problems
90	I feel like I'm invisible to others in my workplace

*Note:* Items with an asterisk (\*) are reversed coded.

## Appendix 2: Revised Pool of Items for the Loneliness at Work Scale

Below is a list of statements concerning the way you may have been feeling over the past month. Please indicate the degree to which you agree or disagree with each statement by circling the number that corresponds to the following options:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Somewhat Disagree
- 4 = Neither Agree nor Disagree
- 5 = Somewhat Agree
- 6 = Agree
- 7 = Strongly Agree

	<b>Item</b>	<b>Item-Total Correlations</b>
1	People at work take the time to get to know me*	0.48
2	I feel that some of my co-workers don't want anything to do with me	0.42
3	There are people I can turn to if I am not coping at work*	0.38
4	I purposely avoid interacting with my co-workers	0.66
5	I have companionship at work*	0.61
6	I feel isolated from the people I work with	0.61
7	People at my work give me the support I need*	0.62
8	I often feel left out from office conversation	0.48
9	I feel part of a group of friends at work*	0.66
10	I often become shy around co-workers	0.43
11	People at work are generally too busy to bother with my problems	0.61
12	I am excluded from the company of my co-workers	0.68
13	The friendships I have with people at work are superficial	0.58
14	There is someone at work who I can talk to about my data to day work problems if I need to*	0.61
15	I wish to be included more in the social activities at work	0.27
16	I get support from the people I work with*	0.64
17	I often feel deserted when I am under pressure at work	0.43
18	Because of my demanding workload I am unable to socialise with others as much as I would like to	0.56
19	I have someone to spend time with on my breaks if I want to*	0.55
20	I fear I may be rejected because of the decisions I have to	0.42

	make at work	
21	I fit in socially at work*	0.69
22	I feel that friendships at work get in the way of my career success	0.23
23	I can find a friend at work when I need one*	0.66
24	There is no one at my level I can discuss work issues with	0.53
25	I can share personal thoughts with my co-workers if I want to*	0.61
26	My co-workers are not interested in relating to me	0.74
27	I seem to have little to say to the people I work with	0.65
28	My co-workers are genuinely concerned about my welfare*	0.60
29	I feel that my co-workers acknowledge my strengths and positive qualities*	0.60
30	I have difficulty relating to others at work	0.73
31	I receive support from my co-workers when I propose a new idea*	0.59
32	I get along well with my co-workers*	0.78
33	I feel that my co-workers put me down	0.53
34	People at work accept me for who I am*	0.70
35	If I achieve well at work my co-workers are happy for me*	0.64
36	I feel valued by my co-workers*	0.76
37	People at work are interested in what I think*	0.69
38	I feel alienated from my co-workers	0.75
39	I feel appreciated by the people I work with*	0.74
40	I feel disconnected from others at work	0.81
41	My co-workers value my opinion when a decision is to be made*	0.57
42	I feel ignored by my fellow workers	0.78
43	I feel myself withdrawing from the people I work with	0.78
44	I feel I have meaningful relationships at work*	0.71
45	There is no one I can really trust at work	0.63
46	I have work friends with whom I can talk openly if I want to*	0.68
47	I often feel isolated when I'm with my co-workers	0.77
48	I feel satisfied with the relationships I have made at work*	0.68
49	I sometimes feel deserted by those I work with	0.68
50	There is someone at work with whom I can share my work	0.69

	achievements and disappointments if I want to*	
51	At work I often feel left out	0.73
52	I can identify with the people I work with*	0.69
53	People at work do not seem to notice that I am around	0.72
54	I believe that no one cares what happens to me at work	0.68
55	I have a lot in common with my co-workers*	0.57
56	I feel rejected by my co-workers	0.76
57	I feel emotionally distant from the people I work with	0.76
58	There are people at work who take the trouble to listen to me*	0.75
59	There is someone I can confide in at work if I need to*	0.70
60	I have a sense of belonging in this organisation*	0.64

*Note:* Items with an asterisk (\*) are reversed coded.

## **Appendix 3: Research Questionnaire for Main Study**

### **A Research Project Investigating Social Relationships at Work**

You are invited to take part in a research project looking at social interaction in the workplace. The aim of this study is to advance our understanding of how occupational conditions can affect social relationships and wellbeing at work.

Your participation will involve the completion of an online questionnaire (below), which asks you about the characteristics of your job and organisation, and how you feel about your work situation. There are a few questions about your personal circumstances which will help me understand what role demographic factors play in the development of social relationships at work.

If possible, please avoid discussing the questions with your co-workers while you are completing the questionnaire.

The questionnaire will take about 20 minutes to complete. Please note that there are no right or wrong responses. The questionnaire is completely anonymous, and you will not be identified as a participant.

The results of this research will be reported in a doctoral dissertation and may be published in academic journals or conference proceedings. The information you provide will not be linked back to you in any way.

By submitting the questionnaire it is understood that you have consented to participate in the research project, and that you consent to publication of the research results with the understanding that anonymity will be preserved.

You may withdraw your participation, including withdrawal of any information you have provided, up until the time your questionnaire has been submitted. Because it is anonymous, it cannot be retrieved after that time.

The research is being carried out by Sarah Wright under the supervision of Dr Chris Burt and Professor Ken Strongman at the University of Canterbury. Please contact the principal researcher, Sarah Wright (slc64@student.canterbury.ac.nz) if you have any questions or comments about your participation in the project.

Thank you for your participation!

Sarah Wright  
PhD Student  
Psychology Department  
University of Canterbury  
Private Bag 4800  
Christchurch  
New Zealand  
Email: slc64@student.canterbury.ac.nz

#### SECTION 1: YOUR JOB

**1. What is your current job title?**

**2. What is your current employment status?**

**3. How long have you been employed in your current job?**

**4. How long have you worked for your current organisation?**

5. How many employees work for this organisation?

6. What best describes your work environment?

7. What percentage of the work day do you work alone (i.e. without any social contact)?

SECTION 2: A BIT ABOUT YOURSELF

8. What is your age in years?

9. What is your gender?

Male

Female

10. What is your marital status?

**11. Which of the following best describes your highest level of education?**

Other, please specify:

**12. What Country do you work in?**

Other, please specify:

SECTION 3: YOUR PERSONALITY Below are several phrases describing certain behaviours. Please read each statement carefully and select the answer from the drop down box that best describes your own behaviour.

**13. Am the life of the party**

**14. Don't talk a lot**

**15. Feel comfortable around people**

16. Start conversations

17. Keep in the background

18. Talk to a lot of different people at parties

19. Have little to say

20. Don't like to draw attention to myself

21. Am quiet around strangers

22. Don't mind being the centre of attention

23. Am relaxed most of the time

24. Get stressed out easily

25. Worry about things

26. Am easily disturbed

27. Get upset easily

28. Change my mood a lot

29. Seldom feel blue

30. Have frequent mood swings

31. Get irritated easily

32. Often feel blue

Below are four statements describing certain attitudes or behaviours. Please select the answer from the drop down box which best describes your behaviour.

33. To be a real success I feel I must do better than everyone I come up against

34. It is important to me to do better than others on a task

35. I feel that winning is important in both work and games

**36. I judge my performance on whether I do better than others rather than on just getting good results**

SECTION 4: CO-WORKER SUPPORT Using the answers in the drop down box, please indicate how often your CO-WORKERS provide you with each of the following:

**37. Helpful information or advice (from co-workers)**

**38. Sympathetic understanding and concern (from co-workers)**

**39. Clear and helpful feedback (from co-workers)**

**40. Practical assistance (from co-workers)**

SECTION 5: NON-WORK SUPPORT Below are four questions about your SPOUSE/PARTNER/FRIENDS/RELATIVES. Using the options in the drop down box please answer the following questions.

41. How much does your spouse, friends, or relatives go out of their way to do things to make your work life easier for you?

42. How easy is it to talk with your spouse, friends, or relatives?

43. How much can your spouse, friends, or relatives be relied on when things get tough at work?

44. How much is your spouse, friends, or relatives willing to listen to your personal problems?

SECTION 6: SUPERVISOR SUPPORT Below are nine statements about your BOSS/SUPERVISOR (or the person you are responsible to). Please indicate whether or not you agree with each statement by selecting the appropriate answer from the drop-down box.

45. My supervisor cares about whether or not I achieve my goals

46. My supervisor takes the time to learn about my career goals and aspirations

47. My supervisor keeps me informed about different career opportunities for me in this organisation

48. My supervisor makes sure I get the credit when I accomplish something substantial on the job

49. My supervisor gives me helpful feedback about my performance

50. My supervisor gives me helpful advice about improving my performance when I need it

51. My supervisor supports my attempts to acquire additional training or education to further my career

52. My supervisor provides assignments that give me the opportunity to develop and strengthen new skills

**SECTION 7: THE CHARACTERISTICS OF YOUR JOB** This part of the survey asks you a bit more about your job and your workload. Please answer each question as it applies to your current work situation.

**53. How many employees do you supervise (or are responsible for)?**

**54. I have enough time to get my job done**

**55. I am asked to do an excessive amount of work**

**56. I have too much work and not enough time to do it**

**57. I have too much responsibility for the work of others**

**SECTION 8: THE CLIMATE OF YOUR ORGANISATION** Listed below is a series of statements that represent feelings you may have about the organisation you work for. Please answer each statement by selecting the appropriate option from the drop down box.

58. I feel people are not totally truthful with me because they worry about what they have to tell me

59. I feel that I can be totally honest with management on all work related issues

60. I feel comfortable about giving suggestions – they aren't treated as criticisms

61. When I make a mistake, I am confident about telling co-workers and would never lie about it

62. I feel fearful or anxious when I am at work

63. I feel uneasy at work because I do not receive all the information I need to do my job properly

64. I dread repercussions at work because they are unpredictable

65. I feel anxious about speaking up in this organisation, because you have to be able to prove all your remarks

66. I feel so fearful when I make a mistake, that I would hide it from or lie about it to management

67. I do not feel apprehensive about discussing sensitive work issues with management

68. I feel at ease in this workplace because punishment is only applied to those who have done something wrong

69. I feel safe discussing sensitive work issues with co-workers

70. I feel afraid at work because management comes down hard on mistakes as an example to others

SECTION 9: COMMUNITY SPIRIT AT WORK Below are several statements about your work environment. Please indicate whether or not you agree with each statement by selecting the appropriate answer in the drop down box.

**71. I feel part of a community in my immediate workplace/department**

**72. My supervisor encourages my personal growth**

**73. I have had numerous experiences in my job which have resulted in personal growth**

**74. When I have fears, I am encouraged to discuss them**

**75. When I have a concern, I represent it to the appropriate person**

76. At work, we work together to resolve conflict in a positive way

77. I am evaluated fairly

78. I am valued at work for who I am

SECTION 10: ORGANISATIONAL FIT Below are three statements about the 'fit' you have with the organisation you work for. Please answer each question/statement by selecting the appropriate button.

79. To what degree do you feel your values match or fit this organisation?

1	2	3	4	5
<input type="radio"/>				

1 = Not at All, 5 = Completely.

80. My values match those of the current employees in this organisation

1	2	3	4	5
<input type="radio"/>				

1 = Not at All, 5 = Completely.

**81. Do you think the values and 'personality' of this organisation reflect your own values and personality?**

1	2	3	4	5
<input type="radio"/>				

1 = Not at All, 5 = Completely.

SECTION 11: YOUR SOCIAL RELATIONSHIPS AT WORK Below is a list of statements concerning the way you may have been feeling at work over the past month. Please indicate whether you agree or disagree with each statement by selecting an option.

**82. I feel included in the social aspects of work**

**83. I often feel emotionally distant from the people I work with**

**84. There are people at work who take the time to listen to me**

**85. I often feel disconnected from others at work**

86. I feel satisfied with the relationships I have at work

87. I have someone at work I can spend time with on my breaks if I want to

88. I often feel isolated when I am with my co-workers

89. There is someone at work I can talk to about my day to day work problems if I need to

90. There is no one at work I can share personal thoughts with if I want to

91. I have social companionship/fellowship at work

92. I often feel abandoned by my co-workers when I am under pressure at work

**93. I often feel alienated from my co-workers**

**94. I experience a general sense of emptiness when I am at work**

**95. There is a sense of camaraderie in my workplace**

**96. I feel part of a group of friends at work**

**97. I feel myself withdrawing from the people I work with**

SECTION 12: YOUR COMMITMENT TO THE ORGANISATION

**98. I am seriously thinking about quitting my job**

99. I am actively looking for a job outside my current organisation

100. As soon as I can find a better job, I'll leave this organisation

101. I am quite proud to be able to tell people that I work for this organisation

102. I feel myself to be a part of this organisation

103. To know that my own work has made a contribution to the good of the organisation would please me

104. In my work I feel that I am making some effort not just for myself, but for the organisation as well

**105. Even if this organisation were not doing too well financially, I would be reluctant to change to another employer**

**106. The offer of a bit more money with another employer would not seriously make me think of changing my job**

SECTION 13: HOW YOUR JOB MAKES YOU FEEL Below is a list of three statements about the perceptions you have of your job. Please indicate your answer for each statement by selecting the appropriate option in the drop down box.

**107. Generally speaking, I am very satisfied with my job**

**108. I am generally satisfied with the kind of work I do in this job**

**109. I frequently think about quitting my job**

SECTION 14: JOB STRESS Below is a list of questions about the level of stress you experience at work. Please indicate your answer by selecting the appropriate option in the drop down box.

**110. In the last month how often have you been upset because of something that happened unexpectedly at work?**

**111. In the last month how often have you felt you were unable to control the important things at work?**

**112. In the last month how often have you felt nervous and stressed because of work?**

**113. In the last month how often have you felt confident about your ability to handle your problems at work?**

**114. In the last month how often have you felt things were going your way at work?**

**115. In the last month how often have you found that you could not cope with all the things you had to do at work?**

**116. In the last month how often have you been able to control irritations at work?**

**117. In the last month how often have you felt that you were on top of things at work?**

**118. In the last month how often have you been angered because of things that had happened at work that were outside of your control?**

**119. In the last month how often have you felt that difficulties at work were piling up so high that you could not overcome them?**

SECTION 15: LIFE SATISFACTION Below is a list of statements about life perceptions. Please indicate your answer by selecting the appropriate option in the drop down box.

**120. In most ways my life is close to ideal**

**121. The conditions of my life are excellent**

**122. I am satisfied with my life**

**123. So far I have received the important things I want in life**

**124. If I could live my life over again, I would change almost nothing**

SECTION 16: ADDITIONAL COMMENTS

**125. In what way do you think your position in the organisation affects your social relationships at work?**



**126. Please record any additional comments you would like to make about your social relationships at work.**



**Please Note:** By completing the above questionnaire, you agree that data supplied may be stored electronically. Click 'Send' to submit your results.

**Appendix 4: Table of Means, Standard Deviations, Ranges and Correlations Before and After Multiple Imputation Calculations**

Variable	Possible Range	Before Imputation			After Imputation			Correlation of means before and after imputation
		Mean	SD	Range	Mean	SD	Range	r
Extraversion	10-50	33.09	7.86	13-50	33.25	7.85	13-50	.98
Emotional Stability	10-50	35.85	7.75	10-50	36.14	7.68	10-50	.96
Competitive Attitude	4-20	11.04	4.21	4-20	11.04	4.21	4-20	1.00
Co-Worker Support	4-24	15.23	3.99	4-24	15.23	3.99	4-24	1.00
Non-Work Support	4-20	17.21	2.85	4-20	17.21	2.85	4-20	1.00
Supervisor Support	8-40	27.93	18.61	0-40	28.31	8.42	8-40	.98
Span of Control	0-	3.37	19.11	0-335	3.25	19.19	0-335	.99
Workload	4-20	10.71	3.54	4-19	10.75	3.58	4-19	.99
Climate of Fear	13-91	36.73	13.58	14-76	36.81	13.54	14-76	.99
Community Spirit	8-56	39.99	10.05	11-56	40.09	10.07	11-56	.99
Organisational Fit	3-15	10.12	2.54	3-15	10.15	2.51	3-15	.98
Intention to Turnover	3-21	9.35	6.10	3-21	9.35	6.10	3-21	1.00
Organisational Commitment	6-42	31.13	6.93	10-42	31.16	6.92	10-42	1.00
Job Satisfaction	3-21	15.34	4.79	0-21	15.38	4.72	3-21	.99
Job Stress	10-50	23.35	6.76	10-45	23.46	6.70	10-45	.99
Life Satisfaction	5-35	25.21	6.35	0-35	25.28	6.21	5-35	.98
Loneliness	16-112	42.49	18.56	16-104	42.60	18.54	16-104	.98