THE EFFECTS OF ORGANISATIONAL CHANGE IN THE MILITARY: A COMPARISON OF WORK RELATED PERCEPTIONS AND EXPERIENCES IN MILITARY AND NON-MILITARY ENVIRONMENTS

A thesis presented in partial fulfilment of the requirements
for the degree of
Doctor of Philosophy
at Massey University

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1994

ABSTRACT

Moskos's (1977) model of military organisation argues that the military is moving away from a traditional 'institutional' setting to one resembling a civilian or 'occupational' setting. Previous research has examined how this trend affects individual's military orientation and the social organisation of the military, however the effect of structural changes on the individual's military experience has not been previously examined. Within the framework of Moskos's model the present research examined, with current and ex-Army personnel, the links between individuals, their perceptions of their work environment, and psychosocial and physical health outcomes.

In study one, data collected from current New Zealand Army personnel (N=571) confirmed the existence of both institutional and occupational groups. The institutional group viewed the Army as more highly structured and their jobs as less challenging, autonomous and important than the occupational group. However, they also viewed their leaders as more supportive and their workgroups as more cooperative, friendly and warm than the occupational group. There were no significant differences between these two groups on job satisfaction, psychological well-being or self rated health. Examination of individual level data in regression analyses indicated that personal characteristics, organisational structure and psychological climate (PC) perceptions were important contributors to job satisfaction for Army personnel. PC components reflecting job challenge, job conflict and leader behaviour were strongly related to job satisfaction. Personal characteristics, organisational structure, PC components, job satisfaction and self rated health were associated with psychological well-being. Perceptions of a structured work environment, of positive workgroup relations, and higher job satisfaction and psychological well-being predicted higher self ratings of health. Maori reported higher job satisfaction and psychological well-being than non-Maori in the Army sample.

In study two, Moskos' model was applied to data collected from ex-Army personnel who had been discharged in the previous two years (N=235). Individuals discharged from occupational corps were hypothesised to be better adjusted to civilian life than

those discharged from institutional corps. However, there were no significant differences in employment status, job satisfaction, psychological well-being and self rated health between these two groups. Those who had been out of the Army for a longer period of time or who had looked for work prior to discharge were more likely to be in paid employment. Those in paid employment reported higher psychological well-being and higher self rated health than those not in paid employment. Examination of individual level data in regression analyses indicated that PC perceptions were also important contributors to job satisfaction for ex-Army personnel. PC components reflecting job challenge, job conflict and leader behaviour were associated with satisfaction. Altogether personal characteristics, organisational structure, and PC components explained a large amount of variance in job satisfaction. Negative affect and the PC component workgroup cooperation, friendliness and warmth were significant predictors of psychological well-being for the ex-Army sample. Only job satisfaction and income predicted self rated health for ex-Army personnel.

When the two studies were compared, Army personnel perceived their work environments to be more centralised and formalised than the ex-Army personnel. The occupational group's perceptions of Army organisational structure were similar to the ex-Army group's perceptions of civilian organisational structure. Army personnel reported less satisfaction with their jobs and poorer psychological well-being than the ex-Army personnel, however there were no significant differences in self rated health, social support or coping between the two samples.

ACKNOWLEDGEMENTS

This project was supported by a research grant from the New Zealand War Pension Research Trust Board.

Many thanks to my supervisor Nigel Long for sound advice and guidance, boundless energy, enthusiasm and encouragement, and last but by no means least, a truly unique sense of humour.

My thanks to Kerry Chamberlain for his support in undertaking this research and to Carol Vincent for her unequalled understanding of WordPerfect and her superb organisational skills.

I would like to thank the New Zealand Army, in particular Major Crispen Webster and Captain Kate Mirfin, for their cooperation and support in administering questionnaires and contacting ex-Army personnel.

Finally, a debt of thanks to the participants for their willingness to commit time to completing the questionnaires.

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OVERVIEW

Few researchers would argue that psychological factors play an important role in mental and physical health. In recent years, there has been increasing interest in identifying psychological and psychosocial factors affecting mental and physical health in the workplace (e.g. Cooper, 1983; Cooper & Baglioni, 1988; Fletcher, 1991; Ganster & Schaubroeck, 1991; Karasek & Theorell, 1990; Kasl, 1984; Travers & Cooper, 1993) and consequently the interactions between workers and the work environment. Numerous epidemiological studies have reported the associations between psychosocial factors at work and mental and physical health outcomes (see Fletcher, 1991). Psychosocial work factors may be related to a number of processes in the development of mental or physical health disorders such as the etiology and progression of illness, and possible treatment and rehabilitative mechanisms (Kalimo, 1987). The relationships between psychosocial factors at work and health outcomes are complex, however there is a general belief that work related stress is a causal agent in organisational outcomes. Further, work related stress has consequences for psychological well-being and has been associated with numerous physiological outcomes (Fletcher, 1991).

Confusion in the literature has arisen because of conceptual overlap of stress and strain constructs. Fletcher (1991) clarifies this problem by using 'stressors' to refer to the antecedents of mental and physical health outcomes (i.e independent variables), and 'strains' to refer to the consequences (i.e dependent variables) of an environment containing stressors.

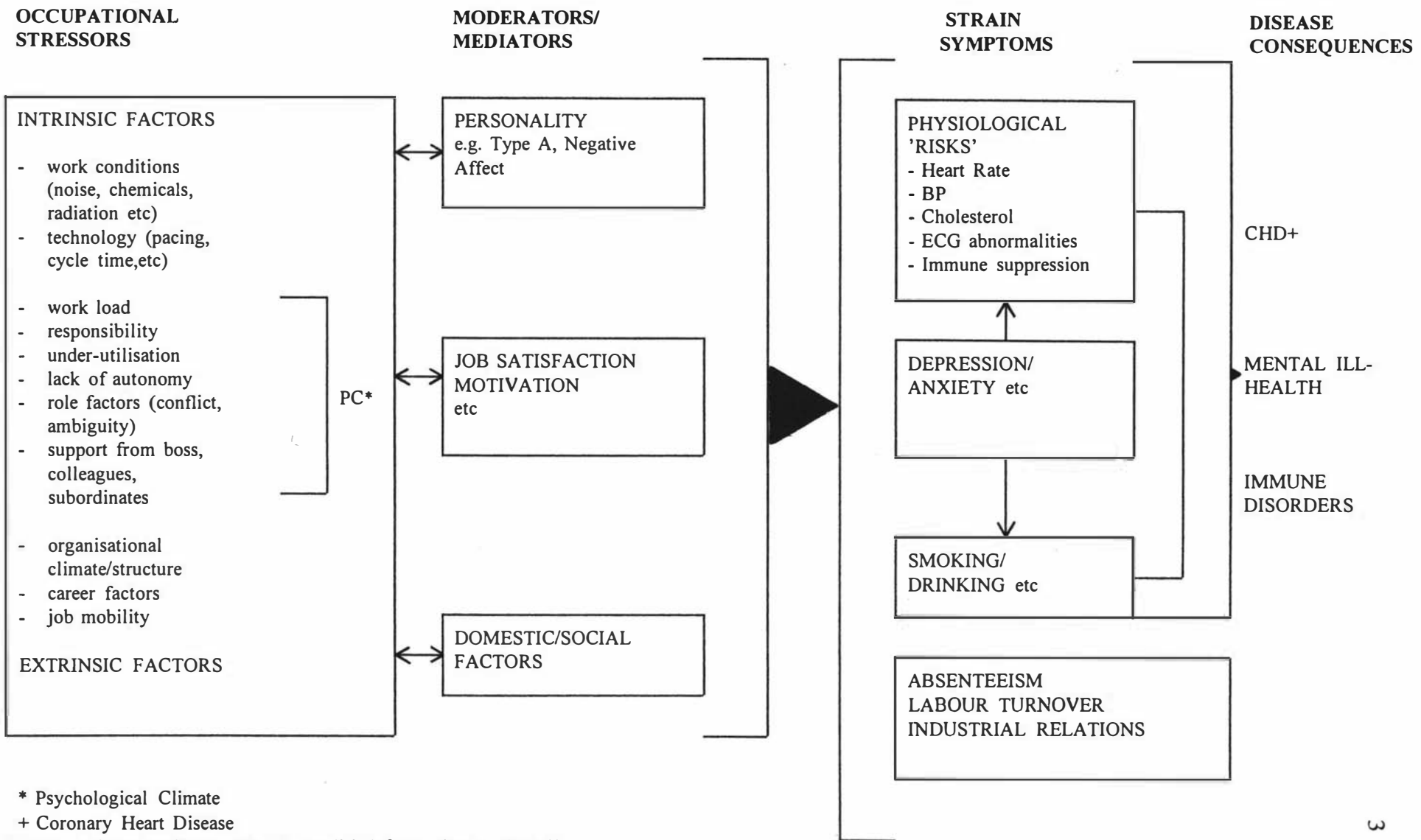
The concept of work related stress is very broad and encompasses an extraordinarily wide variety of potential relationships among stressors and strains. As Sutherland and Cooper (1988) note, the individual invariably reacts differently to perceived stressors depending on a number of different personal and environmental factors. Consequently, the role of mediators and/or moderators is a necessary component in

the study of work related stress. An example of the broad range of variables and their roles is illustrated in the stressor strain model shown in Figure 1. As Fletcher (1988) notes, general models such as these are devised to demonstrate how variables are related and do not attempt to address all the inherent complexities of outcome prediction (e.g. prevalence and incidence of disease outcomes). However, they provide a general framework from which to view the associations between particular stressors and strains. Models that examine work related psychosocial risk factors and physical and mental health, focus on work stressors i.e. work load, autonomy, job pressure. However a factor identified in this general model as a mediator between the work environment and subsequent health is job satisfaction (Fletcher, 1991). There are clear correlational links between job dissatisfaction and job stressors (e.g. Agho, Mueller & Price, 1993; Blegen, 1993; Fried, 1991; Glisson & Durick, 1988; Packard, 1989), suggesting that job satisfaction is an important variable in the stressor strain model.

Job satisfaction is an important concept in the organisational study of the responses employees have to their jobs. The relationships between individuals, their work environments and job satisfaction has been one of the most researched areas in industrial and organisational psychology. Job satisfaction is an affective response to the individual's work environment, it is an indicator of how they feel about their job.

In the model, a number of intrinsic and extrinsic factors can act as potential stressors and impact on peoples' satisfaction with their work and subsequently their mental and physical health. Sources of potential stressors of particular interest in the context of the present research are, organisational structure, and psychological and organisational climate.

The present research studys the impact these factors have on individuals job satisfaction and subsequent indicators of mental and physical health. In addition, the importance of personal characteristics such as age and income, are of interest, given their persistent, and inconsistent association with job satisfaction (Agho et al., 1993; Glisson & Durick, 1988; Weaver, 1980) and the obvious links to health outcomes



* Psychological Climate
\+ Coronary Heart Disease

Figure 1: Stressor-Strain Model (modified from Fletcher (1988)).

(e.g. Aravanis, 1983; Kohn, 1985; Marmot, Kogevinas & Elston, 1987; Matthews, Kelsy, Meilahn, Kuller & Wing, 1989;Syme & Berkman, 1976; Verbrugge, 1989).

The samples in the present research are drawn from the New Zealand Army and those who have recently left the Army. The choice of a group of individuals from relatively similar occupational settings (i.e. the Army), should help to highlight any associations between variables. Kasl (1981) suggests that stronger conclusions can be made about relationships between work dimensions and mental and physical health outcomes when individuals are relatively similar, have similar work settings and differ on only a few dimensions. To a large extent the New Zealand Army fits this description (Bruhns, 1991). However, as Moskos (1988) notes, military organisations in general are moving from a strongly "mechanistic" form of structure to a more "organic" structure and within that process of transition, there are varying degrees of change within sections of the military, i.e. some areas, for instance in the Army, will remain largely mechanistic or *institutional* in nature, whereas others will be more organic or *occupational* in nature (see chapter five for discussion of this model). It is precisely this duality within the Army that provides the framework suggested by Kasl for studying the influence of work dimensions on mental and physical health indicators. That is, all subjects have met minimum entry requirements, gone through basically the same training, are in an environment that is relatively prescriptive over behaviour and are contained in the same occupational setting. However, at the same time, there are sections within the Army that have retained their military or *institutional* nature (e.g. combat corps) while other sections have adopted a more civilian or *occupational* character (e.g. adminstrative, clerical, technical corps). This provides the opportunity to examine differences in perceived work environments (and subsequent health outcomes), due to distinctive military/civilian structures, while the underlying occupational and social milieu remains constant.

In addition, comparisons can be made with a sample of ex-Army personnel, now in civilian occupations. If a distinction can be made in the New Zealand Army between *institutional* and *occupational* work environments, then it is plausible that individuals discharged from an occupational environment will adjust more readily to a civilian

work environment than an individual discharged from an institutional environment. There is some evidence to suggest that the military environment may provide protection against certain mental health outcomes e.g. post-traumatic stress disorder, for personnel exposed to combat (Vincent, Long & Chamberlain, 1991). Further, a common perception is that military training provides skills beneficial to civilian employment. Comparing current and ex-Army personnel may determine if the military provides an environment that is potentially beneficial (or injurious) in relation to a range of non-combat work related psychosocial outcomes both while in the Army and on the return to the civilian workforce. The inclusion of the ex-Army sample also provides the opportunity to compare the perceptions of different structures and climates associated with mechanistic and organic types of organisations and occupations in a civilian context.

In summary, this research seeks to examine, with current and ex-Army personnel, the links between individuals, their perceptions of their work environment, (e.g. organisational structure, psychological climate and organisational climate), and a number of psychosocial outcomes physical health outcomes (job satisfaction, mental and physical health) within the framework of structural transition within the military environment, and transition from the military to civilian environment.

The following chapters review the literature and research on work related dimensions relevant to the present research.

Chapter one provides a framework for investigating the relationships between work related dimensions, placing them in a wider context by discussing influential models of stress in general, and work related stress in particular.

Chapter two outlines and discusses the concepts relating to organisational structure. In particular, formalisation, centralisation and organisational size and the relationships between these structural variables are examined.

Chapter three outlines and evaluates the theory and research on perceptions of the

work environment, with particular emphasis on the distinction between psychological and organisational climate. The difference between organisational culture and climate is also discussed.

Chapter four examines the research and theory with regards to job satisfaction. The links to demographic correlates, organisational structure and climate are described and the consequences of job satisfaction are outlined with particular reference to mental and physical health. Additionally, the possible dispositional content of job satisfaction is discussed.

Chapter five reviews models of organisational structure in military organisation. In particular it outlines the Institutional/Occupation model and associated research, its application to the New Zealand Army context, and its implications for individuals. In addition, research pertaining to the psychosocial work environment within the military context, including the transition from military to civilian occupational environments, is reviewed.

CHAPTER ONE

Work-Related Stress

Contents

Stress has dominated the literature in the past few decades as one of the most widely researched psychosocial antecedents of poor health outcomes. There are many *general* models of "stress", and two have been particularly influential on subsequent research in the area of occupational/job/work related stress. These are Selye's general adaptation syndrome (1978) and Lazarus' (1966) transactional model of stress.

1.1 General Models of Stress

Hans Selye proposed a general adaptation syndrome (e.g. Selye, 1978), which conceives *stress* as "the nonspecific response of the body to any demand made upon it". Demands on the body elicit specific responses and more generalised nonspecific responses. When the body is exposed to a physiological or psychological stressor it goes through three stages in its response to that stressor. First, *alarm*, an immediate period of elevated arousal of the sympathetic nervous system. Followed by *resistance*, a stage of decreased arousal and adaptation to the stressor. Finally, *exhaustion*, in which arousal and the ability to cope drop suddenly. This stage is characterised by weakness, fatigue, loss of appetite and a general lack of interest. The over-riding concept of Selye's model is that the response to stressors is nonspecific.

Lazarus' transactional model (1966) states that the amount of stress a person experiences depends on the interpretation given to a stressful event rather than on the event itself. This model emphasises the process rather than the outcome, in that stress is neither a stimulus, (e.g. Holmes and Rahe, 1967), nor a response, (e.g. Selye, 1978), but rather the result of a transaction between the person and the environment. Incorporated in this transactional process is the concept of coping[1], which refers to the actions or resources employed by the individual to influence process and outcomes. Appraisal is an important element in the transactional process. Primary appraisal is the mechanism by which the significance of a transaction is evaluated with regard to the individuals well-being. Interactions can be irrelevant, benign-positive or stressful. Only stressful interactions place demands on the individual and therefore require the use of coping strategies. Secondary appraisal is the mechanism by which

[1]See page 32 for further discussion of the coping process.

the individual evaluates what coping resources are available to deal with a stressful transaction.

These two models are by no means exhaustive in their consideration of stress or its causes and impact. However the focus on stress as an important psychosocial influence on health has been most influential in the area of the work environment and offers a conceptual framework for the consideration of research in the area of work related stress research.

1.2 Categories of Work Related Stressors

Much of the work related stress research has focused on the work environment as a source of "stressors" (independent variables) that influence mental and physical health outcomes or "strains" (dependent variables) (Fletcher, 1991). Sutherland and Cooper (1988) suggest "stressors" can be categorised into organisational demands, extra-organisational demands and the characteristics of the individual. These broad categories of stressors, broken down into smaller groupings, are diagrammatically shown in Figure 2.

1.2.1 Organisational Demands

Among the *organisational demands*, Sutherland and Cooper (1988), further differentiate between the following five sources of stress at work.

Job Conditions

Job conditions encompass both physical and psychological aspects of the work environment. Physical work conditions play an important role in determining the individuals response to their work environment. Physical danger is a smaller concern for most employees than it was previously, however some occupations are still confronted with the threat of injury or harm e.g. armed forces personnel, police officers, fire fighters, relief aid workers. It may be that workers tend to block out the potential daily risks involved in such jobs. In addition, Rice (1991) notes stress related to physical danger may often be a function of inadequate training, i.e. sufficient training provides the individual with a powerful coping resource in the face of

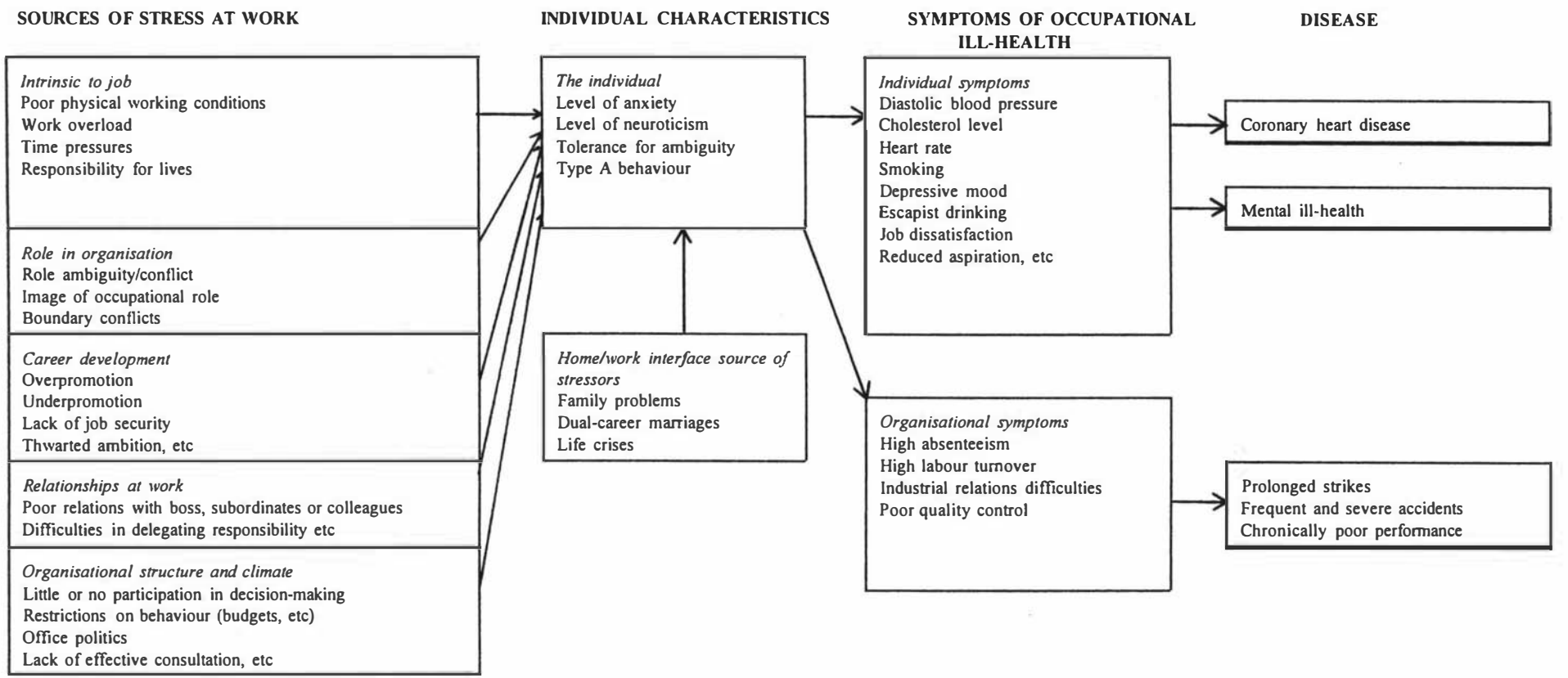


Figure 2: A model of stress at work (Sutherland & Cooper, 1988).

stressful and potentially harmful work situations. Further physical aspects of the work environment that have been investigated as sources of stressors are environmental conditions such as levels of noise, heat and cold, vibration and illumination (Landy, 1985). Sutherland and Cooper (1988) also note the effects of poor hygiene conditions and unpleasant climatic conditions. One of the most obvious sources of physiological and emotional symptoms of stress is shift work which has been shown to result in low worker productivity, accidents and poor physical and mental health (e.g. Agervold, 1976; Bell & Telman, 1980; Lavie, Chillag, Epstein, Tzichinsky, Grivon, Fuchs & Shahal, 1989; Torsvall, Akerstedt, Gillander & Knuttsson, 1989).

Two further sources of stressors associated with job conditions are work overload and work underload. Sutherland and Cooper (1988) make a distinction between quantitative and qualitative work overload/underload. Quantitative overload means having too much to do in the time allotted, and quantitative work underload, having too little to do resulting in boredom or inattentiveness. Qualitative overload, refers to the situation where the worker does not have the requisite skills to perform their job adequately, and qualitative underload refers to the under-utilisation of the individual's skills. Allied to the concepts of overload and underload is the function of new and rapidly changing technology, in some circumstances making jobs obsolete or repetitive, and in others overtaking individuals current skill levels. In the 1970's a large quantity of research was reported from Scandanavia that focused on applying activation theory to the work stress concept (e.g. Johansson, Aronsson & Lindstrom, 1978). Activation theory proposed that worker well-being is maximised at an intermediate level of arousal, and focused on conditions that resulted in work overload and work underload. One particular approach to emerge from the Scandanavian literature was the job demands-job decision latitude model proposed by Karasek (discussed more fully below).

Roles

Closely associated with job conditions, are stressors that result from role stress.
Two of the most widely studied sources of stress associated with role dysfunction are role ambiguity and role conflict. Role ambiguity refers to the stress that arises when

the individual is unclear about his/her functions or objectives. Role conflict occurs when the individual is unable to meet conflicting demands made upon them. Ganster and Schaubroeck (1991) note that at least 200 studies had been reported that assess the correlations between role conflict and role ambiguity and affective outcomes. In a meta-analysis of 92 studies, Jackson and Schuler (1985) generally found job satisfaction, the most frequently used consequence variable, to be negatively related to both role ambiguity and role conflict. Another frequently used dependent variable in studies of role ambiguity and role conflict is tension (or anxiety). Tension tends to be positively correlated with both ambiguity and role conflict (Jackson & Schuler, 1985). The authors also found a moderate correlation between self-report measures of role conflict and ambiguity with worker distress. Sutherland and Cooper (1988) note the potential for increased responsibility to be a source of stress associated with the individuals role in the work environment.

A closely related area of work related stress research is that covered by the job burnout literature. Shirom (1989) notes that more than 300 articles had been published on burnout between 1980 and 1985. Job burnout consists of a reaction to role stress when individuals are unable to deal with excessive work demands which usually involve high levels of interpersonal contact (Lee & Ashforth, 1993a).

Interpersonal Relationships

Social relationships, as important interpersonal factors, have been widely studied as a resource available to individuals in the work environment. Support from one's co-workers, supervisors and management appears not only to have direct effects on levels of strain but also buffers against the effects of stressors (e.g. Cohen & Wills, 1985; LaRocco, House & French, 1980). Further interpersonal stressors identified by Quick and Quick (1984, cited in Sutherland & Cooper, 1988) include status incongruence, social density, abrasive personalities, leadership style and group pressure.

Career Development

People bring certain expectations to their jobs with regard to promotion, advancement, innovation and autonomy (Veniga & Spradley, 1981). When these expectations are

not met, employees may experience frustration, and loss of self esteem (Sutherland and Cooper, 1988). Rice (1991) notes that four factors are related to stress in career development: underpromotion, overpromotion, lack of job security, and frustrated ambitions.

Organisational Structure and Climate

Stressors resulting from organisational structure and climate can include minimal decision making responsibility, constraining rules and regulations, lack of control, poor communication, and feelings of powerlessness (Cooper and Davidson, 1987; Sutherland & Cooper, 1988). Spector (1986) in a meta-analysis of 88 studies relating control, autonomy and participative decision making to employee outcomes, found when perception of control was high, workers experienced higher levels of job satisfaction. They also reported fewer physical symptoms, less emotional distress, and role stress. In addition, absenteeism, intent to turnover and turnover decreased. Similar results were also found for autonomy and participation. Organisational structure and climate are discussed more fully in subsequent chapters.

1.2.2 Extra-organisational Demands

Figure 2, shows *extra-organisational demands* as further potential sources of work-related stressors. There is a large body of research that investigates the relationship between work and non-work (e.g. Cooke & Rousseau, 1984; Gutek, Repetti & Silver, 1988; Losocco & Rochelle, 1991; Near, Rice & Hunt, 1980; Rain, Lane & Steiner, 1991). The home-work interface has been seen as a potential source of stressors in both environments. Cooper and Davidson (1987) note a number of potential "home arena" stressor variables such as family dynamics, marital relations, general social support, relations with children, family concern for safety, living environment, financial concerns, and developmental phases.

1.2.3 Characteristics of the Individual

The final broad category identified by Sutherland and Cooper (1988) as potential stressors is *characteristics of the individual.* These categories are further broken down into the following four sub-categories.

Personality

Much has been written about various personality traits that may influence susceptibility to work related stress and subsequent negative mental and physical health outcomes i.e. the "stress prone personality". One of the most widely researched constructs in this area is Type A behaviour pattern. This is a multidimensional construct involving a complex set of behaviours such as; extremes of aggression, easily aroused hostility, a sense of time urgency, competitive achievement striving and a deeply entrenched commitment to work (Friedman & Rosenman, 1974). Type A behaviour has been related significantly and consistently to cardiovascular disease in a number of studies (Booth-Kewley & Friedman, 1987; Friedman & Booth-Kewley, 1988; Haynes & Feinleib, 1980; Haynes, Feinleib, & Kannel, 1980; Matthews, 1982) and with weak, associations to occupational status (Baker, Dearborn, & Hamberger, 1984; Chesney & Rosenman, 1985). The associations between Type A behaviour and health outcomes are found for white collar occupations (Haynes et al., 1980). Sutherland and Cooper (1986) also note Type A behaviour as an indicator of accident involvement among offshore rig workers. Further personality type variables that have been implicated in the work related stress literature include: locus of control (e.g. Anderson, 1977; Andrisani & Nestel, 1976); hardiness (e.g. Oullette-Kobasa, 1988); sense of coherence (Antonovsky, 1987); optimism (e.g. Scheier, Weintraub & Carver, 1986); and tension discharge rate (e.g. Matteson & Ivanevich, 1983).

Mention should also be made here of negative affect. People high in negative affect are more likely to experience distress and dissatisfaction across time and situations. These people are more introspective and tend to reflect on their own shortcomings. They also tend to have a negative outlook on life in general (Watson & Slack, 1993). A number of studies have shown that negative affect can influence the relationship between stressors and strains (e.g. Payne, 1988; Schroeder and Costa, 1984), while others have questioned this finding (Chen & Spector, 1991).

Schaubroeck, Ganster and Fox (1992) in a sample of 311 employees of fire and police departments found no reliable evidence that negative affect measured any factor in common with work stressors or strains. However the authors did find that controlling

for the effect of negative affect on self-reported strains significantly diminished the effects of the work stressors, suggesting that negative affect can influence the magnitude of observed correlations between *self-reported* stressors and strains. Burke, Brief and George (1993) reanalysed four sets of data in order to understand the role of negative affect in the stressor-strain relationship. Their findings supported the notion that negative affect may introduce spuriousness into the relationships between work stressors and strain outcomes.

Ability and Experience

Ability and experience may act as moderators in the stressor-strain relationship (Sutherland & Cooper, 1988), in that they could influence perceptions of resources available to the individual to cope with a job related stressor. The concept of quantitative and qualitative work overload suggests that those individuals with the requisite skills to undertake a particular task will experience less qualitative overload. In addition, due to their abilities they are able to undertake the task faster, thus also reducing the prospect of quantitative overload. It would be reasonable to expect that experience or knowledge might also act as a moderator, or a resistance resource (Lazarus, 1987), in the stress-strain relationship, in that frequent exposure to stressors may provide the individual with the emotional and physical resources to attenuate the response to a stressor.

Ethnicity

Sutherland and Cooper (1988) also note that ethnicity may play a part in the experience of work related stress. Tuch and Martin (1991) suggest that this expectation is not surprising given the work-place disadvantages that many minority groups continue to experience. For, instance, they note that black[2] unemployment in the United States continues to be approximately twice the white rate; blacks are concentrated in low-paid and low skilled, blue collar jobs relative to whites; are more likely to be underemployed; are less likely to gain positions of authority; are less likely to be promoted; are more likely to be displaced during times of recession and

[2] Terminology used in the present research for ethnic groups is from original studies.

face discrimination with regard to hiring (Tuch & Martin, 1991).

Age and Physical Condition

Age and physical condition are undoubtedly important components in the stressor-strain relationship. It was suggested above that experience may play a part in modifying the relationships between stressors and strains. It can be argued that to a large extent, experience comes with age. This link supports the notion that stress responses may be related to life stages or more precisely career development stages (Kacmar & Ferris, 1989). For instance, different career stages have been associated with specific age ranges. In addition, job opportunities that are well rewarded, powerful and high in status (and consequently high satisfaction) are not generally available to younger people. Further, merely getting older may increase individual's self-confidence, and the associated prestige with seniority may lead to subsequent increases in satisfaction. Sutherland and Cooper (1988) note that, physical condition, obviously related to a large extent to age, may affect the response to work stressors. For instance, physiological regulatory mechanisms become less effective with aging, and those in good physical condition (the younger workers) may be able to tolerate stressors more successfully than their older, less physically robust, counterparts.

1.3 Strains

Strains, or symptoms of strain, are many and varied. Beehr and Newman (1978) in their review of the literature suggested three negative effects of work related stress for the individual: (1) behavioural symptoms, (2) psychological symptoms and (3) physical symptoms. Summarising typical findings from the work related stress literature in various occupational settings, Rice (1991) lists some of the more consistent symptoms under these three headings (see Table 1).

Much research has been undertaken investigating the role of work related stress and individual behaviours and their consequent influence on undesirable organisational outcomes. The direct financial cost of behavioural symptoms of work related stress are difficult to quantify, however, Cooper (1986) has estimated that alcoholism alone results in a loss of 1.3 billion pounds annually for industry in the United Kingdom and

Table 1
Summary of symptoms typically found in work related stress literature (Rice, 1991).

Behavioural Symptoms of Work Stress	Psychological Symptoms of Work Stress	Physical Symptoms of Work Stress
Procrastination and avoidance of work	Anxiety, tension, confusion and irritability	Increased heart rate and blood pressure
Lowered performance and productivity	Feelings of frustration, anger, and resentment	Increased secretions of adrenaline and noradrenaline
Increased alcohol and drug use and abuse	Emotional hypersensitivity and hyperreactivity	Gastrointestinal disorders such as ulcers
Outright sabotage on the job	Suppression of feelings	Bodily injuries
Increased visits to the chemist	Reduced effectiveness in communication	Physical fatigue
Over-eating leading to obesity	Withdrawal and depression	Death
Under-eating, combined with signs of depression	Feelings of isolation and alienation	Cardiovascular disease
Loss of appetite and sudden weight loss	Boredom and job dissatisfaction	Respiratory problems
Increased risk-taking behaviour, including reckless driving and gambiling	Mental fatigue and lower intellectual functioning	Increased sweating
Aggression, vandalism and stealing	Loss of concentration	Skin disorders
Deteriorating relationships with family and friends	Loss of spontaneity and creativity	Headaches
Suicide or attempted suicide	Lowered self esteem	Cancer
		Muscular tension
		Sleep disturbances

also notes that industry in the United States spends approximately $700 million annually replacing employees due to premature cardiovascular heart disease.

Rice (1991) concludes that among the most commonly reported psychological symptoms in the literature are anxiety, tension, anger and resentment, and suggests that the most predictable psychological consequence of work related stress is job dissatisfaction (see chapter four).

With regard to physiological symptoms of work related stress reported in the literature, Rice (1991) suggests that sufficient evidence exists to support the detrimental effects on cardiovascular and gastrointestinal systems. The link between work related stress and physiological symptoms such as physical fatigue, bodily injuries and sleep disturbances, are well established, however other physiological symptoms listed by Rice can be less convincingly linked to stressful antecedents.

Given that there is a relationship between stressors and health outcomes, the question asked is *how* does a psychological event such as a stressor increase an individuals susceptibility to disease? Steptoe (1991) suggests that two of the most vigorous areas of research into physiological mechanisms that may connect psychological variables to disease processes are cardiovascular reactivity to stress and psychoneuroimmunology.

1.3.1 Cardiovascular Reactivity to Stress

Psychophysiological reactivity has been suggested as one of the primary behavioral antecedents of coronary heart disease (Stone, Dembroski, Costa & MacDougall, 1990). Studies of both animals (e.g. Ernst, 1979; Kaplan, Manuck, Clarkson, Lusso, Taub & Miller, 1983) and humans (see Krantz & Manuck, 1984 for review) have shown that certain types of "stressful" stimuli (e.g. threat of shock, Stroop tasks, reaction time tasks) can elicit potentially injurious physiological states. Coping behaviour, which will be discussed more fully later, is thought to moderate the relationship between stressful stimuli and cardiovascular reactivity (Krantz & Manuck, 1984). For instance, Obrist, Gaebelein, Teller, Langer, Grignolo, Light and McCubbin (1978) suggest an

important consideration in the individual's response to a stressful situation is whether they cope actively or passively. Their findings indicate that engaging in active coping behaviour has a salutogenic influence on the cardiovascular system. As Krantz and Manuck (1984) note, by "measuring changes in response to psychological challenges, potentially pathogenic states can be detected in the context of relevant behavioural or psychosocial antecedents" (p.436), providing a plausible causal mechanism between psychosocial stressors and cardiovascular disease outcomes.

1.3.2 Psychoneuroimmunology

A second avenue of research looks at the links between emotional processes and immune functioning. Depressed immunocompetence has been advanced as an important mechanism linking psychological variables with susceptibility to disease and disease progression (O'Leary, 1990). Basically the immune system is a surveillance system that alerts and protects the individual from disease. Recent research has shown that psychological stress has an effect on animals immune functioning (Adler & Cohen, 1993; Baker, 1987; Rogers, Dubey & Reich, 1979; Stein, Keller & Schleifer, 1985). This research has shown that certain experimentally manipulated types of stress (e.g. crowding, restraint, shock etc) can alter susceptibility to diseases that are under immunological regulation (for example; cancers, infectious diseases, allergies, and auto immune disorders). It is presumed then that stress impairs some aspects of immunological functioning. Increasing evidence suggests that psychosocial stress also has important effects on human immune system functioning (Ader, 1980; Herbert & Cohen, 1993; Kiecolt-Glaser, Cacioppo, Malarkey & Glaser, 1992). Studies have investigated the potential immunosuppressive effects of stressor variables such as military combat, spaceflight splashdowns, sleep deprivation, academic stress, phobias, unemployment, proximity to hazardous materials, care-giving, bereavement, marital separation, depression, and personality (Calabrese, Kline & Gold, 1987; Fletcher, 1991; Kennedy, Kiecolt-Glaser & Glaser, 1988; O'Leary, 1990; Watson, Muller, Jones & Bradley, 1993). In addition, it has been proposed that personal attributes or resources may moderate relationships between stressors and immunocompetence. For instance, there is suggestive evidence of links between immune functioning and loneliness (Kiecolt-Glaser, Garner, Speicher, Penn, Holliday & Glaser, 1984; Kiecolt-

Glaser, Ricker, George, Messick, Speicher, Garner, & Glaser; 1984), social support systems (Jemmott & Magloire, 1988; Levy, Herberman, Whiteside, Sanzo, Lee & Kirkwood, 1990; Thomas, Goodwin & Goodwin, 1985), and the teaching and use of relaxation techniques (Kiecolt-Glaser, Glaser, Williger, Stout, Messick, Sheppard, Ricker, Romisher, Brinner, Bonnell, & Donnerberg, 1985). Steptoe (1991) concludes that different personal responses to the environment have different physiological consequences and accordingly the "functional value of the coping process can seldom if ever be divorced from the context in which it occurs" (Lazarus, 1990, p.105). Although the existence of clear causal relationships between psychological factors and immune functioning have yet to be established, Fletcher (1991) concludes that a considerable assortment of psychological factors have been shown to alter immune functioning and the mechanisms for understanding the influence of stressors on the immune system are becoming apparent.

The concept of work related stress clearly embraces a remarkably extensive array of potential relationships among stressors and strains. Consequently, precise conceptualisation of the construct and the processes used to examine it have been the subject of much debate (e.g. Newton, 1989; Bailey & Bhagat, 1987). A review of research into the relationships between the array of work related psychological, physiological and behavioural symptoms ("strains"), and the varying sources of stressors, is provided below, but first, it is necessary to discuss the theoretical underpinnings of this work.

1.4 Work Related Models of Stress

Earlier it was noted that Selye's and Lazarus's work had been particularly influential on subsequent research in the work related stress area. These two models also provide background for the consideration of two specific models of occupational stress that have influenced the literature.

1.4.1 The Person-Environment Fit Model (P-E)

Based on the work of French and colleagues (French, Caplan, & Van Harrison, 1982), this model emphasises the correspondence between individual characteristics and

environmental characteristics. This model, like Lazarus's, also highlights the cognitive view of stress, in that many events are not inherently stressful but their significance is based on the meaning given to that event by the individual and by the resources he or she believes they have to cope with that event. Therefore, the proportion of stressfulness experienced is a function of the fit between the individual and the work environment, by way of the fit between individuals perceptions of themselves and their perceptions of that environment. As Fletcher (1991) notes, the primary differentiation is between objective and subjective environments. That is "reality" and the individual's perception of that reality and themselves in it. More precisely, there are two types of fit specified. First, that between the requirements of the job and the ability of the worker to meet those requirements, and second, that between the needs and motivation of the worker and the job outcomes (e.g. pay, security, satisfaction). It is also suggested that a degree of protection against the stress caused by misfit can be provided by social support and ego defense mechanisms (e.g. repression - ignoring demands), and if neither of these mechanisms are operational then the stress precipitated by the misfit is converted into strain via dissatisfaction, psychosomatic disorders, smoking etc., which eventually increase risks of morbidity and mortality.

This theory has been tested most comprehensively by French et al. (1982). P-E fit was measured on eight job dimensions, seven psychological aspects of strain, ten measures of health related behaviours, and eight physiological measures. Misfit was determined by quantitatively pairing an environment item with a person item. For example, individuals were asked "How much overtime do you have?" and "How much overtime would you like to have?". Examination of correlations between variables provide support for the model. Misfit was frequently correlated with strains, such as job and work dissatisfaction, boredom, depression, anxiety and irritation. In some cases misfit also correlated with health related behaviours and physiological strains. The relationship between misfit and strain was often curvilinear such that strain was lowest when fit was close to perfect. The basic test of the model is whether the misfit between P and E measures of the job dimensions are better predictors of strain than P and E measures alone. Stepwise multiple regressions showed that these P-E curvilinear relationships explained variance over and above that explained by the linear

relationships of the P and E measures.

There are a number of methodological and conceptual limitations to this model. Ganster and Schaubroek (1991) note that the model focuses more on process than content, such that the number of job characteristics or dimensions studied with regard to fit is limited. Further, studies of the model have almost totally relied on subjective measures as the basis for assessing fit. Edwards and Cooper (1990) also note a number of limitations to the model. They suggest that French and colleagues have neglected to detail whether the two different types of fit engender differential outcomes. In addition, they suggest, the researchers have used inappropriate measures and statistical models to assess the relationship between P-E fit and stress outcomes. A recent study (Edwards & van Harrison, 1993) reanalysed the data from French et al (1982) and resolved a number of ambiguities in the original data due to inappropriate fit measures.

1.4.2 Demands/Control Model

A second model, which has been more influential is the Demands/Control model developed by Karasek (1979) which in the last decade has provided the underlying theory for the majority of large-scale studies of job stress. The model postulates that psychological strain and subsequent physiological outcomes are the result of the interaction between two broad constructs that can vary independently in the work environment. *Job demands*, defined as psychological stressors, such job pressure, overload and conflict, and *Job decision latitude*, the workers decision making authority and the variety of skills used (skill discretion and control).

Figure 3 demonstrates how four distinct types of psychosocial work experiences are produced by the interaction of job demands and decision latitude (or control). Karasek (1979) proposes that high strain jobs, where demands are high and decision latitude is low, result in the most extreme psychological strain. High demands produce a state of arousal in the worker, and when the worker is constrained from responding, such as in conditions of low control, the arousal cannot be appropriately channelled into a coping response resulting in a heightened, longer lasting, physiological reaction.

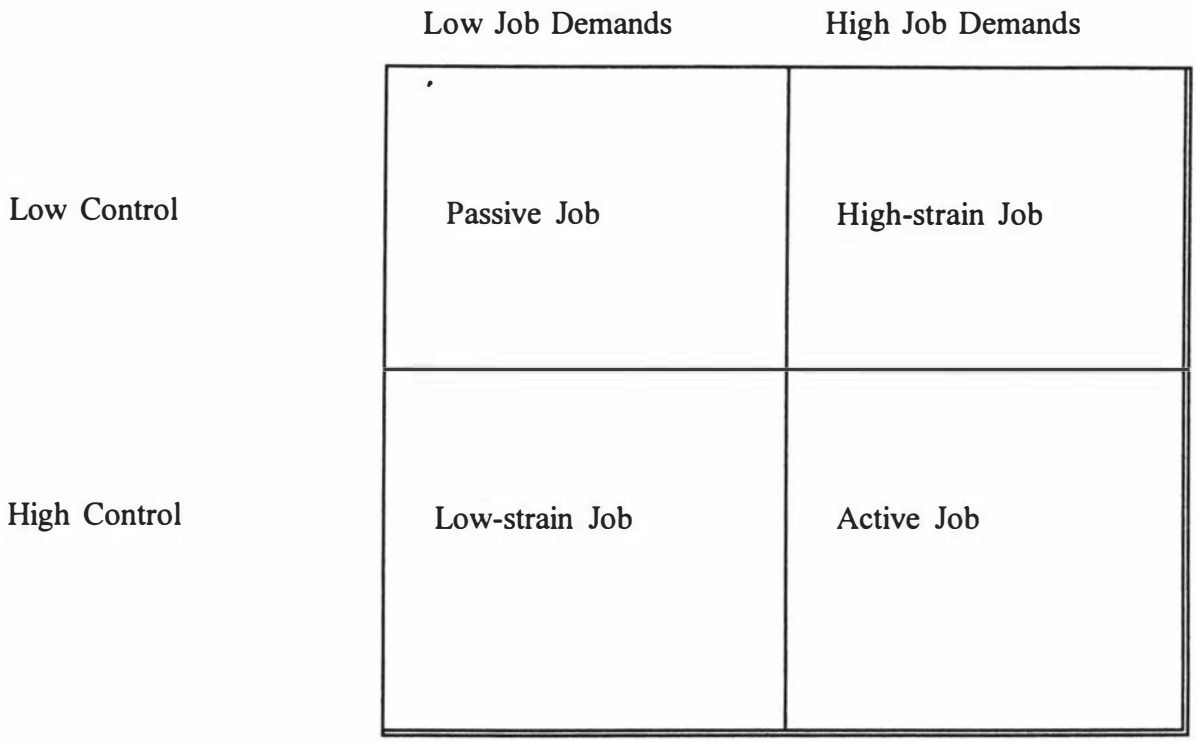


Figure 3
The Job Demands-Job Decision Latitude Model

Active jobs, on the other hand are situations where the work is demanding but where the worker has the freedom to use their skills and the authority to make decisions about their work (control). Karasek (1979) predicts positive psychosocial outcomes for these individuals e.g. learning and growth. These workers although presented with demanding situations have the means to effectively cope with these demands, developing protective behaviours, with minimal strain. Low-strain jobs are those where the worker has few demands and high levels of control. Because there are few demands and the employee has the resources to respond to those demands optimally, Karasek (1979) predicts low levels of psychological strain and lowered risk of illness. Passive jobs, where demands are low and control is low, are considered to provide psychological strain second only to the high-strain jobs. These workers, as they adapt to low control and low demand situations, will suffer from learned helplessness, unable to make decisions or solve problems and a gradual atrophying of skills and abilities will occur. Karasek (1979) argues that just increasing worker control even in low demand situations can counter these problems.

What is the empirical support for the model? The evidence is mixed. Karasek (1979) tested the model on a sample of the US and Swedish male working populations. Results with respect to high strain jobs were strongly supportive of the model. The percentage of males in high strain jobs that exhibited significantly elevated levels on strain measures (e.g. depression, exhaustion, job dissatisfaction, sick days off), was greater than for the three other types of jobs. Karasek, Baker, Marxer, Ahlbom, & Theorell (1981) in a study based on the Swedish male working population interviewed men below age 66 who were asked about their job conditions and health in 1968 (N=1,915) and 1974 (N=1,635). In 1974, 20% of those in high-strain jobs reported 2 or more CHD indicators (ache in chest, trouble breathing, hypertension, heart weakness), compared to none in the low-strain jobs, 2.8% in the active jobs and 3.2% in the passive jobs. In a further analysis of the 1,461 individuals who showed no evidence of self reported cardiovascular symptoms in 1968 and who were reinterviewed in 1974, the work situation in 1968 was related prospectively to the frequency of CHD symptoms in 1974. Approximately 5 to 9% of the high-strain employees who reported no symptoms in 1968 now reported them. Again, none of the low-strain employees reported symptoms. In multiple regression analysis which included normal CHD risk factors such as age, education, weight and smoking, only age, lack of intellectual discretion at work and job demands were significant predictors of CHD indicators.

Karasek (1990) examined Swedish white collar workers who had undergone company-initiated reorganisation. He compared situations where job changes and reorganisation had *increased* workers job decision latitude, with situations where job changes and restructuring has resulted in *decreased* decision latitude. Karasek found that coronary heart disease rates were 3.4% and 8.6% for the situations respectively, job dissatisfaction 8.7% and 45.3%, stomach problems 16.9% and 24.4%, and depression 13.7% and 27.8%. In addition, those who reported decreases in job control were more likely to be absent from work than others.

Other studies have found support for the model in predicting such diverse outcomes as job satisfaction, mental health, well-being, anxiety, burnout, depression,

psychosomatic symptoms, intentions to quit, adrenaline excretion, diastolic blood pressure, structural changes in the heart, and alcohol problems (Bromet, Dew, Parkinson & Schulberg, 1988; Fletcher & Jones, 1993; Ganster & Mayes, 1988; Hesketh & Shouksmith, 1986; Landsbergis, 1988; Perrewe & Ganster, 1989; Schnall, Pieper, Schwartz, Karasek, Schlussel, Devereux, Ganau, Alderman, Warren & Pickering, 1990). However, as Fletcher and Jones (1993) note, the central theme of the model is that job demands and decision latitude *interact* to affect strain. Recent studies have shown only limited support for this interaction effect (Bromet et al., 1988; Dwyer & Ganster, 1991; Fletcher & Jones, 1993; Fox, Dwyer & Ganster, 1993; Perrewe & Ganster, 1989). Ganster & Schaubroeck (1991) in their review of the job demands/decision latitude literature report that other investigators using self-report measures of affective outcomes (e.g. job satisfaction, depression, anxiety, somatic complaints) have failed to fully support the *interactive* nature of the model. They discuss two broad criticisms of the model. First, the job demands and job decision latitude concepts cover a wide spectrum of constructs and this is reflected in the diverse methods of operationalisation used in the literature. They cite a number of measures used to assess control (decision latitude) such as, dealing with customers and the public, repetitious and monotonous work, educational requirements of the job, and skill utilisation. This over inclusive approach to operationalising the control variable tends to reduce conceptual clarity with regard to the underlying theoretical construct. Second, Ganster and Schaubroeck (1991) note that the interactive nature of the model is not clearly understood or developed. Karasek (1979) imbues the model with interactive meaning, however this has largely been ignored statistically. Critics of the model (see Ganster and Schaubroeck, 1991) have concluded that the large-scale studies seem to offer evidence of an additive model of demands and control rather than an interactive one. Despite the lack of consistent empirical support for the interactive nature of the model, Ganster and Schoubroek (1991) recommend its continued use in organisational research with the proviso that researchers devise new and better ways of testing it. Karasek and Theorell (1990) have recently expanded the theoretical discussion of the model to include social interaction within the work environment.

The following sections review further research on the relationships between work related stressors and strains.

1.5 Work Related Stress and Health Literature

Generally, much of the literature relating to work related stress and health has either attempted to ascertain which occupations are more stressful or establish which conditions within a single occupational setting are associated with mental and physical health outcomes.

1.5.1 Occupational Classifications

A great deal of the work related stress research based on broad occupational classifications has produced inconsistent findings. Ganster and Schaubroeck (1991) note that this approach tends to ignore within-job or within-occupational work characteristic variations making examination of the processes that causally link work conditions and health outcomes difficult. For instance, Kasl (1984) has noted that even when occupations are very similar, health outcomes can be quite different. Kasl (1984) notes that refracting opthamologists are approximately 10 times more likely to commit suicide than optometrists, despite their work being similar. Despite the methodological limitations of this approach, numerous studies have attempted to demonstrate occupational differences in the stressor-strain relationship.

Some research has looked at coronary heart disease morbidity as a consequence of occupational category. The Framingham Heart Study investigated coronary heart disease rates in 350 housewives and 387 working women over eight years (Haynes & Feinleib, 1980). Coronary heart disease rates for working women in general were no different than for housewives, however they were almost twice as high among women holding clerical jobs (often involving little control) as compared to housewives. Having a non-supportive boss and decreased mobility were significant predictors of CHD risk for these workers. Frommer, Edye, Mandryck, Grammeno, Berry and Ferguson (1986) found differences in systolic blood pressure across eight different occupational categories of government employees (N=3,246) which could not be explained by the variations in perceived and reported levels of occupational stress.

Other studies have investigated differential mortality rates over occupational categories. For instance, Fletcher (1988) looked at mortality rates of 324,822 British men in 556 occupations and found occupational differences in mortality across five levels of social status. Melius, Sestito and Seligman (1989) found colon cancer mortality rates five times greater than expected among New York mathematical and computer scientists. Additionally, they found secondary school teachers had bone and skin cancer risks four times the greater than expected. Ganster and Schaubroeck (1991) note that these results could be confounded by social status and lifestyle. For instance, the more educated may be more likely to seek diagnostic treatment and become classified as cancer cases.

Other studies have been less successful in imputing health consequences from occupational classifications. Augestad and Levander (1992) investigated personality, health and job stress variables in 122 employees at a maximum security hospital and a penitentiary. They found a marginally significant difference ($p<.10$) on job stress between the two groups, although no health differences were found. Larger scale investigations of morbidity and mortality related to occupations have also failed to differentiate between occupations. The Tecumseh study (House, Strecher, Metzner & Robbins, 1986), found no significant relationships between occupational classifications and morbidity, and limited support for associations between health behaviours and occupational classifications. Kotler and Wingard (1989) in a study of 1,969 females from the Alameda County Study found that employment status and type of employment did not predict mortality risk over a period of eighteen years. Reed, LaCroix, Karasek, Miller and Maclean (1989) found no relationship between job characteristics imputed to occupational classifications and coronary heart disease incidence in an 18-year prospective study where subjects had remained in the same occupation for the entire duration of the study (N=8,006).

Ganster and Schaubroeck (1991) conclude that for broad occupational categorisations, results are often weak, and provide little information as to the etiological role of work stressors on health. Kasl (1984) argues that the use of occupational classifications may act to disguise selection effects. For instance, distinct selection criteria for

different occupations, imperceptible physical health risks or minimum health requirements could serve as alternative explanations for positive findings.

1.5.2 Idiographic Studies

Another general trend in the job stress literature is towards idiographic studies, in which the research aims to establish which conditions within a single occupational setting are associated with mental and physical health outcomes.

A number of studies investigating occupational stress in the teaching profession have employed this idiographic technique. Pratt (1978) found a significant positive relationship between scores on a teacher stress inventory and ill-health measured by the General Health Questionnaire (N=124). Fletcher and Payne (1982) found job demand was positively correlated with depression, anxiety and somaticism for teachers (N=148). Jackson, Schwab and Schuler (1986) found emotional burnout positively related to role conflict in elementary and secondary teachers (N=248). Travers and Cooper (1993) found that compared to other comparable occupations (e.g. client based..doctors, dentists and nurses), United Kingdom teachers exhibited greater levels of mental ill-health (N=1790). Job satisfaction for these teachers was mainly determined by 'the way the schools were managed', and the 'climates and structures' created in them in addition to 'lack of status' and 'lack of chance for a promotion'. Overall mental ill-health appeared to be determined by a number of job related factors such as role ambiguity, lack of status and promotion, job appraisal.

Nurses are also thought to exposed to high levels of occupational stressors. Parkes (1982) randomly assigned student nurses (N=164) to one of four combinations of ward types. Each ward differed on either of two factors; type of nursing (medical or surgical), and the sex of patients (male or female). Results showed that moving to a ward that was perceived more favourably was related to a decrease in affective symptoms and an increase in work satisfaction. For instance, the change to greater job discretion was significantly correlated to reduced symptoms (anxiety, depression, somatic symptoms, social dysfunction, work satisfaction). Additionally, changes in job demands were related to changes in social dysfunction and in sickness absence.

Surprisingly, a reduction in perceived demand was associated with significant rises in dysfunction and sick absences, suggesting work underload may be an important factor.

The work of correction officers is often considered highly stressful. Kalimo (1986) observed that Finnish prison employees who were in contact more with prisoners, had higher serum cholesterol and blood pressure levels than those not in close contact with prisoners. Hall and Spector (1991) in a group of community control officers (N=196), found role conflict and workload were positively correlated with illness symptoms and negatively correlated with job satisfaction, as was role ambiguity. Additionally, job satisfaction was negatively correlated with illness symptoms.

Rose and colleagues (see Rose, 1987 for summary) in their 5 year study of air traffic controllers (ATCs), found employment in high versus low density work towers, was related to a slight increase in neuroendocrine response (N=200). However, those ATC's who were high cortisol responders were subsequently less ill, had higher job satisfaction and were considered more competent by their peers. Rose (1987) suggests that these ATC's were more engaged and challenged by their work, which rather than being physiologically stressful, in fact produced a healthy level of physiological arousal.

In a study of air force pilots (N=128), (Vaernes, Myhre, Aas, Homnes, Hansen & Tonder, 1991), perceived autonomy was significantly negatively related to an index of tension, however there were no significant correlations between anxiety and perceived health complaints. There were significant correlations between C3 (a complement component of immunoglobulin) and a stress index, time pressure, workload, taking the job home, problems with superiors, and conflicts between different groups. Other immunoglobulins were found to correlate with time pressure, worry of being moved, frustration with organisational policy, and leading other people. Regression showed that 31% of variance for C3 could be explained by three items of perceived work stress: taking the job home, leading other people, and problems with subordinates.

The job burnout literature provides additional idiographic evidence of the stressor-strain relationship. Lee and Ashforth (1993a; 1993b) found that emotional exhaustion played a central role in the burnout process among 148 human service professionals. Job and life satisfaction, time spent with clients and subordinates and role stress were associated directly with emotional exhaustion. Exhaustion was consequently associated with feelings of depersonalisation and helplessness, and professional commitment and turnover intentions.

Ganster and Schaubroeck (1991) note that although studies have discovered specific stressors within single occupations, the degree of correspondence between stressors across occupations is marked. They suggest a number of explanations for this. First, it could be due to a methodological artifact where researchers are using the same or similar measures to tap the same set of constructs e.g. overload, ambiguity etc. In addition, they suggest this congruence of findings may just be a reflection of an implicitly popularised narrative of the stress phenomenon. Alternatively, this similarity could represent a general underlying factor operating in the stress process e.g. Karasak's job demands-job decision latitude model.

Similar to occupational specific studies, are studies that look at groups of workers that either work in similar occupations or their occupations can be classed together socioeconomically. Frew and Bruning (1987) found perceived work factors (such as role conflict and role clarity) correlated with a measure of anxiety, although not with objective physiological outcomes such as blood pressure, heart rate and galvanic skin response in a sample of 62 managerial and supervisory personnel. Matthews, Cottington, Talbott, Kuller and Siegel (1987), found overall job dissatisfaction significantly related to elevated blood pressure for blue collar men who had been employed for a minimum of 10 years in two similar manufacturing plants (N=288). In addition, perceptions of poor job security, little influence in decision making, little opportunity for promotion and unsupportive co-workers were significant predictors of diastolic blood pressure when controlling for age, body mass index, alcohol consumption, cigarette smoking, and family history of hypertension. Israel, House, Schurman, Heaney and Mero (1989) found education, race, satisfaction with influence,

satisfaction with supervisor, and negative relations with co-workers and supervisors predicted global job stress for 630 employees of a component-parts manufacturing plant. Further, job type (either on waged or salaried), self esteem, satisfaction with influence, coworkers and supervisors, job security and selective ignoring as a coping strategy were related to job satisfaction in regression analysis. Similar predictive relationships were found for depression and global health symptoms in regression.

Other studies have investigated the role of work related stress in health outcomes in general population samples. Haynes, Levine, Scotch, Feinleib & Kannel (1978) found diastolic blood pressure unrelated to reports of high workload, nonsupportive bosses, job changes and promotions. However, Haynes, et al. (1980) found in 1674 coronary free individuals followed over an eight year period in the Framingham study that work overload and frequent job promotions were related to an increased risk of developing CHD in men. Cherry (1984) in a study which followed 1052 men from birth, found those that had highly demanding jobs reported more nervous strain. Additional findings from the Framingham Heart Study, examining the development of CHD over ten years showed that both men and women in occupations classified as high strain (high job demand, low job control) had a CHD risk approximately 1 1/2 times higher than other classifications (LaCroix & Haynes, 1987). When using self report perceptions of job demands and job control, the risk was 3 times higher for women in high strain jobs and 5 times higher among female clerical workers.

In general, studies that have examined particular occupations, similar occupations, and socioeconomically stratified groups do discover distinctive stressor-strain relationships. Ganster and Schaubroeck (1991) conclude the accumulation of occupational specific data discloses little of the mechanisms by which these stressors operate and has not furnished convincing evidence for the pathogenic specificity of occupational stressors. Fletcher (1991) notes that it is probably more important to determine which job characteristics produce strain than to consider the pattern of strain across occupations and suggests that shifting the emphasis from 'occupations' to 'occupational factors' is more useful. Although the use of occupationally based studies to determine stressful work factors is potentially limiting, they do offer potentially homogenous

samples which Kasl (1981) suggests provides the opportunity to make stronger conclusions about relationships between work factors and mental and physical health outcomes.

1.6 Individual Differences and Other Potential Moderators of Job Stress

It has already been noted that aspects of the personality may increase individuals susceptibility to negative health outcomes. In addition, mention has been made in some studies of the role of personal resources as moderators in the stressor-strain relationship (Cooper & Davidson, 1987; Fletcher, 1991; Lazarus, 1966; Rice, 1991; Karasek, 1979; Israel et al, 1989). Two constructs that have been extensively investigated in this regard are social support and coping.

1.6.1 Coping

Research into work related stress has in the past been influenced by an analysis of the components of the stress process. More commonly now, stress is seen as interactional in nature (Dewe, 1991), involving a "transaction between the individual and the environment" (Dewe, 1989). Account therefore needs to be taken of the cognitive processes that mediate the relationship between stressors and strains. Two such processes are appraisal and coping (Lazarus & Folkman, 1984), which may specifically influence health behaviours, both beneficial and deleterious, and subsequent psychophysiologic responses (Nowack, 1991). The appraisal process refers to a "perceived demand which taxes or exceeds the physical or psychological resources of the individual"; in the context of work related stress, organisational demand. The coping process refers to "cognitive or behavioural efforts to deal with, reduce, or tolerate excess demand" (Folkman, 1984). Recent literature and research on the relationship between stressors and indicators of health status emphasise the considerable mediating function of coping processes (Nowack, 1991). As Shouksmith (1986) notes, the impact of stressors can be reduced by developing more effectual coping responses. Dewe (1989) suggests that the benefit of defining stress using these concepts is that it focuses on processes (appraisal and coping), and thus offers opportunities for further understanding of the stress *transaction* between the individual and the environment.

There is a general acknowledgment in the literature of the importance of coping in the stressor-strain relationship, however as some researchers note (Edwards, 1988; Dewe, Cox & Fergusson, 1993), there is a lack of general consensus on the precise nature of coping and the means by which it influences stress related outcomes.

A number of theoretical approaches to the understanding of the coping process have been identified in the literature. For instance, coping has been viewed as a psychoanalytic process suggesting that individuals utilise "realistic thoughts and actions" to address over-taxing demands (Edwards, 1988). Another approach (noted above) regards coping as a reflection of a personal trait or style such as, hardiness (Ouellette-Kobasa, 1988), locus of control (Spector, 1982), Type A behaviour (Cooper & Baglioni, 1988; Payne, 1988) and sense of coherence (Antonovsky, 1987). In addition, coping has been perceived as a sequence of stages (e.g. Kubler-Ross, 1969) or as a classification of coping strategies such as problem-focused versus emotion-focused coping (e.g. Folkman, Schaefer & Lazarus, 1980; Lazarus & Launier, 1978; Moos & Billing, 1982). These approaches are not without their critics (see Edwards, 1988; Payne, 1988), however Dewe et al (1993) suggest that from these original frameworks, the nature of coping can be seen as that of an integrative process concerned with relationships between the individual and his/her environment.

Effective coping may be related to social support (Thoits, 1986). Kasl and Wells (1985) note that it has been found that people with fewer resources or lower marital support use ineffective coping strategies (ignoring, avoidance) and these strategies are associated with higher levels of psychological distress.

1.6.2 Social Support

As noted earlier, Sutherland and Cooper (1988) suggest that social relationships, are important interpersonal factors in the work environment. There have been a considerable array of models and outcomes proposed to provide a theoretical framework for the study of the "existence, number and frequency" of social relationships (House, Umberson & Landis, 1988). The term social support is generally applied to a broad range of conceptualisations of social relationships and how they

work. Due to the somewhat unwieldy nature of the social support construct, searching for a unitary definition is somewhat meaningless, and most research endorses a multidimensional view of support.

Despite the equivocal nature of the conceptual and operational definitions of social support, reliable associations are generally found with psychological and physical health outcomes. Social relationships have long been believed to be beneficial to health and be protective against disease and even death (e.g. Durkheim, 1951). Significant relationships between low social support and high incidence of morbidity and mortality are consistently found (Shumaker & Hill, 1991). There is considerable research that documents the psychological and physical benefits of social support (e.g. Cohen 1988; Cohen & Wills 1985; Taylor 1990), with social support linked to poorer psychiatric morbidity, suicide, clinical depression, state and trait anxiety and self-reported mental health (Broadbent, Kaplan, Sherman, Wagner, Schoenbach, Grimson, Heyden, Tibblin & Gehlbach, 1983; Cohen & Wills, 1985; Gottlieb, 1983). A number of prospective, population-based studies have consistently shown the beneficial effects of social support on mortality rates (Berkman & Syme, 1979; Blazer, 1982; House, Robbins & Metzner, 1982; Orth-Gomer & Johnson, 1987; Shoenback, Kaplan, Friedman & Kleinbaum, 1986).

These findings raise the issue of whether the relationship between social support and health outcomes is positive because support enhances health and well-being irrespective of stress level (direct or main effects model) or because support protects from the negative effects of stressful events (buffering effects model). With regard to work related stress, both main effects (Ganster, Fusilier, & Mayes, 1986) and buffering effects (Haynes & Feinleib, 1980; LaRocco et al, 1980; Welin, Svardsud, Anderpec, Tibblin, Tibblin, Larsson, & Wilhelms, 1985) have been found. Still others have found that greater social support *enhanced* the relationship between stressors and strains (Beehr, 1976; Kaufman & Beehr, 1986).

There is little evidence to suggest which sources of social support are most effectual. Some studies have shown that supervisor support tends to be the most salutogenic

(Kirmeyer & Dougherty, 1988; Haynes & Feinleib, 1980; see also Kasl & Wells, 1985), while others have found co-worker support an important factor in the stressor-strain relationship (LaRocco et al, 1980). Support from spouse, family and friends has also been shown to effect work related stress outcomes (Ganster et al, 1986). Ganster and Victor (1988) in a review of social support and health, note that in studies that found buffering effects, support from supervisors tended to show the strongest effects followed by support from co-workers.

1.7 Summary

Chapter one has provided a framework for understanding the connections between work related dimensions and mental and physical outcomes, placing them in a wider context by discussing influential models of stress in general and work related stress in particular.

Sources of potential work related stressors were reviewed with a focus on organisational demands and characteristics of the individual. Strains or symptoms of strain were examined and two possible physiological mechanisms for linking stressors to strains were discussed (cardiovascular reactivity and psychoneuroimmunology). Research into two models of work related stress was discussed followed by a review of the more general work related stress literature.

As for the research as a whole, what can be said about the effects of work related stress on mental and physical health? Spector, Dwyer & Jex (1988) note that stress research has been quite successful in demonstrating correlations between job conditions that are considered stressors and a number of outcomes. Ganster and Schaubroeck (1991) note that despite the methodological limitations of some research, the evidence as a whole is highly suggestive that work experiences play a significant role in mental and physical health. Additionally, researchers have become increasingly aware of the importance of individual/personality characteristics in the stressor-strain relationship (Augestad & Levander, 1992; Burke et al., 1993; Fletcher, 1991; Schaubroeck & Ganster, 1991; Sutherland & Cooper, 1988).

The following chapter examines an organisational demand identified by Sutherland and Cooper (1988) as a potential source of "stressors". Concepts relating to *organisational structure* such as organisational size, formalisation and centralisation are discussed.

CHAPTER TWO

Organisational Structure

Contents

In the previous chapter it was suggested that organisational structure may place demands on the individual and act as a "stressor" (Sutherland & Cooper, 1988). The following discussion focuses on key dimensions of structure, how they relate to each other and problems associated with measurement.

2.1 Introduction

Organisations differ along a number of dimensions, such as the extent, purpose and power of their operations. The internal structure of any organisation is the consequence of a number of external and internal influences.

Max Weber's analysis of bureaucracy has been one of the most influential on present day consideration of organisational structure. Weber (1947) identified what is called a *machine bureaucracy.* A machine bureaucracy uses standard procedures to produce standard outputs (Robbins, 1983), and is most effective in stable, predictable environments. The *ideal* machine bureaucracy is characterised by: explicit division of labour where specific activities are performed by specialists; highly routine operating tasks; very formalised rules that regulate behaviour and determine responsibilities;, tasks that are grouped into functional departments; centralised authority; decision making that follows a clear hierarchical formal chain of command; and a complex organizational structure with a clear distinction between line and staff activities (Robbins, 1983). Although the concept of the 'ideal-type' organisation was criticised for its lack of understanding of the practical realities of organisational operations, its conceptualisation had a major impact on how we have come to view organisational structure. It could be said that the bureaucratic notion had for a time constrained the nature of research to a sociological viewpoint rather than an individual psychological viewpoint.

Payne and Pugh (1983) note that the earliest studies of structure examined factors they term "configurational", such as span of control, number of organisational levels, and organisational size. Indeed, an earlier review of studies investigating the relationships between properties of organisation structure and job attitudes, (Porter and Lawler, 1965), identified seven such influences: organisational levels; line and staff

hierarchies; span of control; size of subunits; size of total organisation; shape; number of levels relative to total size, and shape; centralised or decentralised. The Aston researchers, (Pugh, Hickson, Hinnings, & Turner, 1968; Pugh, Hickson, & Hinnings, 1969; Pugh, Hickson, Hinnings, & Turner, 1969), in a sample of various British organisations, distinguished between four basic structural factors: (1) size of the supportive (non-line) component, (2) line control of workflow, (3) structuring of activities, and (4) concentration of authority. These variables, factors or influences can be broadly categorised into three structural concepts. First, issues of organisational size, within various configurations. Second, control of and structuring of work activities (formalisation), and third the distribution of authority (centralisation/decentralisation). These three concepts have been consistently studied in relation to each other and to work attitudes and behaviours.

2.2 Size

There is widespread agreement in the literature that size of an organisation usually refers to the total number of equivalent full-time employees. Hall (1972) notes that although different measures of organisational size have been used in various settings with different samples, there is generally a high correlation between possible measures, suggesting measures are fairly interchangeable. There has, however, been some debate as to the importance of size in determining organisational structure. More specifically the argument has centred on whether size "causes" structure or structure "causes" size. Researchers have noted that large organisations are more complex and formalised than smaller organisations (e.g. Berger & Cummings, 1979). The Aston researchers also found size an important influence on structure (Pugh, Hickson, Hinnings & Turner 1969), and larger size was associated with increased specialisation and formalisation. Blau (1970) in a study of civil employment agencies found increased size was associated with increased structural differentiation. Blau and Schoenherr (1971) concluded size was the primary factor influencing structure. Meyer (1972) in a longitudinal study, compared the same 194 finance departments after five years, and found size to be a major determinant of structure to the extent that the impact of other variables which appeared to effect structure disappeared when size was controlled for.

However, these findings have been questioned with regard to their assumption of the direction of the relationships found. Argyris (1972) reanalysed Blau's data, and cautioned that due to the uniqueness of the requirements and constraints of civil service organisations used in the study, it was not possible to generalise the results to other organisations. Argyris concludes, although size may be related to structure, this does not imply a causal relationship. Aldrich (1972) reexamined the Aston data and suggested a possible alternative interpretation of the findings was that size was the *result* of structure i.e. highly complex and formalised organisations need more staff to operate than do less complex and formalised organisations. Hall, Haas & Johnson (1967) studied size and structure in 75 diverse organisations. With employee numbers ranging from 6 to over 9,000, they expected that any consistent relationships between size and structure would obviously emerge. Although a number of relationships were significant, there were also a number which did not support the previous hypothesis that increased size caused structural differentiation. A later review by Hall (1972) of research on size and its correlates suggests large size is related to increased complexity in terms of specialisation and horizontal and vertical differentiation, however, the results are not strong enough to be generalised to all organisational forms. Although there is plenty of evidence to suggest that size is related to other structural factors, Hall concludes that there are no "laws" regarding size and other organisational characteristics.

2.3 Formalisation

Formalisation basically refers to the degree to which jobs are standardised. A formalised organisation uses rules and procedures to dictate behaviour, with clearly defined authority, accountability and decision-making procedures. If work is highly formalised then the worker has little control over how and when it is done. If work is low in formalisation then employees have greater discretion in their work. Hage (1965) argues that formalisation represents the rules of an organisation and is measured by the proportion of codified (specifically described) jobs and the extent to which variation of behaviour is tolerated within job descriptions. Thus, a highly formalised organisation will have a large proportion of codified jobs and will tolerate little deviance from the prescription of those jobs. Pugh et al. (1968) note that

formalisation is "the extent to which rules, procedures instructions and communications are written" (p.75). The difference between these two definitions is whether rules are formal or informal. Hage and Aiken (1967) utilise the organisational members perceptions of their environment, whereas Pugh et al. (1968) rely on official records and information provided by key informants. While these differences in measurement may appear trivial, they do yield different results and have implications for the whole area of organisational structure research that will be discussed more fully later.

It is generally true that the more routine work is, the more responsive it is to formalisation. Alternatively, the greater the professionalisation of work, the less likely it is to be formalised. For example, the assembly of cars requires relatively unskilled repetitive actions, and is consequently highly standardised by an assembly line. On the other hand, academic work is generally highly professionalised thus relatively informal in nature, and there is huge personal discretion as to how work is undertaken. Subsequently, it is possible to have differing degrees of formalisation *within* the same organisation. Robbins (1983) suggests that the range of formalisation can differ by organisational level and department. As employees move up the organisational hierarchy they are less involved in the repetitive, routine tasks requiring formalisation. Additionally, in the car assembly example, the sales department will be less formalised than the production department, due to the need for more decision latitude in sales processes and the ease with which production can be standardised.

2.4 Centralisation

Centralisation refers to the extent that decision making is concentrated at one point. If an organisation is highly centralised, then authority is restricted to those at higher-levels rather than being delegated. In a decentralised organisation, a considerable amount of authority is delegated to those at lower levels. Miller and Droge (1986) suggest centralisation refers to the distribution of decision making power in the organisation, and reflects the amount of control, autonomy and discretion workers have within an organisation. In a centralised structure, individuals at lower levels in the organisation have a restricted range of decisions or behaviours they can engage in.

In decentralised organisations, the range of decisions and behaviours that individuals at lower levels can initiate is much broader. As Gortner, Mahler and Nicholson (1989) note, the centralisation of structures concentrates authority and decentralisation of structures disperses authority.

Mondy and Premeaux (1993) note a number of organisational effects of both centralisation and decentralisation. Centralisation provides for consistent policy. Action is undertaken in a standardised way and is closely controlled. There is less likelihood of errors being made by unskilled subordinates, with decision-making undertaken by specialised groups. Decentralisation, on the other hand, lends itself to quicker and more appropriate decision-making at the "coal face", as there is little need to consult with higher levels. Employees are more motivated and concerned about outcomes if they are part of the initial decision-making process. Higher levels of authority, through delegation, are freed to focus on the larger picture e.g. planning, policy etc.

2.5 Relationships between Structural Factors

Given the dynamic nature of organisations it is not unreasonable to assume that these three key dimensions of structure do not exist or operate independently.

Notwithstanding Hall's (1972) conclusions about the causal relationship between size and structure, organisational size has been associated with various other indicators of structure. Size has been related to increased structural differentiation and possibly, greater complexity (see Argyris, 1972; Blau, 1970), increased formalisation (Glisson and Martin, 1980; Hickson, Hinnings, McMillan & Schwitter, 1974; Pugh, Hickson, Hinnings & Turner, 1969) and increased decentralisation (Blau, 1970; Hinnings & Lee, 1976; Martin & Glisson, 1989; Pugh et al., 1968; Pugh, Hickson, Hinnings & Turner, 1969). It appears that greater size may necessitate more standardised practices in order to function effectively, consequently greater formalisation of rules and procedures. As size increases, responsibility is delegated as managers are physically unable to directly control decision making. Generally the research suggests that the larger the organisation, the more formalised and less centralised it is. Martin and Glisson (1989) suggest that these relationships are consistent with the possible exception of non-profit and government organisations. Hinnings (1979) found no

significant relationship between size and formalisation for local governments or churches, and found that size and centralisation were only weakly negatively correlated for these two organisational types. Mannheim and Moskovitz (1979) report similar findings for 15 Israeli welfare organisations with regard to formalisation and size, and found that size was related to increased centralisation. Similar findings with regard to size and centralisation are reported for 30 U.S. social welfare organisations by Glisson and Martin (1980).

The distinction between technical-productive organisations and non-profit organisations may also explain why the relationship between centralisation and formalisation is at times unclear. Generally, the research suggests that formalisation and centralisation are negatively related, and it is suggested that they are *alternative* means of control within an organisation (Martin & Glisson, 1989). For instance, Pugh et al. (1968) in the Aston studies found a small negative relationship between the two variables, and Child (1976) in a replication of the Aston study found a strong negative relationship as did Blau (1970). However, others have found strong positive relationships between the two structural properties (Hall, 1963; Glisson & Martin, 1980; Martin & Glisson, 1989). A theme of Hage's theory of organisation (1965) was that centralisation and formalisation would be positively related. Martin and Glisson (1989) suggest that the institutionalised nature of their samples, (social service organisations), may account for differences in findings. As noted above, the relationship between size and formalisation appears to be consistent with the exception of government owned organisations. For instance, some researchers have suggested that the relationships between size and formalisation and centralisation may differ in service organisations versus productive organisations. Pugh, Hickson & Hinnings (1969) have noted that public organisations have more highly centralised authority structures than private organisations, regardless of size. Lammers and Hickson (1979) suggest that the relationships between size and these other structural factors are modified by a cultural variable , what they call a "logic of efficiency". Hinnings (1979) suggests that productive/private organisations are more concerned with productivity and efficiency and are able to objectively measure these factors. Whereas, service oriented or

government organisations may have a more egalitarian culture, where authority is less accountable. For instance, as Argyris (1972) notes, government agencies, and in particular social service providers, are unique in that they have many requirements and constraints that are not apparent in technical-productive organisations, such as budgetary limitations, set staffing levels, set client base and regulatory restrictions. Under these circumstances, Martin and Glisson (1989) propose that organisational size is less a determinant of the structuring of activities and the centralisation of authority than the public-service nature of the organisation. Additionally, they suggest that within these types of organisations formalisation and centralisation may act as two means of control rather than alternatives, resulting in positive correlations. Findings from their studies of social welfare organisations in the U.S.A. (Glisson & Martin, 1980) and the Pacific (Martin & Glisson, 1989) support this contention.

A further possible explanation for the apparent discrepant findings in the relationship between formalisation and centralisation is the nature of the measurement itself. Sathe (1978) noted that studies that use an objective or institutional form of measurement find a negative relationship, while those that use a subjective or questionnaire approach to measurement find a positive relationship between formalisation and centralisation. This leads to consideration of the implications of measurement.

As mentioned, there is general agreement that formalisation and centralisation are important aspects of structure, however, agreement about the importance of these constructs does not necessarily imply agreement about their precise meaning or in particular, how to operationalise them. Typically, measures are either referred to as objective (formal structure via analysis of organisational charts and structured interviews with key informants) or subjective (individual perceptions by way of questionnaires and surveys).

A number of studies have attempted to address the issue of the relationships between these two methods of measuring structural properties. Pennings (1973) investigated the divergent and convergent validity of objective and subjective measures of structure. Using the Pugh et al. (1968) measures as objective indicators of

formalisation and centralisation, and the Hage and Aiken (1967) measures as subjective indicators of formalisation and centralisation on ten organisations varying in size from 175 to 1,200 employees, Pennings (1973) found that there was no convergence between the two types of measures and that as noted above, discrepant results continued contingent on the mode of measurement.

Pennings (1973) suggests that although information gathered objectively, supposedly elicits information about organisations that is not influenced by individual perceptions, this should not be taken to mean that this type of measurement is infallible. For instance, organisational documents may be out-dated, providing misleading information, and the use of key informants and interviewer bias, may prejudice results towards a particular view of the organisation. Further investigation by Sathe (1978) using different measures on a sample of 22 departments within a large insurance company employing over 3,000 people, found low convergence between objective and subjective measures of formalisation (r=.17, ns) and centralisation (r=.08, ns). Again contradictory relationships were found between formalisation and centralisation dependent on the type of measurement used. Sathe (1978) found a negative relationship between the institutional measures of centralisation and formalisation whereas a positive relationship was found between the questionnaire measures of these variables. Similar results have been obtained by Ford (1979). So, even when different modes of measurement of the same construct are utilised on the same sample, different conclusions may be reached.

A likely explanation for discrepant findings is that the two methods of measurement tap into different constructions of the same realities. Sathe (1978) suggests that objective measures generally reflect the formal or "designed structure" of an organisation, whereas subjective measures tend to reveal the extent to which formal structure is encountered and adhered to by the individuals within the organisation ("emergent structure"). For instance, with regard to formalisation, Miller and Weiss (1991) suggest that objective measures may estimate the degree of prescribed written rules and procedures, while subjective measures may evaluate the extent to which employees actually adhere to set rules and procedures. Walton (1981) contends that

objective measures centre on the organisation as a whole, or at the least, on divisions within the organisation. Subjective measures on the other hand, may do this to an extent *and* focus on smaller aggregates such as sections, workgroups, and of course, the individual. Given these diverse perspectives, it is not surprising that the different methods of measurement elicit different findings. Martin and Glisson (1989) suggest that this conclusion should not in itself pose insurmountable problems for the researcher if there is a clear understanding that the two modes of measurement are not interchangeable[3].

2.6 Summary

Chapter two outlined key dimensions of structure and how they related to each other. In summary, the task of any researcher involved in the investigation of organisational structure is to take cognisance of the lack of interchangeability (and consequently, comparability) of objective and subjective measures of structural properties. The apparent discrepancy between findings, is less a problem of measurement than of the appropriate use and interpretation of measures. If the research focus is at the organisational level of analysis, then objective measures will provide more germane information about the *organisation.* However, if the research focuses on the individual within the organisation and their perceptions of the work environment, then subjective methods are the appropriate method of measurement to provide information about the *individual's* response to the organisation. Problems associated with the aggregation of questionnaire data will be discussed in the following chapter.

Chapter three outlines and discusses the theory and research on perceptions of the work environment, with particular emphasis on the distinction between psychological and organisational climate.

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[3] A further potential explanation for discrepancies between findings using either objective or subjective measures is the validity of some of the measures. As Walton (1981) suggests, some of the objective measures of centralisation used by researchers (e.g. autonomy, span of control), to compare with subjective measures, could not in actuality be considered explicit indicators of how concentrated decision making is.

CHAPTER THREE

Perceptions of the Work Environment

Contents

Chapter one identified a number of sources of work related stress (Sutherland & Cooper, 1988). Organisational structure was discussed in the previous chapter as a potential organisational demand. A further organisational demand with the potential for being a source of "stressors" is Organisational Climate. Chapter three outlines and evaluates theory and research on climate with particular reference to the distinctions between culture and climate, and psychological and organisational climates.

3.1 Organisational Culture

It can be argued that both culture and climate assess meaning within organisations (James & James, 1989; Rentsch, 1990), and some have suggested that the two are synonymous (Schneider, 1985; Ouichi & Wilkins, 1985), however Moran and Volkwien (1992) argue that it is possible to make some distinction between the two. Essentially they suggest that problems of definition arise from the multidisciplined origin of culture. That is, its academic evolution from anthropology, sociology, social psychology, and organisational behaviour. Moran and Volkwein (1992) contend if the concepts of culture and climate are viewed from anthropology and social psychology perspectives respectively, then much of the confusion fades. Culture is essentially an anthropological concept which looks at what we learn and how we behave, by examining symbols, myths, and rituals. Within the context of an organisation, this is manifested in the shared values, norms, and expectations of organisational members. Climate focuses on the perceptions of organisational members of their environment. As Schneider (1985) notes, climate comprises the "activities and processes" that are unique to a particular organisation, whereas culture consists of the "norms and values" that occasion them and the way in which norms and values are shared.

Culture is thought to be a relatively immutable organisational characteristic (Moran & Volkwein, 1992), which emerges over a lengthy period of time. Even with high rates of turnover, organisational cultures remain reasonably stable.

Culture can be thought of as defining how activities are done, and is embodied in the nature of customer relations, industrial relations, and employee interactions. Climate on the other hand is thought to be a more "shallow" concept, which evolves from the

same milieu as culture but at a faster rate and is therefore more changeable. Climate may be thought of as the manifestation of employees' perceptions of organisational culture. An important distinction to keep in mind is that culture is regarded as an organisational attribute, whereas climate, as will be discussed in the following chapters, has been viewed both as an organisational and individual attribute.

3.2 Climate

The term climate originally referred to *organisational* climate, and focused on what were considered enduring organisational characteristics as they were perceived by employees. Climate was considered a relatively stable characteristic which distinguished organisations from each other. Moran and Volkwein (1992, p.20) offer the following definition: "Organisational climate (1) embodies members collective perceptions about their organisation with respect to such dimensions as autonomy, trust, cohesiveness, support, recognition, innovation, and fairness; (2) is produced by member interaction, (c) serves as a basis for interpreting the situation; (d) reflects the prevalent norms, values and attitudes of the organisation's culture; and (e) acts as a source of influence for shaping behaviour".

It is important to consider the notion of "collective perceptions" in this definition, as this marks a point of conceptual debate. Is climate an organisational or individual attribute? (Glick, 1985; 1988). To answer this question, it is necessary to understand how climates are formed. A number of authors have proposed different approaches to the etiology of climates.

3.3 Etiology of Climate

The structural approach regards climate as a function of organisational structure and an attribute of the organisation (Guion, 1973; Payne & Pugh, 1983). Climates form because individuals are exposed to the same structural attributes of an organisation, and thus hold similar views about the organisation. The perceptions arise from objective characteristics of the organisation e.g. size, formalisation, centralisation etc. This approach has been criticised on a number of points (James & Jones, 1974; Moran & Volkwein; 1992 Schneider & Reichers, 1983). First, the empirical relationships

between structural variables and climate have not been strong or consistent (Schneider & Reichers, 1983). Second, this approach does not explain the presence of subclimates within an organisation where employees are subjected to the same structural influences. Third, this approach does not take sufficient cognisance of the subjective reactions of individuals to structural properties. Finally, Moran and Volkwein (1992) note that the structural approach does not take into consideration the "interpretative processes of groups" in climate formation.

A second approach to climate is the selection-attraction-attrition (SAA) approach (Schneider & Reichers, 1983). Simply stated, this approach suggests that a combination of organisational selection practices, and individual attraction to and attrition from organisations interact to produce a relatively homogenous group of people, hence climate emerges because employees are similar. Individuals are attracted to certain kinds of jobs for a number of reasons (Schneider and Reichers, 1983) and are involved in a process of self-selection. Organisations on the other hand try to attract the right type of people that are consistent with the organisational expectations. Schneider and Reichers (1983) note that this process does not automatically mean that the organisation attracts the right types as both the organisation and the individual try to present themselves in the best possible way. However, despite the covert misrepresentation of both individual and organisation, "mismatches" tend to be the first to quit the organisation provided they believe they have a better opportunity. Thus, attrition of mismatches is thought to produce a more homogenous workforce and consequently similar perceptions of the organisational environment. This approach then is antithetical to the structural approach as it places all meaning within the individual. For example, the structural approach suggests if an organisation is objectively assessed to have a high level of formalisation of standards, then all employees will share perceptions that their work environment is inflexible and constrained. The SAA approach on the other hand would suggest individuals will share perceptions about the perceived formalisation of standards because they are similar in attitudes and expectations, regardless of the actual objective reality of the formalisation of the organisation. Similarly to the structural approach, the SAA approach does not fully account for the evidence of the formation of subclimates

within organisations (Schneider & Snyder, 1975).

Another, similar, approach to the development of climate is the interactive approach. This approach suggests that climates arise from interactions between members of work groups (Schneider & Reichers, 1983), and is linked to "newcomer socialisation". For example, interaction with fellow employees helps newcomers "fit in", understand and attach meaning to aspects of the work environment. This process of socialisation engenders corresponding perceptions of the work place and thus climate is formed. This approach helps to explain the emergence of differing climates within the same organisation by emphasising the importance of group membership as a determinant of climate. Moran and Volkwien (1992), criticise this approach for its failure to account for the broader context in which individuals interact. For instance, organisational culture is not taken into context as an important influence in the nature of worker interaction.

A fourth approach to the formation of climate is the cultural approach. As Moran and Volkwien (1992) noted, previous strategies did not account for the effect of organisational culture on perceptions of the work environment. Ashforth (1985) notes that, although there are real differences between the concepts of culture and climate, in some respects, there is a close relationship between "shared assumptions" and "shared perceptions". The cultural approach, proposed by Moran and Volkwein (1992) is concerned primarily with the way in which group behaviour evolves. In this respect, this perspective is more sociological in nature than other approaches mentioned. It focuses on the evolution of climate through a "shared culture", created by groups "interpreting, constructing and negotiating reality" (pg.33). This approach is a fairly recent development and a major priority for this approach is a continuing clarification of the distinction between the concepts of climate and culture and the relationships between them.

A fifth approach to climate formation is the perceptual approach. This places the emergence of climate firmly within the individual. This approach, views climate as the individuals response to and perception of the environment. Attention is paid more

to the individuals perceptions than to organisational characteristics. Members of an organisation perceive and make sense of organisational policies, practices and procedures in psychologically meaningful terms. This conceptualisation of the climate construct has been termed *psychological* climate (PC) (James & Jones, 1974). More formally, it is "peoples cognitive representations of proximal environments expressed in terms that represent the personal or acquired meaning of environments to individuals" (James & Sells, 1981, p.275). According to James and colleagues, the unit of analysis for the concept of PC is the individual (James & James, 1989; James & James, 1992; James and Jones, 1974; Jones & James, 1979). PC, then, is a measure of the individual's perceptions of organisational characteristics and processes as a result of interaction within the social environment of that organisation (Florin, Giamartino, Kenny, & Wandersman, 1990). These organisational characteristics and processes etc are said to be *objective* characteristics of the organisation and to be enduring paradigms (Rentsch, 1990).

The development of the concept of psychological climate arose from the desire to understand the psychological processes linking cognitions of work environments to affect and behaviour (James & James, 1989). Although this approach has been criticised for focusing too much on the individual and little on the interaction with others and the organisation (Moran & Volkwein, 1992; Glick, 1985), the following assumptions that underlie the concept of psychological climate appear in part to address some of these criticisms. James and James (1989) suggest that making sense of or giving meaning to the work environment involves the use of "stored mental representations" or schema (beliefs) to interpret stimuli (p.739). The individuals perceptions can be more than just information processing but also involve an *appraisal* or *valuation* process, where they note "the individual cognitively appraises environmental attributes in terms of schema that are derived from work-related values such as recognition or challenge" (p.739). A further assumption is that PC is historical in nature. That is, higher order schemata (HOS) are learned and are a function of ongoing developmental processes. This suggests that individuals with differing learning experiences will develop different schemata to interpret similar environments and will consequently have different PC perceptions (James & Sells, 1981).

Organisational components of the environment may also affect PC. Structural characteristics such as size and complexity are said to be *distal* environmental variables and are thought to have more indirect and complex connections with PC. On the other hand *proximal* variables such as, work roles, leadership behaviour and workgroup interactions are thought to exert relatively direct influence on PC perceptions by reinforcing existing HOS's or providing the opportunity to test and challenge HOS's.

Notwithstanding the criticisms of this approach with regard to the etiology of climate there has been growing acceptance for the distinction between *psychological* climates and *organisational* climates (Schneider & Reichers, 1983; Ekvall, 1987). Simply, psychological climate represents individuals' perceptions of their work environment and organisational climate represents averaged perceptions for groups across organisational settings.

3.4 Aggregation of Psychological Climate to Organisational Level

As noted earlier, (Glick, 1985), there has been debate as to the efficacy of aggregating psychological climate data from the individual level to represent descriptions of organisational levels. The controversy surrounds the question of whether similarity of *psychological* climate scores at different organisational levels is a necessary condition for aggregate scores to be reliable measures of the *organisational* climate of those levels (Moussavi, Jones & Cronan, 1990). One side of the argument states that similarity of individual group members perceptions should be a criterion for aggregation, and that perceptual agreement adds to the predictive power of organisational level climate measured by the average perceptions of the group (James, Joyce & Slocum, 1988). Rousseau (1985) notes that the underlying assumption of using aggregated individual data to represent organisational level attributes is that the organisational level variable embodies a similar form of the construct at a higher level of analysis. The other side of the argument states that perceptual agreement is not a necessary condition for aggregating psychological climate scores, moreover, psychological climate and group or organisational level climate are distinct constructs (Glick, 1985). Glick argues that organisational level climate reflects characteristics

of the *group* to which members belong irrespective of whether those individuals perceptions are similar.

A contributing factor to this debate has been the considerable array of dimensions and measures that have been used to operationalise climate. Climate has been operationalised as an individual psychological variable, as a group variable and as an organisational characteristic aggregated from individuals or sub-groups (Florin et al., 1990). This abundance of instruments leads to a confusion between conceptualisation and measurement. Ostroff (1993) notes that stronger correlations have often been found between aggregated data and outcome variables than individual level data and outcome variables. She argues that generally, problems occur when correlations at one level of analysis are used to make inferences about another level of analysis and vice versa. Florin et al. (1990) note that part of the problem has been that conventional data analysis methods have not taken into account the levels of analysis issue in research and tend to emphasise either individual or group level analyses, and this is largely due to methods that require independent observations within groups.

Glick (1985) argues that unless individual level perceptual agreement is very low, then aggregated scores may appear to be reliable and valid measures of organisational climate as individual level random errors and sources of bias will be cancelled out. However others suggest (e.g. Jones et al., 1979; Joyce & Slocum, 1984; etc) that measuring *both* within group and across group agreement criteria is a practical mechanism "to establishing conclusiveness and consistency in substantive relationships of perceptual constructs" (Moussavi, Jones & Cronan, 1990). Moussavi, Cronan and Jones (1990) note that proponents of both sides appear to have agreed to disagree.

3.5 Relationships between Organisational Structure and Climate

There is general agreement on the basic dimensions of organisational structure (e.g. size, centralisation, formalisation), however these dimensions are thought to describe aspects of the organisation and not individual cognitions and behaviour. Given the emphasis in climate research on the interaction between the individual and the work environment, and the examination of environmental features such as

span of control, size, and complexity, it is plausible that different climates might evolve within different organisational structures. For instance, a highly formalised work environment where procedures and rules are rigorously enforced and adhered to, is not likely to lead to a climate where autonomy and individual initiative are sanctioned. As noted earlier, the structural approach to the etiology of climate emphasises the function of structural attributes, such as size, formalisation and centralisation, in the development of similar perceptions among organisational members (Guion, 1973; Payne & Pugh, 1976). However, others (e.g. Jones & James, 1979) suggest that structural characteristics have more indirect and complex connections with climate and are said to be *distal* environmental variables, and have argued that climate perceptions are more strongly linked to processes than to structural characteristics (Indik, 1968; Lawler, Hall, & Oldham, 1974). James and James (1989) note that, individuals assess the meaning of work environment characteristics. Accordingly, climate develops from the individual's attempts to make sense of the organisational conditions and these climate perceptions then influence responses to that environment such as absenteeism or satisfaction. Ekvall (1987) proposes that climate originates from the confrontation between individuals and the organisational environment. He suggests that factors such as rules, procedures, policies and the physical environment elicit responses from organisational members. As, Schneider and Reichers (1983) suggest, individuals observe and interpret these organisational background variables in climate terms. Thus, there appears to be agreement that organisational structure characteristics do influence climate perceptions, however there is debate as to the preeminence of that influence in the emergence of those perceptions. Kozlowski and Hults (1987) note, many researchers now utilise a model that regards climate as *mediating* the relationship between organisational environment and individual responses. This model suggests that organisational variables, such as structure, act as stimuli that provide individuals with information on which they base their descriptions and perceptions of the work environment.

Given the general agreement in the literature that structure does influence climate perceptions, in some form or another, what is the empirical evidence for such a

link? There have been numerous studies that have looked at the relationship between structure and climate. However, there have been surprisingly few studies that directly investigate this relationship in recent years.

Early studies have generally viewed climate as a function of structure and there have been studies linking structural attributes of the organisation such as size, centralisation and formalisation, to climate. Indik (1965) found relationships between organisational size and amount of communication among organisational members, amount of higher level interpersonal control, lack of coordination, felt bureaucratic inflexibility and tendency to participate. Lawler, Hall and Oldham (1974) found no significant patterns of relationships between organisational size and climate variables in a sample of 21 organisations. However, Payne and Mansfield (1973) found that organisational size had a strong effect on perceived organisational climate dimensions such as job challenge, readiness to innovate, concern for rules and sociability, and in fact was more strongly related to climate than formalisation or specialisation. Child and Ellis (1973) found that in larger organisations, managers perceived themselves as having a broader scope of authority but perceived their roles as being more formalised by documentation. Dastmalchian (1986) looked at 15 industrial organisations in the UK and found that the size of the organisation related positively to climate dimensions of orientation to wider community, labour and owner dependencies and negatively to input dependency. It has been suggested that larger organisations are more bureaucratic in nature (Pugh, Hickson & Hinnings, 1969), and thus produce climates that encourage depersonalisation, alienation and formalised role definitions. Mansfield and Payne (1977) found that more bureaucratic organisations were likely to have climates characterised by rule orientation, conventionality and administrative efficiency. However, as Poole (1985) notes, relationships between climate and size tend to also be a function of the environment in which the organisation operates. Payne and Pugh (1976) in their review of the relationships between climate, context and structure concluded that "size has related more pervasively to different climate variables than has any other single structural variable" (p.1157).

The relationship between centralisation and climate is complex. Payne and Pugh (1983) in their review of the literature on perceived climate and perceived structure concluded that, in general, there were fairly clear relationships between decentralisation and aspects of climate such as warmth, consideration and support, such that when people perceived a decentralised structure, they also perceived a climate supportive of some risk taking and conflict. In addition, contrary to expectations, bureaucratic or highly structured organisation did not necessary lead to cold, unsupportive and unfriendly climates. George and Bishop (1971) found that for a sample of teachers, perceptions of school climates (characteristics of faculty group, and characteristics of the principal) were a function of the interaction between personality profiles of teachers and structural characteristics of school organisation (e.g. centralisation). Payne and Pheysey (1971) found significant differences in climate scores across two dissimilar organisational structures. Of the two organisations, the more centralised and structured organisation was the one in which work groups at all levels in the company were more formal and less autonomous (Payne, Pheysey & Pugh, 1971). Child and Ellis (1973) found centralised decision-making was positively related to role routine, levels of questioning authority and pressing for change. In addition, centralised decision-making was negatively related to level of perceived authority, however it was unrelated to conflict. Dastmalchian (1986) found that centralisation was positively related to leader distance, rule orientation and negatively related to orientation to the wider community. Payne and Pugh (1983) went on to review the relationship between objective measures of structure and perceptual measures of climate, and found that although there were significant relationships, they differed unpredictably in size and direction across samples

The degree to which the organisation structures the activities of its members, formalisation, has also been related to climate. Child and Ellis (1973) found formalisation positively related to role formalisation and perceived authority, and surprisingly, related to low levels of role routine and high levels of conflict. Payne and Mansfield (1973) found that formalisation was positively related to aspects of climate such as scientific and technical orientation, sociability and orientation to the

wide community. Jones and James (1979) in their development of the Psychological Climate questionnaire, hypothesised that high levels of anatomical structure (related to aspects of size and specialisation), would be associated with climates characterised by relatively uncooperative, unfriendly workgroup relationships, poor communication and leadership, and monotonous and unchallenging tasks. Further they suggested that high levels of operational structure (e.g. centralisation and formalisation), would be associated with climates characterised by low levels of role conflict and ambiguity, task-oriented leadership, low levels of individual autonomy and monotonous unchallenging tasks that were low in complexity. Results generally failed to support these propositions. Relationships between psychological climate and the two types of structure scores were low and generally nonsignificant, and where significant then only in terms of low correlations with size-related variables. The authors suggest that a partial explanation for a lack of significant findings may be that the relationship between structure and climate perceptions may be mediated by organisational, subunit or group processes such as leadership, communication and reward mechanisms. This reflects their perception of structural variables being distal influences on climate perceptions whereas process variables are more proximal. Payne and Pugh (1983) conclude that structure and climate are multidimensional, and relationships and interactions between the two and other variables may be too intricate to allow simplification with regards to the direct effects of one on another.

3.6 Measuring Psychological Climate

James and Jones (1974) concluded that the construct of organisational climate had been a type of catch-all concept which inevitably duplicated other situational attributes of the work environment such as structure, process and context. As noted above, psychological climate grew out of a desire to differentiate between climate as an organisational attribute and climate as an individual attribute in order to clarify both the definition and measurement of the climate construct (James & Jones, 1974).

Several forms of the Psychological Climate Questionnaire have been developed.

Jones et al. (1979) describe a long-form questionnaire of 145 items represented by 35 composite variables. The 35 composites were devised to measure four broad areas of the organisational environment covering perceptions of job or role related characteristics, leader oriented characteristics, measures of workgroup characteristics, and subsystem and organisational characteristics. Through extensive reviews of the literature relevant to the respective areas and through pilot studies (James & Hornick, 1973 and Jones, 1973, cited in Hornick, James & Jones, 1977), items were chosen that had demonstrated validity in describing the organisational environment in previous research. Composites comprised two to seven items and were summed across item responses to provide composite scores.

The job or role related measures included the following; Role Ambiguity, Role Conflict, Job Autonomy, Job Variety, Job Importance, Job Feedback, Job Challenge, Job Pressure, Efficiency of Job Design, Job Standards and Opportunities to Deal with Others. The second group of scales reflects leadership characteristics, such as; Support, Goal Emphasis, Work Facilitation, Interaction Facilitation, Planning and Coordination, Upward Interaction, Confidence and Trust Upwards, and Confidence and Trust Downwards. The workgroup characteristics were reflected in scales such as; Workgroup Cooperation, Reputation for Effectiveness, Workgroup Esprit de Corps, and Workgroup Friendliness and Warmth. The final set of scales, reflecting subsystem and organisational characteristics included; Openness of Expression, Organisational Communication Downwards, Interdepartmental Cooperation, Conflict of Organisational Goals and Objectives, Ambiguity of Organisational Structure, Consistent Applications of Organisational Policies, Organisational Esprit de Corps, Professional Esprit de Corps, Planning and Effectiveness, Fairness and Objectivity of the Reward Process, Opportunities for Growth and Advancement and Awareness of Employee's Needs and Problems.

This questionnaire was administered to an American Navy sample (N=4,315). Reliabilities (alphas) for the composite variables ranged from .44 to .81. Principle components analysis (varimax rotation) was undertaken on the 35 composites and resulted in six components with eigenvalues ≥ 1.0. These components were

labelled: Conflict and Ambiguity; Job Challenge, Importance, and Variety; Leader Facilitation and Support; Workgroup Cooperation, Friendliness and Warmth; Professional and Organisational Esprit; and Job Standards. The percentage of variance explained by these six components was 59%. These components were compared to results from two earlier studies. Hornick, James and Jones (1977) employed a 170 item, 42 composite PC questionnaire administered to 398 U.S. metropolitan firemen. Again six components with eigenvalues ≥ 1.0 were found, and they accounted for 63% of the explained variance. James, Hartman, Stebbins, and Jones (1977) used a 142 item, 35 composite PC questionnaire administered to 504 managerial employees. Six components with eigenvalues ≥ 1.0 were again found which accounted for 67% of the explained variance. Jones et al. (1979) found a high level of correspondence among the components across the three samples. Five of the six components were congruent across the three studies (Leadership Facilitation and Support; Workgroup Cooperation, Friendliness and Warmth; Conflict and Ambiguity; Professional and Organisational Esprit; and Job Challenge, Importance and Variety). The sixth component appeared to be idiosyncratic to each sample. As noted in the Navy sample, it represented Job Standards. In the firemen sample, the sixth component appeared to represent mutual trust between subordinates and superiors. In the managerial employees sample the sixth component appeared to be a specific measure of Job Challenge, Variety and Importance (mentioned in the Navy sample), however, the composites that loaded on this component also loaded relatively highly on other components (Jones et al., 1979). Apart from the component in each sample that did not appear to generalise to others, the studies provide support for the reliability of PC components.

Short form and/or relevant sections of the PC questionnaire have also been used in a number of studies (Butler & Jones, 1979; James, Hater & Jones, 1981; James & James, 1989; James & Jones, 1980; James & Tetrick, 1986; Jones, James & Bruni, 1975; Jones, James, Bruni & Sells, 1975). Butler and Ehrlich (1991) using a 23 composite version of the PC questionnaire on 181 health workers produced four components generally consistent with previous findings. Short form

questionnaires were generated by combining highly correlated variables from the longer versions of the questionnaire and by discarding items that detracted from internal consistency and composite homogeneity (James & Sells, 1981). In studies using shortened versions of the PC questionnaire, only four components are consistently found: Role Stress and Lack of Harmony; Job Challenge and Autonomy; Leadership Facilitation and Support; and Workgroup Cooperation, Friendliness and Warmth (see Table 2: James, James, & Ashe, 1990). James and Sells (1981) report that in addition to the three studies on Navy personnel, managerial employees, and firemen, samples including production-line workers, supervisory personnel, systems analysts and computer programmers have all produced highly similar PC dimensions notwithstanding the version of the PC questionnaire used.

3.7 Summary

Chapter three outlined and evaluated the theory and research on perceptions of the work environment. A distinction was made between the essentially anthropological nature of organisational culture and the psychological nature of climate. A further distinction was made between psychological climate, which represents individuals' perceptions of their work environment, and organisational climate, which represents averaged perceptions for groups across organisational settings. The debate regarding aggregation of these averaged perceptions to represent descriptions of organisational environments was also discussed. Relationships between organisational structure and climate suggest that these constructs are multidimensional and elude simplification, although some researchers suggest structure has a distal effect on climate while others maintain a more proximal effect. The development and measurement of psychological climate as described by James and Jones (1974) was discussed.

The following chapter examines the research and theory with regards to job satisfaction.

Table 2
Psychological Climate (PC) composite variables by four factor domains (from James, James & Ash, 1990)

Role Stress and Lack of Harmony	*Leadership Facilitation and Support*
Role ambiguity	Leader trust and support
Role conflict	Leader goal facilitation
Role overload	Leader interaction facilitation
Subunit conflict	Psychological influence
Lack of organisation identification	Hierarchical influence
Lack of management concern and awareness	
	Work Group Cooperation, Friendliness and Warmth
Job Challenge and Autonomy	Work group cooperation
Challenge and variety	Work group friendliness and warmth
Autonomy	Reputation for effectiveness
Job importance	Esprit de corps

CHAPTER FOUR

Job Satisfaction

Contents

Chapter one identified job dissatisfaction as a potential individual symptom of occupational ill health. Fletcher (1991) notes that job satisfaction can be viewed as a mediator between the work environment and subsequent health outcomes. Chapter four reviews the job satisfaction literature, with particular reference to relationships with demographic correlates, structure and climate, and the consequences of dissatisfaction on mental and physical health.

4.1 Introduction

Work is a central focus in most peoples lives. Often our lives are defined to a large extent, by ourselves, by others, by the type of work we do, our career stage and the status inherent in our job. Not surprisingly, such a central activity engenders powerful attitudes and emotions. Baron and Greenberg (1990) note that individuals can effortlessly describe their feelings, beliefs and attitudes towards their jobs, both negative and positive, and that in sum, these responses are encompassed under the umbrella term of job satisfaction.

Job satisfaction is concerned with an individual's feelings about their job. Generally, job satisfaction is considered contextual and situation contingent. However, recently there has been a suggestion that job satisfaction is a dispositional attribute or stable trait. For this to be established, evidence of stability across time and situations is required. Schneider and Dachler (1978) found that facets of job satisfaction were reasonably stable over a 16 month period (mean retest correlations .56 and .58 for managers and non-managers respectively). Further, Staw and Ross (1985) found significant stability across 3 and 5 year time intervals even for those who had changed jobs and employers. In a study of monozygotic twins, Arvy, Bouchard, Segal & Abraham (1989) found a genetic component in job satisfaction, such that 30% of total variance in job satisfaction could be explained by a genetic component in twins reared apart. However, Gutek and Winter (1992) argue that if job satisfaction is dispositional, then it should be invariate even if people are asked to evaluate the job after they have left it. They argue that consistency of job attitudes in longitudinal studies may be an artifact of the research method. For instance, results supporting the dispositional nature of job satisfaction could be due to an unmeasured response-shift

bias. For example, prior to a change of job an employee rates their job satisfaction as average. A subsequent change in job expands their frame of reference and they then decide that they had a below average level of job satisfaction in their last job and now view their job satisfaction in their current job as average. Thus the satisfaction rating remains the same over time for different jobs but in reality actual levels of satisfaction were dissimilar. Gutek and Winter (1992) tested this proposition with data from two cross-sectional studies and one longitudinal study. They found no consistency of job attitudes across job situation when taking into account a possible occurrence of a response-shift bias for people who changed jobs. When people were asked to evaluate two different jobs at the same point in time, they made obvious distinctions between the two. Gutek and Winter (1992) contend that agreement of so called dispositional related attitudes over time is not a robust finding.

Despite the inconsistency of findings for the dispositional component of job satisfaction, there is some data that suggests that there is a general factor, pervading all areas of our lives, that predisposes individuals to be satisfied or, conversely, dissatisfied with various aspects of their lives. Affective dispositions predispose individuals not only to be satisfied with their jobs but also to experience satisfaction with other aspects of their lives as well. In support of this position, Staw, Bell and Clausen (1986) constructed a 17-item affective disposition scale that was administered in adolescence. Scores on the scale were a significant predictor of job satisfaction nearly 50 years later, even after controlling for objective differences in job conditions. Gutek and Winter (1992) concluded that there is growing evidence that trait measures of emotions are significantly related to employee job satisfaction. This perspective is discussed more fully in relation to negative affect (see pg. 74).

Notwithstanding the recent discussions of a dispositional component of job satisfaction, there is widespread agreement that, broadly stated, job satisfaction is an affective response to a job situation where the individual compares reality to expectation (Cranny, Smith & Stone, 1992).

The literature regarding job satisfaction is considerable. Locke (1983) notes more than

3,300 studies on the topic had been published prior 1983. Surprisingly, there have been relatively few recent studies about the relationship between job satisfaction and aspects of the workplace environment (i.e. structure, context and climate). What research there is will be reviewed in following sections. There is however, substantial empirical evidence pertaining to individual differences in job satisfaction (both demographic and functional), which will be briefly reviewed.

4.2 Organisational Structure and Job Satisfaction

There is little recent evidence with regards to the relationship between structural variables and job satisfaction. Porter and Lawler (1965) in a review of the relationships between structure and job attitudes and behaviours, examined the research on three organisational properties; size, shape - tall or flat (e.g. span of control), and shape - centralised or decentralised. At the time very few studies had been undertaken looking at total organisational size and either job attitudes or job behaviour. There was some evidence for a negative relationship between size and job satisfaction and morale. With regard to whether flat or tall organisational structures affected attitudes, there was some evidence for a positive relationship between flat structures and job satisfaction in small organisations, and the reverse for large organisations. With flatter organisations, individuals are presumed to have greater autonomy and thus contribute more to the organisation and consequently enjoy greater job satisfaction. A tall structure on the other hand is presumed to increase control and coordination by supervisors. In a small organisation, a tall structure requiring tight managerial control could result in unnecessary bureaucracy and be detrimental to employee attitudes. A flat structure in a large organisation could create problems for coordination of activities, leading to lower job satisfaction for employees.

The Porter and Lawler (1965) review found no clear support for any particular relationship between decentralisation and employee attitudes. A later review by James and Jones (1976) looked at the conceptual relationships between organisational structure and individual attitudes and behaviours, and concluded that the development of integrated models for the study of structure/attitude/behaviour relationships required further considerable effort. Berger and Cummings (1979) in a review of the empirical

literature on organisational structure, attitudes and behaviours since Porter and Lawler's review, looked at three aspects of structure related to the total organisation; size, complexity and centralisation. The authors concluded that although there had been an increase in the number of studies, there had been insufficient data to support any robust conclusions on the effects of organisational size on attitudes and behaviour. As found in the Porter and Lawler (1965) review, there was some support, (e.g. Ivancevich & Donnelly, 1975) for a positive relationship between flat organisations and job satisfaction. With regard to centralised versus decentralised organisations, the authors found limited evidence for a negative correlation between centralisation and job attitudes, however, no studies relating this aspect of structure specifically to job satisfaction were reviewed. Locke's (1983) review of job satisfaction does not address the association between organisational structure and job satisfaction, although the author notes that role ambiguity and role conflict, often associated with low formalisation, have been associated with job dissatisfaction.

One study, not addressed in the previous reviews, that specifically addresses the association between organisational structure and job satisfaction examined employees of social service departments in the United Kingdom (N=603), on measures of structure in relation to job satisfaction using Hage and Aiken's (1967) measures of centralisation and formalisation (Kakabadse & Worrall, 1978). In bivariate analyses, of the two indices of centralisation, Hierarchy of Authority was negatively related to satisfaction with career ($r=-.30$, $p<.001$), however, Participation in Decision Making was positively related to job satisfaction, although not significantly ($r=.05$, ns). Both indices of formalisation were negatively related to satisfaction with career in bivariate analyses, Rule Observation ($r=-.13$, $p<.001$) and Job Codification, although the latter was not significant ($r=-.04$, ns). With multivariate analysis, only Hierarchy of Authority remained significant, when controlling for other structural variables. These results suggest that dissatisfaction is a function of limited autonomy in the decisions made about individual tasks.

Further studies have shown overall relatively consistent negative relationships between formalisation or centralisation and job satisfaction (Brooke & Price, 1989; Dewar &

Werbel, 1979; Oldham & Hackman, 1981; Rousseau, 1978). These relationships are further demonstrated using indicators of formalisation or centralisation/decentralisation: Participation in decision-making (Aiken & Hage, 1966; Packard, 1989; Kline & Boyd, 1991); Hierarchy of Authority (Carpenter, 1971; Hage, 1965; Ivancevich & Donnelley, 1975; Miller, 1980; Snizek & Bullard, 1983), and routinisation (Agho et al., 1993; Blegen, 1993; Brooke & Price, 1989).

The research into structure and job satisfaction appears to be largely atheoretical, although bureaucracy theory provides some insight into these relationships. Bureaucracies possess a number of characteristics; they are hierarchical in nature, they have large numbers of individuals at the lower levels of the organisation, decision making is centralised, and rules and regulations are formalised (Blau & Meyer, 1971). As Gruneberg (1979) notes, these characteristics have consequences for employees satisfaction. For instance, the hierarchical structure will lead to difficulties in upward communication with those making decisions concerning lower level jobs. Consequently, decisions are more likely to be made without taking into consideration the specific needs of the job incumbent, possibly leading to dissatisfaction. In addition, delay due to the number of levels in a hierarchical structure through which communications must be channelled, could result in considerable lag between notification of a problem and action to remedy the problem. Gruneberg (1979) also notes that bureaucracies tend to take little cognisance of the informal social relationships that exist in organisations, particularly with regard to the movement of personnel within organisations. These relationships are often a salient source of satisfaction at work. Bureaucracies are not, however, structures that inherently engender dissatisfaction. In larger organisations, in particular, the standardisation of rules and regulations is often a necessity for the smooth coordination of activities, the lack of which could lead to considerable employee frustration and dissatisfaction. Individual differences may moderate the relationships between structure and satisfaction. Obviously individuals that require standardised procedures and a feeling of security will be more satisfied in an environment that is characterised by high formalisation and centralisation, than the individual who enjoys autonomy in their tasks and involvement in decision making (Blau & Schoenherr, 1971; Gruneberg, 1979).

4.3 Climate and Job Satisfaction

In chapter three it was noted that climate, both psychological and organisational, encompasses a large array of perceptions of the work environment. Locke (1983) reviewed the literature and found that work attributes that had been found to be related to work satisfaction included: opportunity to use ones values skills and abilities; opportunity for new learning; creativity; variety; difficulty; amount of work; responsibility; non-arbitrary pressure for performance; control over work methods and work pace (autonomy); job enrichment; and complexity. These attributes are clearly reflected in the climate literature. Job or role related climate variables such as role ambiguity, role conflict, role overload, are consistently related to low job satisfaction (e.g. Agho et al., 1993; Brooke & Price, 1989; Butler & Ehrlich, 1991; Glisson & Durick, 1988; Jackson & Schuler, 1985), as are lack of task identity, task significance and feedback (Oldham & Hackman, 1981). Autonomy, another job related climate variable is consistently related to high job satisfaction (Agho et al., 1993; Blegen, 1993; Oldham & Hackman, 1981). Job variety is a further climate variable that is often related to high job satisfaction (Glisson & Durick, 1988; Oldham & Hackman, 1981). Negative relationships between dimensions of conflict at different levels of the organisation and job satisfaction have been reported (Blegen, 1993; Dewar & Werbel, 1979; Glisson & Durick, 1988). Positive ratings of leaders and leadership styles are invariably related to higher levels of job satisfaction (Blegen, 1993; Butler & Ehrlich, 1991; Glisson & Durick; 1988; Kumara & Koichi, 1989). Job satisfaction has been positively related to aspects of climate such as warmth, support, reward, and identity (McGinnis & Morrow, 1990), and to human resources primacy, communication flow, and decision-making practices (Kline & Boyd, 1991).

There is certainly considerable evidence for relationships between aspects of climate and job satisfaction. James and Jones (1980) note that research has lead to a number of assumptions underlying the relationship between climate and job satisfaction. First, that climate and job satisfaction are distinct constructs. It should be noted that there has been some debate in the literature as to whether these two constructs are in fact independent (Guion, 1973; James and James, 1989; Johannesson, 1973; Schneider and Reichers, 1983). Schneider and Reichers (1983) suggest that when climate and

satisfaction are conceptualised descriptively and evaluatively (respectively) then the constructs are distinct. Second, there is a general assumption that the relationship between these two constructs is unidirectional i.e. climate perceptions affect satisfaction. James and colleagues provide some evidence from a number of studies for a significant *reciprocal* causal relationship between job satisfaction and job perceptions or psychological climate (see below). A third assumption to emerge from the research on climate and job satisfaction is the use of moderator models. James and Jones (1980) note that evidence for moderator models in the climate literature is weak or inconsistent. Ostroff (1992) investigated the effects of climate and individual variables and the interactions between the two on job satisfaction. Although, both sets of variables were significantly related to facets of job satisfaction, interactions between the two did not significantly add to the explained variance. Ostroff (1992) suggests that perhaps it is time to rethink the interactionist approach to this area of research and proposes that a more useful approach may be to think in terms of an additive, linear model in which person and situation factors are mutual precursors of individual behaviour and attitudes.

Although findings tend to make it difficult to draw any firm conclusions on the relationships between job satisfaction and climate because of the complex nature of both concepts, the job characteristics model (Hackman & Oldham, 1975; 1976) suggests that psychological states (cognitive perceptions or meaningfulness), mediate the relationship between job characteristics (e.g. skill variety, task identify, autonomy etc) and affective outcomes (such as job satisfaction), thus affect is post-cognitive i.e. affect follows cognition in the causal order. The idea that individuals assess their work environments in psychological meaningful ways that they in turn respond to affectively is further developed by James and colleagues (see discussion of psychological climate, pg. 51), however, they also investigate two of the main assumptions of this general model; the assumption of a unidirectional relationship between perceptions and affect, and the assumption that affect is post-cognitive. James & Tetrick (1986) describe three models to explain the relationships between job perceptions (job challenge, job autonomy, job importance) and job satisfaction, (defined as an affective response to job and task events). The first, the post-cognitive-

nonrecursive model, initially draws on a previous theoretical rationale, namely, the Hackman and Oldham (1975; 1976) job characteristics model. James and Tetrick (1986) add to this model by depicting a reciprocal loop between job satisfaction and job perceptions based on previous research (James & Jones, 1980). The nature of this reciprocal relationship suggests for instance, that job satisfaction is caused by psychologically meaningful perceptions. These perceptions may suggest to the individual that the job fulfils certain needs such as challenge, autonomy and recognition. Further, job perceptions may be caused by job satisfaction in that satisfaction serves to provide a framework for the individuals response to the environment, such that perceptions are reconstructed to fit pre-existing cognitions of the beneficial or detrimental nature of the environment. The second model proposes a pre-cognitive-recursive relationship, such that job attributes and workgroups affect job satisfaction which in turn affects job perceptions. This explanation is allied with Social Information Processing theory which suggests that "employees develop a generalised reaction to the work environment and subsequently perceive the characteristics of their jobs considering this global impression" (Mathieu, Hofmann & Farr, 1993). A third model proposes a pre-cognitive-nonrecursive relationship. This model is similar to model one, except that as the name suggests job satisfaction precedes job perceptions in the causal order i.e. affect is pre-cognitive. Results from confirmatory analyses provided support for the post-cognitive-nonrecursive model, but not the other two models. Cognitions preceded affect in the causal process, supporting cognitive approaches to the study of environments, and the causal relationship between job perceptions and satisfaction was reciprocal. This reciprocal relationship has since been replicated (James & James, 1992). Mathieu et al. (1993) tested the same three models and also only found support for the post-cognitive nonrecursive explanation for the relationship between job perceptions and job satisfaction. Mathieu et al. (1993) found the causal path to be stronger from job perceptions to job satisfaction than the reverse, although the difference was not significant. However, James and Tetrick (1986) found the job perceptions - job satisfaction path had significant causal precedence over the job satisfaction - job perceptions path.

4.4 Individual Differences and Job Satisfaction

Brush, Moch & Pooyan (1987) contend that given the assumption that job satisfaction may differ according to demographic profiles, not enough studies control for the effects of demographic variables. There is ample evidence to suggest that there is a positive relationship between age and job satisfaction (e.g. Agho et al., 1993; Blegen, 1993; Brush et al., 1987; Dewar & Werbel; 1979; Glisson & Durick; 1988; Oldham & Hackman, 1981). A number of explanations that could account for this relationship have been put forward, including different generational expectations, the "grinding down" of expectations with age, and age related job opportunities (Wright & Hamilton, 1978). In an empirical test of these proposed explanations, Snyder and Mayo (1991) found little support for either proposition, however, suggest that each of the hypotheses probably does contain some explanatory power, and that they should be viewed as alternative explanations (rather than competing explanations) within more complex models of job attitude and behaviour than have previously been offered.

In a study testing whether age or tenure was the strongest demographic predictor of job satisfaction, Bedeian, Ferris & Kacmar (1992) found that age and tenure although highly correlated, $r=.51$, $p<.05$, were distinct variables leading to different outcomes. They found that tenure was a more stable predictor of job satisfaction than age, and note that this is not surprising in that unlike age or sex, tenure may still be used, legally, as a basis for rewards and staffing decisions. Obviously tenure is a possible confounding variable in research on age and job related perceptions. The internal validity of research may be threatened if this variable is not controlled for. There is debate as to whether the relationship between age and job satisfaction is linear or curvilinear (Gruneberg, 1979; Kacmar & Ferris, 1989; Luthans & Thomas, 1989; Rhodes, 1983; Snyder & Dietrich, 1991). Accordingly it would be prudent for researchers investigating age and job satisfaction to test for polynomial terms in multivariate analyses.

With regard to gender, the evidence for differential job satisfaction is contradictory and inconsistent (Gruneberg, 1979; Weaver, 1980), with some reporting males more satisfied, and others finding no difference. Studies on racial differences, the majority

undertaken in the United States, generally show job satisfaction to be lower for blacks (Jones et al., 1977; Weaver, 1980). Tuch and Martin (1991) suggest that this finding is not unexpected given the work-place disadvantages that blacks in America continue to experience and conclude that blacks' lower job satisfaction is not a function of race, but of their relatively different work conditions. As noted by Landy (1985), where differences are found for ethnicity and gender, the percentage of variance explained in job satisfaction is small and generally evaporates when controlling for other variables such as education, pay, occupational level.

It is obvious that satisfaction with the income we receive is an important factor in determining our job satisfaction. However, the evidence for the relevance of income levels to job satisfaction is conflicting. Many studies have reported a positive association between income and job satisfaction (e.g. Agho et al., 1993; Weaver, 1980), while others find no apparent relationship between pay and job satisfaction (e.g. Glisson & Durick, 1988; Opsahl & Dunnette, 1966). Perhaps one of the explanations for conflicting findings is that it may not be appropriate to explain differences in job satisfaction levels simply in terms of the magnitude of pay. In an experiment designed to test the relationship between the magnitude of reward and satisfaction, Yinon, Bizman, and Goldberg (1976) found that subjects were more satisfied when their reward was higher than that received by comparable others, as compared to when the same reward was described as less than what comparable others received, suggesting that relativity is an important factor in the income/job satisfaction relationship.

The relationship between job satisfaction and education is also mixed. For instance, some have found a negative correlation between education and job satisfaction (Oldham & Hackman, 1981), whereas others have found education positively related to job satisfaction (Agho et al., 1993; Weaver, 1980). Weaver (1980) notes that until the mid 1960s, most studies found either a non-existent or negative correlation, however, in more recent times, results tend to favour a positive relationship. Possible explanations for this is the relative reduction in unskilled jobs and the increase in highly skilled and technical jobs, resulting in fewer mis-matches between skills

(education) and tasks (jobs).

4.5 Negative Affect

Early research on job satisfaction focused on the influence of situational factors, such as the aspects of the job or work environment. However, more recently, researchers investigating job satisfaction have looked at stable personality traits inherent to the employee. One characteristic that has been consistently related to job satisfaction is negative affect. Work by Watson and colleagues has shown that employees predisposed to negative affectivity are more likely to have low job satisfaction (Watson & Clark, 1984; Watson, Pennebaker, & Folger, 1987; Watson & Tellegen, 1985). In a recent study on 82 university personnel, Watson and Slack (1993) found that negative affect significantly predicted job satisfaction facets. These relationships were maintained over a 2 year time frame, suggesting a dispositional affect. Agho et al. (1993) in a sample of 405 full-time and part-time employees of a Veterans Administration Medical Centre found negative affect related to low job satisfaction (r=-.27, p,.01) in bivariate correlations, however this relationship disappeared when other job characteristics and personality variables were controlled for (e.g. role ambiguity, role overload etc and work motivation). This relationship was further mediated by demographic variables, suggesting that negative affect does not directly affect job satisfaction, but acts on it through its effect on other variables.

This brief review of the relationships between individual differences and job satisfaction suggests that even if these variables are not the primary focus of inquiry, researchers should include them as a precautionary measure when investigating job satisfaction.

4.6 The Consequences of Job Satisfaction

Job *dissatisfaction* has a number of both economic and personal consequences. The economic effects include the effects on commitment, productivity, absence, turnover, and counter-productive behaviour (e.g. Brooke & Price, 1989; DeCotiis & Summers, 1987; Glisson & Durick, 1988; Igbaria & Guimaraes, 1993). The following discussion focuses on the effects on the individual's mental and physical health.

First, feelings about work may be generalised to other aspects of the individual's life. Intuitively it would seem conceivable that satisfaction with one aspects of one's life may affect another. Such an effect has consequences for overall life satisfaction. Generally, three theoretical perspectives have been offered to account for this relationship; spillover, compensation or segmentation. Spillover proposes a positive relationship suggesting, not surprisingly, that satisfaction with work will "spillover" to life satisfaction and vice versa. The compensation hypothesis suggests a negative relationships exists between the two constructs such that dissatisfaction derived from one sphere is compensated for by satisfaction derived from another sphere. The segmentation hypothesis proposes the absence of a relationship between the two constructs i.e. they are independent of each other. Rain et al. (1991) in their review of the literature note that few studies prior to 1980 had offered explanations as to *how* these hypotheses explained the relationship between job satisfaction and life satisfaction. Generally results prior to 1980 supported the spillover hypothesis (Rain et al., 1991). Since 1980, research has continued along a similar path as before. Rain et al. (1991) note a further two hypotheses proposed since 1980; conflict and instrumentality. Conflict suggests that the goal of satisfaction in one sphere is detrimental to the goal of satisfaction in another sphere i.e. both goals compete against each other. Instrumentality, suggests that satisfaction in one sphere is a means to an end in another sphere i.e. being successful and satisfied with one's job, provides the requisite tools (e.g. money) to live the life one wants to live. Rain et al. (1991) note there has been some support for these to views, however generally the support for the spillover hypothesis is extensive.

A meta-analysis of the empirical data for a relationship between job satisfaction and overall life satisfaction provides evidence for a positive relationship between the two (Tait, Padgett, & Baldwin, 1989). Rain et al. (1991) suggest that the continual testing of other hypotheses is probably redundant, but do caution against the consistent lack of a theoretical basis for the spillover explanation. It should also be noted that there has been greater attention paid to the causal direction between job satisfaction and life satisfaction variables and the evidence suggests a reciprocal relationship. Life satisfaction is just one indicator of mental health that has been related to job

satisfaction.

Although a principal focus of investigation on the work related psychosocial risk factors for physical and mental health has been on work stress i.e. job demands and job control and the person-environment fit approach, (see chapter one), clear correlational links between job dissatisfaction and job stress have been established (e.g. Agho et al., 1993; Blegen, 1993; Fried, 1991; Glisson & Durick, 1988; Packard, 1989), suggesting that investigating the contribution of job satisfaction to mental and physical health may be fruitful.

There are few recent studies that have directly investigated the effects of job satisfaction on mental health. Hesketh & Shouksmith (1986) found overall job satisfaction explained 8.2% unique variance in total mental health scores (MHI, Viet & Ware, 1983) and 13.6% total variance when controlling for job activities and non-job activities in 401 veterinarians. Bivariate analysis also showed a significant relationship between well-being (Mental Health Inventory, Viet & Ware, 1983) and job dissatisfaction ($r=-.43$, $p<.01$). Kirkcaldy and Cooper (1992) report a negative relationship between indices of mental health ($r=-.42$, $p<.001$,) and job satisfaction for 123 British managers. Edwards and van Harrison (1993) report a positive relationship between job dissatisfaction and depression ($r=.37$, $p<.01$) and anxiety ($r=.20$, $p<.01$, $N=318$).

Job satisfaction has also been shown to be related to objective indicators of physical health and longevity. A longitudinal study found the most significant predictor of longevity from a number of physical and attitudinal variables was work satisfaction - this predicted longevity better than either physical functioning or tobacco use (Palmore, 1969). House, McMichael, Wells, Kaplan and Landerman (1979) reported that elevated systolic blood pressure was related to job dissatisfaction. Matthews, Cottington, Talbott, Kuller and Siegel (1987) found job dissatisfaction to be a significant predictor of elevated diastolic blood pressure when controlling for age, alcohol consumption, smoking, body mass index, family and history of hypertension for 288 blue collar males. Results also showed that a combination of high job

satisfaction and positive work conditions may protect against high blood pressure in the sample men.

Other studies have shown links between subjective measures of physical health and job satisfaction. Herzberg, Mausner & Snyderman (1959) found that subjects reported physical symptoms such as headaches, loss of appetite, indigestion and nausea following dissatisfying job incidents. Burke (1969/1970) found significant correlations between job and/or non-job satisfaction and such subjectively reported physical symptoms as fatigue, shortness of breath, headache, sweating and ill health.

Further studies have investigated the link between antecedents of job dissatisfaction and physical health. Sales (1969) found a significant negative relationship between subject's enjoyment of a task and changes in their level of serum cholesterol. Jenkins (1971) in an extensive review of the medical psychology literature, found numerous studies which reported associations between coronary disease and job complaints such as boredom, feeling ill at ease and interpersonal conflict. Brooke & Price (1989) report a positive effect for job satisfaction on self reported health status ($r=0.14$, $p<.05$) in a sample of medical administrators ($N=425$). Barnett, Davidson and Marshall (1991) in a sample of 403 women found that satisfaction with salary was negatively related to physical health, using the Medical Symptom checklist, when controlling for age, race, socioeconomic status and income, job concerns and parental status. Amick and Celentano (1991) report a negative relationship between job satisfaction and self reported psychosomatic symptoms ($r=-.31$, $p<.0001$) in bivariate relationships. In regression analysis, job satisfaction was a significant predictor of psychosomatic symptoms after controlling for demographic and work related variables. Kirkcaldy and Cooper (1992) report negative relationships between indices of physical health ($r=-.37$, $p<.001$) and job dissatisfaction. Fox et al. (1993) found a significant negative correlation between self-report of illness and somatic complaints and job satisfaction ($r=-.35$, $p<.05$, $N=151$). Edwards and van Harrison (1993) report a positive relationship between job dissatisfaction and a self report measure of somatic complaints ($r=.17$, $p<.01$, $N=318$).

4.7 Summary

Chapter four examined the literature on job satisfaction. Research suggests that job satisfaction is related to how the organisation is structured. That is, highly centralised and formalised work environments tend to be related to lower job satisfaction. In addition, positive perceptions of the work environment (e.g. climate) are related to higher job satisfaction and there tends to be a reciprocal relationship between these two variables. There is evidence that job satisfaction differs over a number of sociodemographic variables suggesting that these variables should be included in research on job satisfaction as a precautionary measure. Job satisfaction has also been related to mental and physical health, suggesting it may act as a mediator between stress and strains.

The following chapter reviews models of organisational structure in the military. In particular it outlines the Moskos (1977) Institutional/Occupational model and associated research, its application to the New Zealand Army context, and its implications for individuals. Research on the psychosocial work environment of the military is also reviewed.

CHAPTER FIVE

The Military Environment

Contents

The previous chapters have examined the literature on work related stress, with particular emphasis on relationships between organisational structure, psychological and organisational climate, job satisfaction and mental and physical health. Chapter five reviews these relationships in the military setting. First, models of organisational structure in military organisations are investigated with particular reference to the New Zealand Army. Second, the effects of the work environment within the military and on the transition to civilian occupational environments is reviewed.

5.1 Military Models

Over the past 50 years the role of the military has changed as the relevance of an offensive military ethos has weakened, with consequences for the purpose and motivation for military service. The military environment has traditionally represented a relatively well-defined set of organisational and occupational conditions. The two models that have been predominant in the literature on military personnel and organisation can be described as traditional and modern. The traditional model relies on 'mechanistic' forms of social interaction and is contingent upon high complexity, formalisation, specialisation, and restricted communication (mainly downward). This model emphasises group cohesiveness, citizenship obligation and political socialisation. Segal and Segal (1983) suggest the traditional model arose from the analysis of military history prior to World War 1 and was validated in the establishment of the discipline of military sociology. The development of the modern or 'organic' model of military organisation, recognising the human relations approach to management and incorporating an individualistic utilitarian perspective, can be traced to the increasing involvement of industrial psychologists and economists in the military services during and post World War 1 (Sofer, 1972; Ambrose, 1972; Segal and Segal, 1983).

Although a true organic organisational structure is reflected in low levels of complexity, formalisation, specialisation and an open communication style, and would therefore appear at odds with traditional views of military organisation, there has been debate on whether the military organisation is moving towards a less institutionalised profile (Janowitz, 1960; Moskos, 1977; 1986). This development is analogous to patterns of change in modern social organisation. As Segal and Segal (1983) have

suggested, the theme of a "rationalised" society pervades not only the sociological theory of organisation but also the post World War II literature on military organisation. Rationalisation (or as Faris (1988) puts it, "bureaucratic rationalism") has consequences for the military on three different levels. First, at the social system level, where the model highlights the development of the concepts of new technology, including "urbanisation, secularisation, commercialisation, decline of informal customs, and the rise of legal systems" (Segal & Segal, 1983, pg.152). Second, at an organisational level, the model means a move from "military professionalism to professionals in the military" (Moskos & Wood, 1988), and from idealistic values to materialistic values (Faris, 1988). Finally, at the individual level it suggests that individuals will be acting increasingly out of self-interest.

The debate on the trend towards a less institutionalised military, tends to focus on the assumption that due to processes such as rationalisation, there has been a progressive organisational convergence between civilian and military structures.

Prior to World War II, there were obvious distinctions to be made between military and civilian organisations' manpower and employment which are less clear today. For instance, combat was predominantly undertaken by ground troops and there was little call for complex technology or technological knowledge. The military was almost entirely the preserve of young unmarried males. The size of the military was very changeable, with huge growth in manpower during times of war, and relatively rapid demobilisation in times of peace causing major contraction in manpower (Segal & Segal, 1983). With the emergence of nuclear technology, came the demand for highly skilled and qualified personnel, and in this respect the military had to compete with civilian organisations for human resources. With the advent of the cold war, the nature of the military's role changed from that of a combatant to that of a deterrent and peacekeeper (Moskos, 1975), requiring the military to develop a large, less elastic full-time workforce. As mentioned above, the trend toward rationalisation and increasingly limited expenditure meant a growing reliance on accountability and organisational-based management (Wood, 1988). In addition, the relative professional autonomy enjoyed by the military has been eroded with the expansion of civilian

control (Rolfe, 1993; Wood, 1988). These changes in the capacity and function of the military have seen what some describe as a structural and cultural convergence between civilian and military organisations (Janowitz, 1965; Moskos, 1977; 1986; Segal & Segal, 1983). The specific points of convergence are discussed below.

Based on the convergence assumption, the major model that has influenced social scientific research in the military is that of the "institutional" versus "occupational" framework for military organisation developed by Moskos (1977)[4]. As Moskos (1986) argues, in the recent past the military has moved from an institutional model to that of a model approaching an occupation.[5] The term institution refers to a distinctive cluster of characteristics. Moskos (1986) describes a number of dimensions which characterise an institution. First, individualism is outweighed by collective good. Second, individuals are often seen as having a vocation; they commonly see themselves as being separate from the rest of society, and are often viewed as such. Third, where the institution is viewed as requiring sacrifice and commitment from its members, society will generally view that institution with respect. Fourth, below market wages are often compensated for by other less tangible, psychological benefits, and by non-cash form e.g. housing, uniform, medical treatment etc. Finally, institutional members rarely organise themselves against the institution when grievances are felt. As Moskos (1988) argues, trust is placed in the ability of the institution to "take care of its own".

An occupation on the other hand, as described by Moskos (1986) is determined by market forces, that is, appropriately determined monetary reward for requisite skills, and allows for greater employee involvement in the wage and condition establishing process. Additionally, and possibly most significantly, the occupational model emphasises individualistic motivations rather than the good of the organisation.

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[4] The institutional/occupational model may be subsequently referred to as the I/O model or thesis.

[5] Although the development of the institutional/occupational concept is predominantly focused on the American experience, research has also been conducted in Australia, Canada, Germany, France, Great Britain, Greece, Italy, Netherlands and Spain (see below). The prevailing themes can arguably be applicable to the New Zealand situation given the commonality of societal structures, and a recent descriptive analysis of the New Zealand Defence Force (Bruhns, 1991).

Table 3
Military Social Organisation: Institutional versus Occupational

Variable	Institutional	Occupational
Legitimacy	Normative values	Marketplace economy
Societal regard	Esteem based on notions of service	Prestige based on level of compensation
Role commitments	Diffuse; generalist	Specific; specialist
Reference groups	"Vertical" within the armed forces	"Horizontal" with occupations outside the military
Recruitment appeals	Character qualities; life-style orientation	High recruit pay; technical training
Evaluation of performance	Holistic and qualitative	Segmented and quantitative
Basis of compensation	Rank and seniority; decompressed by rank	Skill level and manpower shortages: compressed by rank
Mode of compensation	Much in non-cash form or deferred	Salary and bonuses
Legal system	Military justice; broad purview over member	Civilian jurisprudence; limited purview over employee
Female roles	Limited employment; restricted career pattern	Wide employment; open career pattern
Spouse	Integral part of military community	Removed from military community
Residence	Work and residence adjacency; military housing; relocations	Work and residence separation; civilian housing permanence
Post-service status	Veterans' benefits and preferences	Same as non-server

From Moskos (1988, p.16)

Table 3 summarises the characteristics of both "institution" and "occupation".

Cotton (1981) concisely sums up Moskos's constructs -

> "to define military service as a liability to perform one's duty within any 24 hour period is to reflect an institutional definition of soldiering. On the other hand, to define military service as a job done within specified hours with a limited liability to perform role obligations is to reflect an occupational definition" (p.100).

The institutional model emphasises *referent* power, where leadership is value-oriented, caring and inspiring. This type of leadership is thought to promote group cohesion (Johns, Bickel, Blades, Creel, Gatling, Hinkle, Kindred & Stock, 1984). The occupational model on the other hand emphasises management, which is a more impersonal, less caring form of control that relies on the self interest of subordinates by using material sanctions to motivate. It could be argued that these two types of leadership are similar to transformational and transactional leadership respectively. Transformational leaders motivate their subordinates to perform beyond expectations. They endeavour to meet the needs of individuals while providing a vision of the group's goal. Transformational leadership is charismatic. Transactional leadership on the other hand emphasises goal attainment through social exchange. Leaders motivate their subordinates by appealing to material self-interest such that reward is contingent on performance. Deluga (1991) in a study of leadership behaviours in United States Navy officers found that transformational leaders were viewed more positively than transactional leaders by their subordinates (Deluga, 1991).

Johns et al. (1984) suggest that institutional leadership uses "moral commitment" to control group behaviour. Moral commitment relies on psychological and sociological sanctions and results from the inculcation of group norms and beliefs. On the other hand, calculative commitment is thought to be short-term, based on self-serving interests such as pay and benefits. Johns et al. (1984) suggest occupational leadership relies on calculative commitment to control its members. Consequently the institutional model implies a higher level of commitment expected from personnel than

the occupational model and more legitimate military control over a broad range of behaviour not directly related to work related tasks.

Investigation of the institutional/occupational framework in a number of countries supports this notion. Downes (1988) in her analysis of the British armed forces takes a macro approach to the study of the institutional and occupational trends within the armed forces. Downes concludes that within the paternalistic, institutional framework of the British armed forces, a number of occupational developments along the dimensions advanced by Moskos have developed, e.g. increased marriage rates and home ownership rates, increased independent spousal employment and comparative pay assessment. However she notes that these developments do not necessarily represent a trend towards occupationalism but rather areas within the military that have had to accommodate changes within society. This internal division is also apparent in the German (FDR[6]) armed forces, where Fleckenstein (1988) concludes that there are two opposing trends within the German military that separate the higher ranks from the lower; the career soldiers and higher ranks of non-commissioned officers tending to favour the institutional dimension within the military and the lower ranked NCOs and conscripts tending to favour the civilian or occupational dimensions. The French military tends to be less institutional than it used to be, but is still considered to be more institutional than occupational (Boene, 1988), although this conclusion is qualified as some variables are highly occupational compared to some very institutional variables (e.g. mode of compensation versus range of compensation). In addition, similar to Great Britain and the FDR, Boene notes differences between; services, personnel categories (officers, NCOs etc), and unit types. Jans (1988) found little support for differences in I/O modalities across professional categories for officers in the Australian military other than Army officers, however large discrepancies were found between officers and NCO's in both the Army and the Air Force, with NCO's having substantially lower institutional levels than officers. However, in the Greek military, although it is concluded that institutional features will be maintained, occupationalism is very apparent in the officer corps (Smokovitis,

[6] Note: The research was conducted before the reunification of Germany.

1988), and the trend in this direction is manifest in other areas particularly among new technical personnel. The Israeli Defence Force is also seen as gradually transforming from an institutional organisation to a more "pragmatic profession" (Gal, 1988). Even in the Swiss military, based on a universal draft system, occupational trends can be detected (Haltiner, 1988).

With regard to the New Zealand Defence Force (NZDF), it has not been a combatant for many years (Bruhns, 1991), and there are no immediate direct threats to its security (Ministry of Defence, 1991). As Bruhns (1991) notes, New Zealand Defence personnel can realistically expect to complete their service in the forces without experiencing combat (with the exception of those who may be involved in U.N. peacekeeping missions). As Rolfe (1993) concludes, the lack of perceivable threat or specific military tasks for the New Zealand Defence Force, means there is no identifiable external contingency by which the structure, strategy and objectives of Defence can be determined or evaluated. The reality for the New Zealand Defence Force, like the majority of western militaries, is that most personnel can expect to be trained for something that might not occur, with the primary strategic objective being one of deterrence. The change to deterrent has meant that militaries are not now based on the 'mobilisation model', (Segal & Segal, 1983) that was necessary in World War II, but on the need for more self-contained, professionally skilled groups.
In the NZDF this is embodied in the Ready Reaction Force, a large group of personnel maintained at a "high state of readiness" (Ministry of Defence, 1991).

It is a contention of the I/O thesis that this change in military mission between wartime and peacetime has hastened the occupational trend within militaries. Examining the New Zealand setting, it is apparent that there have been a number of historical trends in the NZDF since World War II that correspond to the I/O thesis. As early as 1958, the New Zealand Government was seeking to economise on military resources, both fiscal and human - "concentration of our military effort on the immediate availability of a thoroughly trained and fully equipped Regular Force will enable us to meet the requirements of modern warfare more speedily and effectively in the event of a sudden emergency" (Ministry of Defence, 1958, pg.3). In 1972, the

Ministry of Defence prioritised the redirection of funds towards providing "adequate conditions of service", emphasising the necessity for living and working accommodation to attract and retain personnel, however it was also expected that "the long-accepted principles of civil cooperation and community service" would also play a significant role in recruitment (Ministry of Defence, 1972).

The 1983 Defence Review highlights a number of areas where a trend towards occupationalism is evident (Ministry of Defence, 1983). Technology, it was noted, had reduced the value of rapid mobilisation of a large land based force comprised of poorly trained men as an effective defence mechanism. Since structural reorganisation in 1971, efforts had been made to develop the most economical and efficient management of Defence that provided for centralised control of expenditure, human resource management and logistic support, with the future possibility of a computer based system to monitor expenditure and control. It was also noted that with increasing technology, it was difficult to maintain territorial skill levels, and that special efforts would be needed to encourage civilian individuals with relevant professions, trades and skills to accept a non-regular force commitment. Work had also begun to improve accountability with the attribution of costs against programmes and activities to be modified, with the goal of targeting programmes more effectively and achieving savings where possible.

Special consideration was given to pay and conditions in the 1987 review (Ministry of Defence, 1987). It was noted that provision must be made for married quarters, schools, and hospitals in order to lessen the remoteness and isolation often felt by military personnel from society in general. Pay, allowances and terms of employment were to be given special attention, given the non-union involvement of service personnel. The importance of trained personnel as a military resource was highlighted with the acceptance of special conditions and allowances for particular occupational or operational circumstances and skill and working conditions. Problems were noted in recruiting highly specialised technical personnel and personnel for officer training. It was also noted that turnover in the Armed forces could be expected to increase as employment prospects in the community improved, and the importance of pay equity

between public and private sectors in attracting and retaining high calibre personnel was also mentioned. Financial incentives such as housing, housing loans, and superannuation are also discussed with regard to providing security for personnel.

In the 1991 Defence Review, highlighting the increasing rationalisation within the NZDF, are the reduced fiscal resources available - from 2.1% of gross domestic product in 1988/89 to 1.8% in 1990/91 and the aim to maintain a "credible minimum defence force" that is economically sustainable (Ministry of Defence, 1991). To a certain extent the trends towards occupational values in the NZDF are in conflict with each other. For instance, the rationalisation of resources (i.e. the drop in the Defence budget) provides limited scope for enhancing service pay and conditions without reductions in personnel.

Table 4 summarises some of the trends in the NZDF that confirm previous findings with respect to the I/O thesis. Bruhns (1991) concludes that although the services within the NZDF have had to adjust to societal changes in some of its more institutionalised areas e.g. economic restraints, it still retains an underlying institutional ethos. This duality can be seen in the desire to "maintain high standards of professionalism, dedication and loyalty" while reviewing conditions of service "to ensure the ability of the armed forces to recruit and retain quality personnel is maintained" (Ministry of Defence, 1987). Perhaps these variations in institutional/occupational modalities can best be summed by van der Meulen (1988) who concludes that the Dutch military is "very occupational on the surface" and "purely institutional deep down" (pg. 246).

Moskos's model has been criticised for its lack of conceptual clarity (Cotton, 1988; Janowitz, 1977), and as Cotton (1981) suggests, the military is destined to endure as a conventional organisation in society, notwithstanding any perceived shift from one model to another. As Moskos (1988) admits, it is doubtless too simplistic to dichotomise, or differentiate between two extreme styles of organisation, and probably more appropriate to regard the distinction between institution and occupation as being on a continuum, with variations not only between military services but internally as

Table 4
Institutional and Occupational characteristics of the New Zealand Defence Force

Institutional Factors	Occupational Factors
Legitimation of the organisation and its basis of power	Measurement of organisational members' worth by others (i.e. how civilians determine the success of individual military personnel in terms of their career).
Diversity of roles personnel are committed to	Reference group with whom personnel inside the organisation compare themselves to
Means of compensation reward	Inducements offered to personnel joining the organisation
Legal system affecting organisational members - dominance of rights of organisation over those of the individual	Evaluation of performance which involves recognition of skill, performance and or seniority
Public status of people who have completed their career with organisation	Factors determining compensation rates - skill based, individualistic, direct civilian comparison
	Employment rate of females and their role in organisation
	Role of personnels' spouse in organisational activities
	Proportion of personnel living in civilian
	Interconnectedness of military and civilian technologies
	Societal questioning of need for armed forces
	Imposition of business model (rationalisation)
	Change in emphasis to more contemporary leadership styles
	Increased use of external civilian consultants

From Bruhns (1991, pp.46-47).

well. In reality, as Cotton and Bruhns both suggest, the military encompasses elements of both models. Inevitably the military will have more institutional characteristics than the majority of civilian organisations and it is also undeniable that a number of these are going to be essential for the unique functioning of a military organisation (as outlined by Bruhns, 1991). It is also apparent that societal changes have introduced a shift towards an occupational/civilian style of organisation. As Moskos and Wood (1988) conclude modern military personnel are motivated by a number of both institutional and occupational factors, but the trend appears to be toward the occupational model.

It is important to understand that the general opinion underlying the investigation of the institutional/occupational model is that occupationalism *undermines* military effectiveness (organisational outcomes). Cotton (1988) suggests that the institutional model implies high operational commitment, cohesion and social legitimacy and consequently effectiveness is seen to be high in the institutional model. As Faris (1988) suggests "occupational attitudes are especially disquieting to the military because the rhetoric of self-interest conflicts so dramatically with the demands for self-sacrifice and suppression of self-interest required for effectiveness in combat" (p.62). Whether occupationalism decreases military effectiveness is debatable and would prove difficult to systematically investigate given the non-combatant nature of most western militaries, however what has not been fully addressed is the implications for the model on service personnel.

Given the evidence suggesting that the military contains both institutional and occupational segments (see above), it would seem appropriate to investigate whether these segments differ on outcomes other than those associated with military effectiveness. It is likely that the two extremes of the model produce different psychosocial work environments. Given the widely accepted belief that adverse psychosocial work characteristics have physiological and mental health consequences, it would seem relevant to investigate the psychosocial nature of institutional and occupational work environments, and the physical and mental health outcomes of those employed in such environments. To provide background to this investigation,

the following section examines general research into military work environments.

5.2 The Military Work Environment

To a certain extent the organisation of the military mirrors that of civilian organisations, as organisations are made up of people, and therefore the same questions emerge with regard to the antecedents and consequences of work environment perceptions, work related stress, and job satisfaction.

During life-stage development, individuals undergo many transitionary periods from one stage to another and these transitions often require an adjustment to differing demands and adaptational coping mechanisms. Sometimes the individuals resources for dealing with transitions may be overtaxed or inappropriate. Borus (1976) suggests that military service can be viewed as an assortment of often very stressful transitions involving such aspects as rank, role, postings, responsibilities and eventually the return to civilian life.

The military environment is unique, with employment within such an environment more than just occupational choice. Service in the military involves a very prescribed environment that influences the individual's lifestyle far beyond the boundaries of their work. As Bowen (1989) notes, there are few civilian organisations that expect or demand a similar devotion to duty or dedicated obligation from their employees. Even fewer civilian organisations would be in the position to offer the non-monetary benefits automatically provided by the military for employees and their families.

With the unique characteristics of the military, common sense suggests that a certain amount of adjustment is required for those first enlisting. Nelson (1976) notes that research has shown overall ability and educational level appear to favour adjustment to the military environment, however age at enlistment seems to function as a moderator of these two variables and adjustment. Arthur (1971) in a study of naval recruits found that expulsion or suspension from school was a good predictor of lack of adjustment to military life and was possibly an indication of an inability to adapt to the discipline and the formal constraints of the Navy. Moreover, a *lack* of prior

school disciplinary problems helped to modify the effects of low educational attainment and aptitude on military adjustment. For instance, individuals with low educational levels and poor general ability but with no prior disciplinary history, were more likely to adjust to the military environment than those individuals with higher educational attainment and ability who had had past disciplinary problems.

Research into career commitment offers further insight into adjustment to military environments (Tziner, 1983). McAllister & Smith (1989) found in the Australian armed forces, that for officer cadets in the three services, institutional reasons for joining the Army, such as serving one's country, were correlated with longer expected length of service than occupational reasons, such as financial reward. Jans (1989) found in a sample of the Australian Defence Force that officers' organisational commitment was high according to their identification with military values, their job involvement, their optimism regarding their career future, and their assessment of the effectiveness of their service. However, military values were a relatively minor influence on commitment to the military. Jans (1989) concluded that it was not enough for an officer to have the correct military ethos to have high organisational commitment, it was also important for career needs to be met. Jans also found that younger officers identified less with military values than older officers.

5.3 Organisational Structure in the Military

Turney and Cohen (1978) characterise the military organisation as an "explicit authoritarian, hierarchical structure" (p.732). They suggest a number of organisational characteristics that define the military. Symbols of authority are always visible, such as rank, and this is reinforced by verbal recognition. There are two chains of command, commissioned and non-commissioned officers, with differential levels of status. Further, work in the military is considered a 24 hour a day job, with no overtime, no shift allowances, no unions, rapid rotation and the prospect of being trained for an event which may never occur. Employees often live within the confines of a sometimes isolated military base and consequently are to some extent socially isolated from civilian life. Enlistment in the armed forces exposes the recruit to a

level of indoctrination not readily seen in civilian organisations. As Barber (1972) notes, this is a system that is as much about inculcating particular beliefs, values and attitudes as it is about training for the eventuality of warfare.

In most western democracies the armed forces find themselves in competition with employers in the civilian economy for new recruits (McAllister & Smith, 1989), and have been compelled to increasingly offer a variety of monetary and non-monetary incentives to entice recruits. As Moskos (1986) argues, the military is increasingly seen as providing an *occupational* environment which operates on market place values as compared to the traditional view of an *institutional* military which operates on values of loyalty, vocation, and the common good. Moskos's notion of a rationalised military structure has been discussed more fully above.

5.4 Psychological and Organisational Climate

There are few studies that have specifically targeted military environments with regard to climate. The development of the Psychological Climate (PC) questionnaire described earlier (chapter three) offers some research into military samples. Jones, James & Bruni (1975) looked at the moderating effects of job involvement on the relationship between leadership behaviour and employee confidence in leaders on a group of U.S. Army employees, using scales later developed for the PC questionnaire.

Confidence and trust in leaders was positively related to leader behaviours, such as support, goal emphasis, interaction and work facilitation. They also found that these relationships were moderated by job involvement such that correlations between confidence and trust and leader behaviours were greater for those with low job involvement. In the development of the PC questionnaire on Navy personnel, Jones et al. (1979) found that perceptions of job challenge, importance and variety were positively related to span of control, number of men supervised, the time spent in the Navy, hierarchical level, training completed, age and esteem, but negatively related to unskilled jobs. As the authors note, this pattern of correlations appears to reflect an increase in responsibility associated with promotion. Perceptions of a cooperative, friendly and warm workgroup were positively related to technology, span of control,

hierarchical level, training completed, assignment to high level technical jobs, age, education and esteem. This climate component was negatively related to the number of men in the division, number of ranks in the division, assignment to unskilled jobs and mechanical jobs, and prior discipline problems. These relationships tend to suggest that positive perceptions of inter-relations between workgroup members are more apparent as seniority increases. Perceptions of conflict and ambiguity were, not surprisingly, related to previous disciplinary problems. Professional and organisational esprit was positively related to time in the Navy, assignment to unskilled jobs, age and ego needs, but negatively related to high level technical jobs, age, education and house size (a measure of socioeconomic status), suggesting that identification and commitment with the Navy was more pronounced in the older, less educated and unskilled. These relationships, it should be noted, are for data aggregated to ship division level, so represent descriptions of the organisational climate of those divisions. Using clustering and discriminant function analysis, Jones et al. (1979) were able to group divisions (collapsed into functional types) based on climate profiles. They found that large spans of control, large division sizes, relatively routine technologies and personnel with lower average intelligence, education, training and tenure were associated with climates that were 'monotonous, cold and unsupportive' and 'unfriendly and uncooperative'. The divisions in these two clusters tended to also have poor performance ratings. Non-routine, complex technologies, flat configurations, low specialisation, small division sizes and higher average intelligence, education and training were associated with climates that described work environments as 'enriched and warm' and 'organisationally uninvolving'. Low span of control, and high average intelligence and training scores were associated with 'cooperative and friendly' climates, which also had above average performance ratings.

In a study of United States Army National Guard trainees, Dellva, Teas and McElroy (1985) found that relationship-oriented leadership style had a positive effect on subordinate satisfaction by reducing role ambiguity. Provision of feedback and participatory behaviour in general was also related to subordinate satisfaction, the first by reducing role conflict and the second by reducing role conflict and role ambiguity.

5.5 Job Satisfaction

Do military and civilian employees differ in the satisfaction they derive from their jobs? Fredland and Little (1983) suggest a number of reasons why military personnel might have lower job satisfaction than civilian individuals. First, many that enlist join the military straight from school and enlistment may mean their first separation from family, friends and a familiar environment. Often recruits are situated in isolated locations (e.g. Waiouru Military Camp). Second, the nature of military training means conditions are sometimes dangerous and unpleasant. Third, the job often involves long and irregular hours, and overtime and shift allowances do not exist. Fourth, pay is often lower than civilian jobs, although non-cash benefits are greater. Fifth, rotation (as a result of posting) every few years may dislocate people from familiar environments, necessitating the establishment of new social and work relationships. Finally, new recruits may not be fully aware of these conditions and procedures on entering the military, and once in the military, it is harder to get out or change jobs within service than in the civilian workforce. However, as Fredland and Little (1983) argue, for some recruits the military would offer opportunities for training and occupational advancement not readily available to them in the civilian workforce. In addition, for some the challenge of moving to new places every few years may be welcomed. Further, job security is high, the threat of unemployment is low and pay increases and promotions are regular. Barber (1972) also notes that the military offers a unique opportunity of moving swiftly up the career path. Further, he notes that lower-status individuals were more likely to become military careerists than those from more privileged backgrounds. Possibly because by comparing their chances in civilian life to the military environment, they see their career chances as relatively better in the military than those in civilian life. Therefore, it would not be unreasonable to expect a proportion of service personnel to have higher job satisfaction than civilians.

In a sample of 430 United States Navy personnel, Woodruff and Conway (1990) compared Quality of Life ratings to those of civilians. The Navy sample were significantly lower in their ratings of how they felt about their job, how they felt about others in their job, and how they felt about the work they did in their job, compared to civilians. In the Navy sample, work quality of life was significantly positively

related to perceived health and negatively related to reports of psychosomatic symptoms. Blair and Phillips (1983) found in a comparison of service personnel to civilians (ages 18 to 21), that service personnel were significantly lower on every facet of job satisfaction except for job security. They also found that military jobs were inherently less motivating than civilian jobs. Fredland and Little (1983) examined job satisfaction among male workers in the civilian labour force and among servicemen of the same age. In a sample of 736 servicemen and 1644 civilians (18 to 22 years old), they found higher levels of satisfaction in civilians. In a discriminant function analysis using global job satisfaction as the dependent variable, five of the 10 facets were shown to be important discriminators of degrees of global job satisfaction: chance to do best, experience valuable later, pleasant surroundings, good income, high job security. Surprisingly they found that time on the job, job experience and hours worked did not predict job satisfaction in regression analysis.

In a study of work related attitudes, Bowers (1976) compared 2,522 United States Navy personnel with 1,855 United States civilians. He found that both groups rated as the most preferred job feature, "opportunity to control personal life", and secondly, "good pay". In fact, the ratings of fourteen job preferences were correlated at .90 between the groups. Job features they rated lowest included "clean job", "no one to boss me" "free time" and surprisingly "opportunity to serve my country". One set of differences which was found was Navy men of 43 years and over (whether enlisted men or officers), had different profiles of job preference ranking than did other groups from both Navy and civilian samples. This is apparently attributed to their ranking the item "opportunity to control one's personal life" as being less valued than other groups, and items "opportunity to serve my country" and "challenging work" as being ranked higher than other groups. Satisfaction with the organisation and satisfaction with the job for Navy personnel were low (20th and 25th percentiles respectively, where 40 and 60 percentile marks were considered "normal"). Bowers (1976) found distinctly different job descriptors between the two samples. For instance, more civilians felt negatively about their chance of steady employment (job security) than did Navy personnel. More Navy men felt their jobs did not challenge their abilities and skills, although their jobs required them to learn more skills, and they did not

view their jobs as prestigious. More Navy men viewed their pay in negative terms than civilians, although they viewed their fringe benefits in more favourable terms than civilians. Navy personnel thought their jobs did not allow them to control their personal lives or to stay in one place and, compared to civilians, felt enmeshed in a large bureaucracy.

5.6 The Military Work Environment and Health

The majority of research into the mental and physical health of military personnel has focused on exposure to combat. The deleterious effects of combat exposure are well documented, particularly that related to service in the Vietnam war (e.g. Eisen, Goldberg, True & Henderson, 1991; Long, Chamberlain & Vincent, 1992; Reaves, Callen & Maxwell, 1993; Vincent, Chamberlain & Long, 1994). The health status of non-combat military personnel is less widely published. There are studies that compare the health status of Vietnam veterans to Vietnam-era veterans and Vietnam era non-veterans, however these provide little insight into the health status of current non-combatant military personnel in relation to civilians (e.g. Anderson & Mitchell, 1992; Salmond, Geddes & Salmond, 1977; Spiro, Schnurr & Aldwin, 1994; Waigandt, Evans & Davis, 1986).

Some studies have compared current health behaviours of military and non-military groups. Mazzuchi (1985) found the prevalence of alcohol use was higher for military than civilian men. Bray, Marsden & Petersen (1991) found that U.S. military personnel were significantly more likely to drink and to drink heavily than civilians. In addition, military personnel were more likely to be smokers and to be heavy smokers than civilians. Military personnel (both men and women) were approximately twice as likely as civilians to be heavy drinkers. These findings emerged when controlling for sociodemographic factors associated with substance abuse. The use of drugs seems to be less prevalent in military groups compared to civilian groups (Mazzuchi, 1985; Bray et al., 1991) and is probably due to the zero tolerance of illegal drug use in military organisations. Other studies have looked at the introduction of health promotion programmes in the military to combat substance abuse (Lerman, Ashkenazi, Vardi & Wiener, 1993) or the development and evaluation of human

service programmes for the military (Bowen & Scheirer, 1986).

Given the free and easy access to medical and dental services in most militaries, the attrition of the chronically ill and the level of fitness required to perform their duties, it could be argued that military personnel would experience better health than civilians. Studies of US Navy personnel show a relationship between positive health/fitness status and quality of life (Woodruff & Conwat, 1990; Woodruff & Conway, 1992). However, Woodruff & Conway's (1990) study found no significant differences in self ratings of health and physical condition between Navy personnel and a community sample. It may be that the higher incidence of legal substance abuse in the military may nullify the health benefits of military service.

5.7 Military-Civilian Transition

It has in the past been an often expressed view that military service is both beneficial to the individual and consequently society as a whole (Gade, Lakhani & Kimmel, 1991). A feature of military life is the relatively low retirement ages of career military personnel and the military pension schemes designed to facilitate early retirement available in countries like New Zealand, Australia and Great Britain. These pensions are, as Jans (1989) notes, a strong inducement to complete the twenty years of service even when commitment to the military may have declined. Rawlinson (1978) called this the 'golden handcuff' effect. He found technicians in the Australian Air Force, who were within a few years of completing their 20 years service, were reluctant to leave even when they derived little satisfaction from their job, because of the added incentive of full pension benefits for the transition to civilian life. Most research into retirement focuses on 'normal' retirement, and as Wolpert (1991) notes, there is little research on the retirement processes and subsequent transition to civilian life of the military employee. If employment in the military can be seen as a series of transitions, perhaps the transition requiring the greatest strain on the individual is that of the transition to civilian life, particularly after any lengthy time in the military (Borus, 1976).

One way military service might help the individual in civilian careers, is that military service increases the individuals educational level and prepares him/her for a higher occupational level on leaving the military. A second way is that service in the military improves self confidence and self esteem, provides a record of an individuals ability to work within a disciplined organisation thereby equipping the individual in less obvious ways for employment. The most obvious way to enhance civilian transition is if military personnel are provided with a skill which is easily transferable to civilian life (e.g. chef) (Barber, 1972). As Mangum and Ball (1987), note when recruits enter the military, it is generally assumed that it is for a finite time, thus the ability to transfer skills learned in the military to civilian employment is of future economic importance.

Gade et al. (1991) note that military recruitment advertising often depicts military experience as providing a positive environment that fosters personal growth and provides job training that will benefit the recruit in civilian life. To a certain extent these assurances are met. Research by Stouffer and colleagues on veterans of the second World War showed personnel believed that their military experience had changed them for the better with regard to personal attributes such as self-reliance, interpersonal skills and intellectual horizons, however they were critical of the Army in that they saw participation as frustrating their own personal goals and resented the constraints and deprivations of service (Stouffer, 1949; Stouffer, Lumsdaine, Lumsdaine, Williams, Smith, Janis, Star & Cottrell, 1949). This finding is also reported by Elder (1987), where World War II veterans reported at mid-life that they believed military service had benefited them on an interpersonal level but had not prepared them for civilian employment. Gade (1991) in a review of the literature notes that studies of World War II veterans have found that military service affected marriage, divorce, lifetime earnings and emotional health. Similar findings of enhanced personal and social development and poor employment outcomes associated with civilian transition have been reported for Vietnam war veterans (Card, 1983). Some research has shown that for women and some ethnic groups, military service enhances their civilian job opportunities (Segal, Bachman & Dowdell, 1978; Browning, Lopreato & Poston, 1973). Phillips, Andrisani, Daymont & Gilroy (1992)

report that the literature generally shows that World War II veterans experienced a positive advantage compared to civilian counterparts in post-service earnings. Korean veterans also experienced a positive advantage but smaller, however Vietnam veterans experienced a negative disadvantage. The magnitude of the advantage was bigger for those with less education, and minorities. It should be noted that this was a sample of non all-volunteer subjects.

As Gade et al. (1991) note there have been few studies that examine psychosocial factors associated with military service on all-volunteer forces, other than the economic implications. Addressing this problem, Gade et al. (1991) examined a sample of all-volunteer era veterans in the U.S. Army (N=2,566). With regard to the differential experiences of minority groups reported elsewhere (see above), Gade et al. (1991) found blacks and hispanics reported significantly more personal growth benefits from military service than whites. Further, women differed from men on a number of personal growth variables in that they reported more benefits in establishing independence, openness to new ideas and ability to make friends. Although minorities reported more benefits from military service, blacks and hispanics reported finding it harder to find a job on leaving the Army, were less likely to be in full-time employment, had lower incomes and a lower standard of living than they did in the Army. Blacks had lower levels of job satisfaction than whites and women reported much lower incomes than men. Gade et al. (1991) also found that veterans of lower mental ability saw themselves as having benefited more from their Army service than did those of higher ability, however those with higher mental ability found it easier to find civilian employment, had higher incomes, and were involved in more post-discharge education than those with lower mental ability. Bartling and Eisenman (1992) found that black and hispanic groups viewed military service more favourably than whites or asian-americans. Males had a more positive view of the military service, however all groups viewed civilian jobs as more enjoyable than military jobs. Phillips et al. (1992) in a sample from the all volunteer era (N=11,180) found their three ethnic groups, non-hispanic whites, blacks and hispanics, earned more while in the military than their non-serving counterparts. When service was completed incomes dropped for all three groups. However for non-hispanic whites after short-term

employment problems, their incomes increased faster than their non-serving counterparts. For blacks and hispanics, there was no significant difference between veterans and non-veterans in earnings. The research appears to suggest that perceptions by certain groups that their Army service was beneficial, were not reflected in objective measures.

Mangum and Ball (1987) note that previous research has suggested that there are civilian counterparts to approximately 80% of military occupational categories, and it has also been noted that the opportunity for training in the military is an important motivator (Fredland & Little, 1983). Mangum and Ball (1987) found in a sample of 874 individuals who had experienced military training, skill transfer was established in 47.1% of the individuals and was greater for females, 49.8% compared with 45.8% among males. Regression analysis on the probability of skill transfer showed that males in the service/support, craft or electrical/mechanical equipment repair occupations in the military were significantly more likely to transfer their skills to civilian employment than were males trained in administrative occupations. For females the trend was reversed. For both sexes, length of military training and years of education were not significant predictors of skill transfer. Gade et al. (1991) found that those who increased their formal education while in the service reported a greater likelihood of being employed full time, higher individual and family incomes and a much greater likelihood of post-service education. The type of military job engaged in did not impact on socioeconomic outcomes, though those in non-combatant jobs were more satisfied with civilian life than they had been in the Army.

5.8 Summary

Chapter five reviewed models of military organisation and in particular the Institutional/Occupation model proposed by Moskos (1977). Evidence for the emergence of an occupational structure for the military has been found in a number of countries. The evidence also suggests that this trend is apparent in the New Zealand Defence Force. This research suggests that transition from an institutional to an occupational structure is graduated such that some areas of the military remain largely institutional while others shift towards the occupational model. A review of

the military work environment literature suggests that a number of relationships that exist in civilian samples are also apparent in the military, however, research consistently finds that military personnel have lower job satisfaction than civilians. Research into the post-service adjustment of military personnel shows that despite the general perception that military experience has beneficial effects for the return of the individual to civilian life, there is little empirical evidence to support this notion. Generally, only those individuals who pursued further education and training while in the military adjusted better to civilian life. Gade (1991) argues that there is a lack of adequate research models in military psychology, with most engaged in prediction, for instance, predicting enlistment from a number of independent variables thought to be related to the decision to reenlist. This lack of an adequate research model, Gade (1991) argues, is one of the reasons that there are so few articles published on military personnel research other than selection processes, and that current military research does not fit in with mainstream contemporary industrial/organisational psychology. In this respect, he suggests the need for models of military personnel research that attempt to address, not only organisational outcome and economic effects, but the costs and benefits of military experience on various aspects of peoples lives, such as the role of the military work environment on mental and physical health outcomes.

The aim of the present research is to take the knowledge gained from the general literature on the work place environment and apply it to a military environment, within the context of structural transition within the military, and transition from military to civilian environments.

CHAPTER SIX

Study One: Current Army Personnel

Contents

6.1 Introduction

This section provides a brief overview of study one, summarising relevant information from the literature review and research objectives. In chapter five, the Institutional/Occupational model of military organisation was outlined. This model suggests that military organisations in response to changes in society are changing from a mechanistic form of structure (institutional) to an organic form of structure (occupational) i.e. the military is converging with the civilian (Moskos, 1977). An institutional structure is characterised by complexity, formalisation, and restricted, downward communication. In this structure, individualism is outweighed by the common good. Individuals have a vocation and accept below market wages which are compensated for by other non-cash benefits (Moskos, 1986). The occupational structure is less formalised and complex and has an open management communication style resembling civilian organisations. It is market driven, there is greater involvement in decision making processes by individuals, and importantly this structure emphasises individualistic motivations rather than the common good (see Table 3, pg. 83). A number of studies (see chapter five), provide some support for the an occupational trend in a wide array of military settings.

The underlying theme of the debate on this model is that a move towards a more occupational structure undermines military effectiveness (Cotton, 1988), and the focus has been on organisational outcomes rather than individual outcomes. The present study hopes to address the implications this model has for the ordinary soldier in the New Zealand Army[7]. Furthermore, the present research attempts to investigate the psychosocial nature of work environments within the Army, the responses of individuals to these environments and the mental and physical health outcomes of those employed in such environments. Work related dimensions to be studied include organisational structure, climate and job satisfaction.

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[7] Although numbers in the New Zealand Army have decreased over the past few years (from 5,862 in 1989 to 4,960 in 1992), the Army still represents a large population with shared experience of military service and is a prime instrument of socialisation. Because length of service is rarely more than 20 years and personnel are rotated every few years, there is a constant turnover of personnel however the organisation itself remains a fairly stable entity.

The internal structure of an organisation shapes to some extent the behaviour and attitudes of organisational members (Berger & Cummings, 1979). Two structural components that have a direct impact on the nature of work are formalisation and centralisation. Formalisation is the extent to which rules, procedures and standards are enforced. In a highly formalised workplace the individual will have little control over how they perform their job. Centralisation refers to the distribution of decision making processes within an organisation. A highly centralised organisation will have decision making concentrated at one point, whereas a decentralised organisation will have diffuse or many decision making practices. Generally, when formalisation and centralisation are high, job satisfaction is low (see chapter four).

Another work dimension that impacts on individuals in the work place is climate. Climate is a reflection of organisational attributes as they are perceived by the employee. A distinction is made between *organisational* and *psychological* climate (James & Jones, 1974). This distinction is essentially a difference between levels of analysis. Organisational climate refers to shared perceptions of the work place by a group of individuals at some organisational level, that is, individual perceptions are aggregated to represent averaged perceptions across occupational settings. Psychological climate places the emphasis at the individual level and represents individual perceptions of the environment. There is considerable evidence to suggest that both organisational and psychological climate are related to job satisfaction (chapter four).

To understand how these work dimensions relate to mental and physical health a useful framework is provided by the work related stress literature. A general model of work related stress and its possible pathogenic influences are shown on page 3. This shows that possible sources of 'stressors' such as organisational structure, psychological and organisational climate, impact on job satisfaction and through job satisfaction elevate 'strain' symptoms resulting in disease consequences. An additional factor not explicitly stated in this model is the influence of sociodemographic variables on both work dimensions and health outcomes. Sociodemographic variables such as age, sex, ethnicity and income have been associated with a number of work related

variables and with job satisfaction in particular (e.g. Brush et al., 1987; Payne, 1988; Sutherland & Cooper, 1988). There is also considerable evidence for differentiated mental and physical health outcomes based on demographic profiles (Arvanis, 1983; Cleary & Mechanic, 1983; Dooley & Catalano, 1980; Dohrenwend & Dohrenwend, 1974; Jenkins, 1991; Matthews et al., 1987; Rose & Marmot, 1981; Rosefield, 1980; Verbrugge, 1985). Matthews (1989) argues that sociodemographic variables may be important attributes of individuals and/or groups that could act as *markers* for differing psychobiological processes that operate across subgroups and a number of sociodemographics have been included in the present study.

In summary, the main objective of the present research is to investigate the relationships between individuals in the Army, their perceptions of the Army's organisational structure and work attributes (climate), and the effects of these perceptions on job satisfaction and mental and physical health outcomes. The research is undertaken within the context of the existence of institutional and occupational modalities in the Army which it is assumed will have different organisational structures. These structures in turn are assumed to contribute to distinct organisational climates with differential consequences for job satisfaction and subsequent mental and physical health indicators.

The following section outlines specific hypotheses and research goals.

6.2 Hypotheses

This section backgrounds the rationale for hypotheses and analyses. First, the procedure for determining I/O categories is outlined and expected findings for these categories with regard to organisational structure and social support are discussed. Second, the generation of particular climates from I/O categories is addressed. Third, specific relationships between independent variables (personal characteristics, structure, and climate) and outcome variables (job satisfaction, psychological well-being and self rated health) are predicted. Finally, a summary of hypotheses and research goals is provided.

6.2.1 The Institutional-Occupational Model of Military Organisation

As noted earlier, a central theme of the I/O model is that an occupational framework undermines organisational outcomes i.e. military effectiveness, but individual outcomes are rarely discussed. If, as previously suggested, there is an occupational trend in the military, what are the psychosocial effects on the individual?

Bruhns (1991) suggests that there are a number of emerging trends towards an occupational model in the NZDF but that the underlying infrastructure remains predominantly institutional. However, in reality, military organisations probably lie somewhere along a continuum between institutional and occupational frameworks (Moskos, 1988). The I/O model attempts to catalogue the overall long-term organisational trends in the military. What is relevant in the context of the present study is the suggestion that variations on this continuum may exist within a particular military organisation at any one time (Cotton, 1981; Moskos, 1986; 1988).

Previous research (chapter five) tends to favour graduated change from institutional to occupational frameworks within the military rather than abrupt transformation from one model to another, (Downes, 1988; Fleckenstein; 1988), such that some areas may remain largely institutional in nature where others may necessitate a shift towards an occupational mould. For instance, Boene (1988) notes I/O differences

between services (Army and Air Force) in the French military. The significance of this I/O distinction is that different climates will be generated depending on the I/O modality of a particular grouping, with obvious implications for psychosocial outcomes dependent on group membership.

The difficultly in addressing the question of differing I/O modalities within the New Zealand Army, or within any setting, is the criteria by which groups are defined along the I/O continuum. Differences between the two military models are provided by Moskos (1986) and Bruhns (1991), and it has been argued that I/O modalities may vary along a number of demographic and occupational internal distinctions ("markers"), such as; age, gender, marital status, rank, and time spent in the miliary (e.g. Moskos, 1986). However, there is limited evidence for an appropriately *objective* method of determining internal differences in modalities. Segal (1986) argues for the use of multiple measures in determining institutional/occupational configurations such as survey data for measuring individual perceptions of military organisation; ethnographic studies to account for the communal nature of the military; and organisational data from the military's own records e.g. pay rates, ratios of married personnel etc.

In the present study, we attempted to distinguish between those segments of the New Zealand Army that could be categorised as more institutional in nature from those that could be categorised as more occupational, based on organisational data from the Army, which we will call I/O "markers". These distinctions were determined on the following broad basis:

(1) Roles: Specificity versus generalisation. For instance, an argument can be made given the Moskos model that elements within a defence force (e.g. Corps) that require highly technical or specialised skills will be more occupational than elements that involve general, routine tasks. Moskos (1977) has argued that some elements of the military will remain institutional, such as combat groups, while others would be more occupationalised, such as administrative, and technical groups. Smokovitis

(1988) found trends towards occupationalism in the Greek military force particularly noticeable in areas with relatively new technically skilled personnel.

(2) Precedence: Those sections with a long tradition within a military organisation would be expected to be more institutional than those that are recent newcomers. As noted by some investigators (Bruhns, 1991; Moskos & Wood, 1988; Segal, 1986), the organisational culture of a military organisation is different from civilian organisations. Tradition and history play an important part in the enculturisation of members. Segments of defence forces that have a long history of military courtesies, (precedence, protocols, ceremonies and symbolisms), will be more resistant to change than those segments with relatively fewer accoutrements of military tradition.

Applying firstly the role distinction, individuals were grouped, by an expert panel of Army advisors, according to three broad but distinct roles in the Army; Combat roles (N=387), Combat Support roles (N=124), and Service Support (N=59) roles. These groups were coded 1 to 3 respectively for analyses. Table 5 shows the structure of the New Zealand Army across these broad groupings as defined by a number of I/O "markers". It can be seen that the average age of personnel differs across these groupings, as does marital status, distribution of women and education level requirements. As discussed earlier, the extreme of the institutional model has been traditionally associated with a force consisting of young unmarried males, with generally non-specialist and non-technical functions. The extreme of the occupational model on the other hand, is associated with more educated personnel (accounting for increased average age), with higher rates of marriage and greater composition of women, reflecting a more civilian organisation. These objective criteria suggest that the combat group appear to be more institutional in nature, the service support group, more occupational in nature, and the combat support group somewhere between these two on the I/O continuum.

Table 5
Mean Age, Marital Status, % Women Employed and Min/Max Educational Requirements for Corps Groupings for total New Zealand Army.

	Age (Mean)	Marital Status*	% Women Employed	Educational Level Requirements for Trades within Corps
Combat NZCOC (1) RNZA (2) RNZAC (3) RNZE (4) RNZIR (6) NZSAS (7)	26.11	43%	Approx. 1%	Min. 3 yrs secondary school Max. School certificate subjects
Combat Support RNZSIGs (5) NZAAC (8) NZIC (9) RNZCT (10) RNZAOC (12)	28.54	53%	Approx. 20%	Min. 3 yrs secondary school Max. Sixth Form certificate subjects
Service Support RNZAMC (11) RNZEME (13) RNZDC (14) RNZChD (15) NZAPC (16) NZALS (17) RNZMP (18) RNZAEC (19) NZAPTC (20) RNZNC (21)	31.62	58%	Approx. 14%	Min. School certificate subjects Max. 4 years secondary school

* % married or defacto

NZCOC - New Zealand Corps of Officer Cadets; RNZA - Royal Regiment of New Zealand Artillery; RNZAC - Royal New Zealand Armoured Corps; RNZE - The Corps of Royal New Zealand Engineers; RNZIR - Royal New Zealand Infantry Regiment; NZSAS - The New Zealand Special Air Service; RNZSIGs - Royal New Zealand Corps of Signals; NZAAC - New Zealand Army Air Corps; NZIC - New Zealand Intelligence Corps; RNZCT - Royal New Zealand Corps of Transport; RNZAOC - Royal New Zealand Army Ordnance Corps; RNZAMC - Royal New Zealand Army Medical Corps; RNZEME - The Corps of Royal New Zealand Electrical and Mechnical Engineers; RNZDC - Royal New Zealand Dental Corps; RNZChD - Royal New Zealand Chaplains Department; NZAPC - New Zealand Army Pay Corps; NZALS - New Zealand Army Legal Service; RNZMP - Royal New Zealand Military Police; RNZAEC - Royal New Zealand Army Education Corps; NZAPTC - New Zealand Army Physical Training Corps; RNZNC - Royal New Zealand Nursing Corps.

The second basis for distinguishing between groups is precedence. The Corps have an order of precedence based on their history within the New Zealand Army. Table 5 shows the three groupings correspond well to the NZA order of precedence for Corps (shown in brackets).

Segal (1986) argues that indirect methods of inquiry may provide information that reflect components of the I/O thesis. In this regard, a second evaluation of I/O modalities can be attempted by measuring formalisation and centralisation. It can be argued that the institutional model represents a "mechanistic" type of organisation and the occupational model represents an "organic" type of organisation (see chapter five). A mechanistic model is generally associated with high formalisation, high centralisation and job standardisation whereas the organic model is associated with less formalisation, decentralisation and less job standardisation (Robbins, 1983)[8]. In addition, Pugh, Hickson & Hinnings (1969) has reported that public sector organisations, such as the military are substantially more centralised with regard to authority hierarchies than private organisations. Therefore, it is expected that the combat group will be high in both formalisation and centralisation, the service support group low on both these variables, and the combat support group to be somewhere in between these two extremes.

Further, as Segal (1986) notes, the institutional military is more socially prescriptive than the occupational military in that the lives of service personnel are inextricably bound with the day to day running of the military organisation. Previous research has shown that career personnel have fewer civilian friends than non-career personnel, e.g. those who viewed the Army as just another job were more likely to have friends outside of the military organisation than those who viewed the Army as a career (Blair, 1980). Consequently the three groups will vary in the proportion of civilian versus military social contacts with the combat group having the lowest proportion of civilian social contacts compared to military social contacts.

[8] Chapter two discusses the relationship between formalisation and centralisation more fully for non-military organisations.

6.2.2 Organisational Climate

Given the expected support for the categorising of personnel into three groups along the I/O continuum, and based on the literature discussed in chapters 3 and 4, it is proposed that different climates will be generated within these groupings. In general the institutional group (Combat) will be characterised by a climate reflecting low levels of role conflict and pressure, low levels of job challenge and autonomy, high levels of leader support and workgroup esprit de corps. Alternatively the Occupational group (Support Services) will be characterised by climates reflecting the opposite or different perceptions. A research goal was to assess the relative effects of membership in these I/O groups on outcome variables (job satisfaction, psychological well-being, and self rated health) at the organisational level (group means).

6.2.3 Factors Contributing to Job Satisfaction, Psychological Well-being and Self Rated Health

The following hypotheses with regards to the relationships between study variables for individual data were generated prior to data analysis.

Job Satisfaction

Personal Characteristics

Previous research has generally found that age, tenure and occupational level are positively related to job satisfaction (chapter three). It is hypothesised that these three variables will be positively associated with job satisfaction, however, as in the Bedeian et al. (1993) study, tenure will be the strongest predictor of job satisfaction when controlling for the other two variables.

No predictions were made with regards to the associations between gender, ethnicity, income or education and job satisfaction. First, the number of females in the sample is too small for comparisons. Second, as noted on page 72, studies examining the relationship between ethnicity and job satisfaction have, for the most part, been undertaken in the United States where samples generally include hispanics, blacks and non-hispanic white Americans. These groups were not seen

as comparable to the unique ethnic/cultural make up of the New Zealand Army. Third, the range of income and educational levels are relatively narrow in the Army compared to civilians (Statistics New Zealand, 1994). Anastasi (1988) notes, restrictions in the range of scores my underestimate relationships between two variables, and as previous findings have been conflicting with regards to income, education and job satisfaction, it was decided that these would be exploratory analyses only.

Negative affect is predicted to be negatively related to job satisfaction in bivariate analyses, however this effect is expected to be largely mediated by other personal characteristics, organisational structure and climate in multivariate analyses as found by Agho et al. (1993).

Structural Variables

Previous research tends to support the notion that highly formalised and centralised structures are related to lower levels of job satisfaction (chapter four). It was hypothesised in the present study that those who perceived the Army to be formalised and centralised would report lower levels of satisfaction.

A research goal was to assesses how much perceptions of formalisation and centralisation added to the explanation of differences in job satisfaction over and above those explained by personal characteristics.

Climate Variables

In the present research, work attributes were measured by assessing individuals' perceptions of their work environment i.e. psychological climate. Considerable research has examined the relationships between job attributes and job satisfaction (chapter four), and given the findings of this research it was proposed that job satisfaction would be higher for individuals who perceived their work environment as generally positive. For instance, the more jobs and roles are viewed as ambiguous, pressured, unappreciated and high in conflict the higher levels of job dissatisfaction. Similarly, the more jobs are perceived as being challenging,

important and autonomous the higher levels of satisfaction reported. In addition, the more supervisors and leaders are viewed as being skilled, trustworthy and supportive the higher the levels of job satisfaction. Finally, the more co-workers and relationships with co-workers and the organisation are viewed in a positive light the higher the levels of satisfaction with work.

A research goal was to assesses how much perceptions of psychological climate added to the explanation of differences in job satisfaction over and above those explained by personal characteristics and organisational structure, as previous research has found that the influences of job attributes and workgroup structure on job satisfaction are largely mediated by their direct influence on job perceptions (James & Tetrick, 1986).

Psychological Well-being and Self Rated Health

Chapter four discussed the consequences of job satisfaction on mental and physical health outcomes. Further analyses are undertaken to assess the effects of job satisfaction on psychological well-being and self rated health when controlling for personal characteristics, organisational structure and psychological climate. It was predicted, in line with the spillover hypothesis (pg. 75), that job satisfaction would be positively related to both psychological well-being and self rated health.

A further research goal was to investigate the relative contribution of personal characteristics, organisational structure and climate to the variance in scores on these two outcome variables.

6.2.4 Summary of Hypotheses

The Institutional-Occupational Model of Military Organisation

(1) The combat group will be higher on both formalisation and centralisation than the combat support and service support groups, and the combat support group will be higher on both these variables than the service support group.

(2) The combat group will have the lowest percentage of civilian social contacts.

(3) The institutional group (Combat) will be characterised by a climate

reflecting low levels of role conflict and pressure, low levels of job challenge and autonomy, and high levels of leader support and workgroup esprit de corps. Alternatively the Occupational group (Support Services) will be characterised by climates reflecting the opposite perceptions.

Factors contributing to job satisfaction, psychological well-being and self rated health

(4) Age, rank and tenure will be positively correlated with job satisfaction, although tenure will be the strongest predictor.

(5) Negative affect will be negatively related to job satisfaction and this effect will be mediated by organisational structure and climate.

(6) Those who perceive the Army to be formalised and centralised will report lower levels of satisfaction.

(7) Job satisfaction will be higher for individuals who perceive their work environment (psychological climate) as positive.

(8) Job satisfaction will be positively related to psychological well-being and self rated health.

A research goal is to assess how much perceptions of organisational structure and psychological climate add individually and additively to the explanation of job satisfaction over and above those explained by personal characteristics. In addition, the relative contribution of personal characteristics, organisational structure and climate to the variance in scores on psychological well-being and self rated health will be assessed.

A further research goal is to assess the relative effects of membership in I/O groups on job satisfaction, (and subsequent psychological well-being, and self rated health) at the organisational level (group means).

6.3 Method

6.3.1 Design

Data was collected by a cross-sectional survey method. Survey materials were sourced from a number of areas, including previous organisational, occupational and health research literature.

6.3.2 Subjects

Subjects were obtained with the consent of the New Zealand Defence Force, who arranged access for the researchers to three New Zealand Army camps (Waiouru, Linton and Trentham). All the major units were invited to participate and commanding officers released six hundred and thirty personnel. Of these three declined participation giving a response rate of 99.5%. Thirty four cases were excluded as these individuals were enlisted in the Territorial Force and not the regular Army. Seventeen cases were deleted from analyses due to extensive missing data. This resulted in a pool of subjects of 576. A sample description is provided in the Results section.

6.3.3 Procedure

Camp Commanders released a cross section of Army personnel within their camps to attend briefing and survey sessions. At each briefing session the researchers first provided background on the overall research programme and outlined the purpose of the present research project. Second, issues of informed consent and confidentiality were explained. Third, in the survey session, for those personnel who agreed to participate, instructions were given on the procedure for completing the questionnaire. The time taken to complete the questionnaire ranged from 30 to 60 minutes. Questionnaires were administered at the camps between 7 December 1992 and 22 February 1993. Ethical approval for the research was given by the Massey University Human Ethics Committee.

6.3.4 Measures

Biographical Information: Information was sought on participants' age, gender, marital status, ethnicity, education, and income. Questions were modelled on the 1991

New Zealand Census of Population and Dwellings (Department of Statistics, 1993). Participants were asked to provide their total length of service in the Regular Army, their rank, trade, corps, unit, current and previous postings, and the length of time spent in their current unit.

Social Support: Social support was assessed using the brief form of the Social Support Questionnaire (SSQ) (Sarason, Sarason, Shearin & Pierce, 1987). This instrument, is a shortened version of the original SSQ (Sarason, Levine, Basham & Sarason, 1983) and provides scores on both network size and perceived social support. The measure is comprised of the best 6 items from the original scale. Each item requires a two part response. First, respondents list the people they count on for support in a particular circumstance, and secondly, they rate their level of satisfaction with the support provided. In addition, for the purposes of the present study, respondents were asked to indicate whether individuals offering support were military or civilian connections. Two scores result from the administration of this questionnaire; (N) is the number of persons listed for each item which can then be summed and divided by the number of items to obtain a mean N score (N can be analysed further to obtain the ratio of civilian to military connections); and (S) is the satisfaction score which ranges from 1 (very satisfied) to 6 (very dissatisfied) for each item, which can also be summed and divided by the number of items to produce a mean S score. Siegert, Patten and Walkey (1987) report coefficient alphas for the N and S subscales ranging from .90 to .93 for a student sample.

Coping: The ways in which people cope with stress was assessed with the COPE inventory (Carver, Scheier & Weintraub, 1989). This is a self-report inventory consisting of 15 scales (of 4 items each) asking respondents to indicate how they usually act in a stressful situation. Items are rated on a 4-point response scale ranging from "I usually don't do this at all" to "I usually do this a lot". Carver et al. (1989) report alpha reliability coefficients for each scale ranging from .45 to .92 with a mean of .62. Test-retest correlations ranged from .42 to .89 with a mean of .59 across all scales groups of undergraduates (Carver et al., 1989) and cancer patients (Carver, Pozo, Harris, Noriega, Scheier, Robinson, Ketcham, Moffat & Clark, 1993).

Negative Affect: The Positive and Negative Affect Schedule (PANAS) is comprised of two 10 item mood scales developed by Watson, Clark & Tellegen (1988). The negative affect (NA) scale consists of the following descriptive terms; distressed, upset, hostile, irritable, scared, afraid, ashamed, guilty, nervous and jittery. Descriptive terms are rated on a 1 to 5 point scale labelled; *very slightly or not at all, a little, moderately, quite a bit,* and *extremely,* respectively. The scales can be used with short-term instructions (e.g. today) or long-term instructions (e.g. past year). Respondents were asked to rate on the extent to which they had experienced each mood state during the last month. Watson et al. (1988) report reliabilities (Cronbach's coefficient alpha) ranging from .84 to .87 for NA, for 7 different time-frame instructions ranging from "right now" to "in general". Test-retest reliabilities ranged from .39 to .71 for the NA for the 7 time-frames. Watson et al. (1988) also report modest to strong correlations with other scales such as the Hopkins Symptom checklist, the Beck Depression Inventory and the State-Trait Anxiety Inventory.

Psychological Health: The Mental Health Inventory (MHI) was used to measure psychological well-being. The MHI (Viet & Ware, 1983) can be scored to proved five specific sub-scores, two higher order factors on dimensions labelled by the authors as *psychological well-being* and *psychological distress*, or an overall mental health score. In the present study, the scores for well-being were calculated. Respondents were asked to indicate how they felt about various aspects of their lives over the last month, on a 7-point response scale. Viet and Ware (1983) report internal consistency measures of .92 for psychological well-being, with a one year stability coefficient of .63.

Physical Health: Respondents were asked to provide a self-rating of their current health on a 7-point scale reproduced from Laird and Chamberlain (1990). Respondents were asked to compare and rate their current health to a person in excellent health, ranging from 1 (terrible) to 7 (excellent). Although somewhat simplistic, Idler and Kasl (1991) suggest the simplicity of these types of scales does not necessarily mean the responses are less valid than more complex health status indicators and cite five recent epidemiological studies that found self-reports of health

to be predictive of mortality.

Psychological Climate: Perceptions of characteristics of the work environment were measured using a modified version of the Psychological Climate Questionnaire (PCQ) developed by Jones & James (1979) for use with Navy personnel. This scale has a very broad focus, covering perceptions of jobs and work roles as well as organisational properties, aspects of leadership style and trust. The original instrument consisted of 145 items. Several forms of the PCQ have since been developed for a continuing programme of research (see James et al., 1990). The version used in the present study consisted of 92 items from the original questionnaire. Using the same classification of item composites employed by James and James (1989), eighteen perceived work environment variables were measured: role ambiguity, role conflict, role overload, subunit conflict, organisational identification, management concern and awareness, challenge and variety, autonomy, job importance, leader trust and support, leader goal facilitation, leader interaction facilitation, psychological influence, hierarchical influence, workgroup cooperation, workgroup friendliness and warmth, reputation for effectiveness, and esprit de corps (see appendix one for a brief description of these 18 PC variables included in the questionnaire). Each of these variables is made up of a number of items. Composites were scored by summing across relevant items. In the present study, coefficient alpha for each of the 18 composite variables are reported in Table 8.

Organisational Structure: Two structural variables (formalisation and centralisation) were measured using scales developed by Hage and Aiken (1967). The measure of formalisation has two components. First, a five-item Job Codification scale, which reflects the degree to which employees must consult organisational rules in fulfilling their responsibilities. Items consist of statements about the respondents work that they are required to rate on a 4-point scale, ranging from 1 (definitely false) to 4 (definitely true), these are then averaged. Second, a two-item Index of Rule Observation, reflecting the degree to which employees are checked for rule violation. Items are scored as for the Job Codification scale.

The measures of centralisation consists of two components, Hierarchy of Authority and Index of Participation, with four and five items in the two sub-scales respectively. Hierarchy of Authority is defined as the extent to which members are assigned tasks and provided with the freedom to implement them without interruption from supervision. The five items consist of statements which the respondent rates from 1 (definitely false) to 4 (definitely true). These ratings are then averaged for each respondent. Index of Participation is defined as the extent to which staff members participate in setting the goals and policies of the entire organisation. Items consist of questions about the extent of respondents' participation in work practices that they then rate from 1 (never) to 5 (always). Dewar, Whetton and Boje (1980) report alpha coefficients for the scales ranging from .70 to .96 for three different social service organisation samples and one manpower organisation sample.

Job Satisfaction: A fifteen item scale from the Work and Life Attitudes Survey (Warr, Cook and Wall, 1979) was used to asses job satisfaction. The measure asks respondents to rate various aspects of their job on a seven point scale, ranging from 1 (I'm extremely dissatisfied) to 7 (I'm extremely satisfied). A total score is taken ranging from 15 to 105, with a higher score representing higher Overall Satisfaction. The authors report coefficient alphas of 0.85 and 0.88 for two blue collar samples and a test-retest correlation of 0.63 was observed across six months.

The complete questionnaire is provided in appendix two.

6.4 Results

6.4.1 Data Screening

Prior to the main analyses, data was screened for accuracy of data entry, missing values and fit between variable distributions and assumptions of multivariate analysis.

Length of Time in the Army and Negative Affect were both positively skewed. Square root and logarithmic transformation markedly improved skewness respectively. The three Social Support variables were also positively skewed. Square root transformations considerably reduced skewness for Total Social Support and Military Social Support. Logarithmic transformations also reduced skewness for Satisfaction with Social Support. Index of Participation was negatively skewed, however it was left untransformed as transformation did not alter results. Reflection and square root transformation also greatly reduced negative skewness for the Self Rated Health scale. When descriptive statistics for self rated health are provided, untransformed means and standard deviations are reported for ease of interpretation. When negatively skewed variables are reflected before transformation, interpretation of scores becomes counter-intuitive. Any tests of significance are undertaken on transformed variables and reported as such. Accordingly, signs have been reversed in tables in the case of correlations.

Checks for multivariate outliers revealed five cases that met the use of $p<.001$ criterion for Mahalanobis distances. These cases were deleted, and the remaining 571 cases were retained for analysis. All remaining variables were retained as none had less than five percent missing cases and all satisfactorily met multivariate assumptions (Tabachnick & Fidell, 1989).

6.4.2 Sample Description

Detailed biographical and military experience information for the sample are provided in Tables 6 and 7 respectively. The small number of females (36) was largely a reflection of their overall numbers in the Army (9%). The age range for the total sample (18 to 46 years) is similar to the overall Army although the mean age (26 years, SD = 5.9 years) is slightly lower than 30.4 years at January 1994 (Army Psychological Services, personal communication, January, 1994.)

Table 6
Summary of biographical information for current Army personnel (N=571).

	Number of Respondents	Percentage of Respondents
Gender		
Females	36	6.4
Males	527	92.3
Age (Years)		
≤ 20	121	21.2
21-25	177	31.0
26-30	124	21.7
31-35	89	15.6
36-40	33	5.8
> 40	7	1.2
Marital Status		
Never Married	319	55.9
Married/Defacto	226	39.6
Separated/Divorced/Widowed	18	3.2
Ethnicity		
Maori	171	30.0
Non-Maori	394	68.9
Annual Income		
≤ $20,000	186	32.6
$21,000 - $25,000	155	27.1
$26,000 - $30,000	54	9.5
$31,000 - $35,000	48	8.4
$36,000 - $40,000	76	13.3
$41,000 - $45,000	20	3.5
$46,000 - $50,000	6	1.1
≥ $51,000	9	1.8
Educational Qualification		
No School qualification	76	13.3
School Certificate passes	237	41.5
University Entrance +	148	25.9
Trade & Professional qualification	80	14.0
University qualification	23	4.0

Table 7
Summary of military experience for current Army personnel (N=571).

	Number of Respondents	Percentage of Respondents
Time In the Army (years)		
≤ 5	333	58.3
6 - 10	109	19.1
11 - 15	78	13.7
16 - 20	45	7.9
> 20	4	0.8
Rank		
Private	262	45.9
Corporal, Lance Corporal	101	17.7
Sergeant, Staff Sergeant	95	16.6
Warrant Officers	33	5.8
Officer Cadets	34	6.0
Second Lieutenant/Lieutenant	19	3.3
Captain	20	3.5
Major	7	1.2
Tradegroup		
Administration and Specialist	6	1.1
Clerical	45	7.9
Combat	242	42.4
Communications	21	3.7
Construction - Driver	64	11.2
Food - Health	27	4.7
Mechanical	16	2.8
Skilled Technical/Electronics	12	2.1
Officers and Instructors	138	24.2
Posting		
Linton	381	62.7
Waiouru	89	14.6
Trentham	94	15.5
Other	7	1.2
Territorial Force	34	5.6

It is unusual for personnel to serve beyond 20 years, and Webster (1992) notes that the traditional target age group for recruiting in New Zealand is the 15 - 24 years old group. The majority of subjects were not married (56%), 40% were either married or in a defacto relationship, while 3% were either separated, divorced or widowed. There was a high proportion of Maori subjects (30%) when compared to the 1991 New Zealand census of 9.2% (Department of Statistics, New Zealand, 1993). As of January 1993, 13% of Army personnel identified themselves as Maori, however, 31% identified themselves as New Zealanders and 34% did not specify their ethnicity (New Zealand Psychological Service, personal correspondence, 1993). Most subjects earned less than $26,000 (60%), with fewer than 2% earning over $50,000 per anum. The majority of respondents had some form of school qualification (67%), while only 4% had a university qualification. Fifty eight percent of subjects had been in the Army for five years or less. Less than one percent had been in the Army for longer than 20 years. The distribution of rank among the respondents is similar to that of the entire New Zealand Army.

Analyses

The statistical package, SPSS/PC (Norusis, 1988) was used to examine data and relationships among variables. Analyses were undertaken in four stages. First, principal components analysis was conducted on the 18 psychological climate variables to produce summary descriptions of the work environment for use in further analyses. Second, institutional/occupational (I/O) groups were assessed on I/O markers of formalisation, centralisation, and social support. Third, analyses were undertaken to assess whether aggregation of climate scores to describe collective climates was justified. Fourth, the relationships between study variables were investigated in line with the hypotheses presented on page 112.

6.4.3 Principal Components Analysis

Principal components analysis was undertaken to produce summary composites of the work environment. Reliability estimates (coefficient alpha) for composite Psychological Climate (PC) variables ranged from .41 to .83. These were considered

within acceptable range because alpha is a function of both the average correlation among items and the number of items and therefore tends to be conservative (Nunnally, 1978). When the number of items in a scale is small, Nunnally (1978) suggests the mean interitem correlations are a better estimate of internal consistency, and recommends that these should be no less than .25. All composite climate scales met this criteria.

A principal components analysis followed by varimax rotation of the 18 composite PC variables produced four components with eigenvalues greater than 1.0 (59.8% of the total variance) and are shown in Table 8. The 'Management Concern and Awareness' and 'Organisational Identification' loadings on the third component (.44 and .39 respectively) are considered "poor" (Tabachnick & Fidell, 1989). These two variables also appeared to load in a similar fashion on the other three components (Component 1: .39 and .33; Component 2: .37 and .28; and Component 4; .12 and .28 respectively). Accordingly, it was decided to exclude these two variables from further analyses. Although there are some relatively minor variations in composite loadings, these four components are similar in general terms with those domains of work environment found by Jones and James and colleagues (Jones & James, 1979; James & Sells, 1981- see chapter three), and also parallel those distinctive areas of research historically associated with climate and perceptions of work environments e.g. roles, jobs, leaders and workgroups (e.g. Payne & Pugh, 1976).

The components were labelled in a similar fashion to those shown in Table 2 (pg. 62). Components, their associated labels, composite alphas and number of items per composite are reported in Table 8.

(1) Leadership facilitation and support. The first component reflected perceptions of leaders' behaviour, including their ability to facilitate goals and skills, to provide a trusting and supportive environment, their responsiveness to subordinates' feelings and needs, and their perceived influence with higher levels of command.

(2) Job conflict and pressure. The second component was characterised by measures associated with job and inter-organisational pressures and conflicts. Also included was the degree to which the individual felt he/she had influence on leader decisions.

Table 8
Principal Components of composite Psychological Climate variables (N=487).

Composites	1	2	3	4	alpha	No. of items
Leader facilitation and support						
Leader interaction facilitation	.79				.68	4
Leader goal facilitation	.75				.68	4
Hierarchical influence	.68				.41	2
Leader support and trust	.69				.78	7
Job conflict and pressure						
Role overload		-.78			.59	6
Role conflict		-.74			.64	6
Psychological influence		.59			.57	5
Subunit conflict		-.56			.69	8
Job challenge, autonomy and importance						
Job challenge and variety			.75		.83	8
Job importance			.69		.62	4
Job autonomy			.63		.61	4
Role ambiguity			-.51		.68	6
Management concern and awareness			.44		.60	3
Organisational identification			.39		.69	11
Work group cooperation, friendliness and warmth						
Reputation for effectiveness				.77	.71	3
Esprit de corps				.74	.65	4
Work group friendliness and warmth				.73	.67	3
Work group cooperation				.73	.74	4
Variance explained (%)	35.3	9.8	7.8	6.9		

(3) Job challenge, autonomy, and importance. The third component primarily reflected job characteristics such as job variety, challenge, autonomy and importance, as well as role ambiguity suggesting that jobs that are perceived as challenging and autonomous are associated with unambiguous work environments.

(4) Workgroup cooperation, friendliness and warmth. The fourth component was clearly defined by composites associated with the workgroup, such as friendliness, cooperation and pride.

Scores on the climate variables were standardised to allow for the disparity in standard deviations among variables and then component scores were estimated by summing scores on the variables that loaded highly on each component e.g. those above .50. This method of estimating component scores, although simplistic, is considered entirely adequate for most research purposes (Tabachnick & Fidell, 1989). Alpha reliabilities for the components were: Leader facilitation and support, .79; Job conflict and pressure, .73; Job challenge, autonomy and importance, .71; and Workgroup cooperation, friendliness and warmth, .80.

6.4.4 I/O Markers - Formalisation, Centralisation and Social Support

To evaluate the legitimacy of grouping personnel into the three groups for the purposes of describing I/O modalities, perceptions of organisational structure, namely formalisation and centralisation, were assessed across groups. It was expected that the combat group would be high in both formalisation and centralisation, that the service support group would be low on both these variables, and the combat support group would be somewhere in between these two extremes.

Means and standard deviations for the two indicators of formalisation and the two indicators of centralisation across the three groups are presented in Table 9. Responses on the Index of Participation and Job Codification scales were reversed to provide meaningful comparisons between structural variables. High scores on the Job Codification and Rule Observation scales represent perceptions of high formalisation. High scores on the Hierarchy of Authority and the Index of Participation scales represent high centralisation. For all four structural variables, the Combat group's

mean scores are as expected in relation to the other two groups. Relationships are in the expected direction with the exception of: Hierarchy of Authority where the Combat Support group and the Service Support group have highly similar mean ratings of centralisation; and Index of Participation where means for the two Support groups are the same.

Oneway analyses of variance (ANOVA) were undertaken to test for differences in organisational structure perceptions across the three groups of personnel. In addition Scheffe's ranges tests were undertaken for 'multiple comparisons' among group means to reduce Type 1 error (Norusis, 1989).

Table 9
Means and standard deviations for Formalisation and Centralisation across I/O groups.

	I/O Groups						
	Combat		Combat Support		Service Support		
	M	SD	M	SD	M	SD	F
Formalisation							
Job Codification	3.13	.55	2.99	.50	2.95	.50	**
Rule Observation	2.69	.83	2.31	.82	2.14	.77	***
Centralisation							
Hierarchy of Authority	2.63	.71	2.49	.70	2.50	.66	ns
Index of Participation	4.48	.74	3.95	.97	3.95	.86	***

**p<.01, ***p<.001

This tests for all possible differences among the harmonic mean for all group sizes and is conservative for pairwise comparisons in that it requires large differences between group means for significance. Three of the four structural variables were significantly different across groups. Job Codification, $F(2,548) = 4.71$, $p<.01$; Rule Observation, $F(2,558) = 17.96$, $p<.001$; and Index of Participation, $F(2,561) = 27.02$, $p<.001$. Hierarchy of Authority was not significant $F(2,553) = 2.50$, $p<.08$. However, range tests showed that for Rule Observation and Index of Participation, the significance was due to differences between the Combat group and the other two groups. There was no significant difference between Combat Support and Service Support Groups at the .05 level. Moreover, there were no significant differences between any pairs of groups on Job Codification at the .05 level.

The Rule Observation scale reflects the degree to which employees are checked for violation of set rules, accordingly this was perceived as more applicable to the Combat group than the other two groups. Index of participation reflects the extent to which staff members participate in setting the goals and policies of the entire organisation, thus this was a less frequent occurrence for the combat group as compared to the other two groups.

A further procedure for evaluating the appropriateness of grouping personnel into the three proposed I/O modalities, is to look at the relative proportion of social contacts outside the military across the three groups. A new variable was created to examine the relative proportion of military contacts (Percentage of Military Contacts). It was expected that the more institutional the group the less civilian social contact there would be for its members. Means and standard deviations for the three groups on social contact variables are shown in Table 10. Total social contacts are similar across groups. The Combat group had the highest mean for military contacts, as expected. The percentage of total military contacts was as expected, with the mean percentage greatest for the Combat group and least for the Services Support group. Oneway analyses of variance, showed only Military Contacts as significant, $\underline{F}(2,482) = 3.09$, $p<.05$, although a Scheffe's ranges test found no significant differences between pairs of groups at the .05 level.

Table 10
Means and standard deviations for total number of Social Contacts, number of Military Contacts and Percentage of Military Contacts across I/O groups.

	I/O Groups						
	Combat		Combat Support		Service Support		
	M	SD	M	SD	M	SD	F
Total Social Contacts	1.72	.65	1.61	.61	1.71	.63	ns
Military Contacts	.96	.72	.78	.67	.83	.64	*
% Military Contacts	36.58	28.96	31.38	30.25	29.41	25.92	ns

*p<.05

The univariate data and ANOVA results suggested that the Combat Support and Service Support groups had similar perceptions of the organisational structure of the Army and would be better combined to represent an overall, more occupationally orientated group. A more clear cut division between combat roles and support roles was considered an appropriate method of distinguishing between institutional and occupational modalities and demonstrating hypothesised differences in perceptions of organisational structure and social support based on these modalities. Consequently, the Combat Support and Service Support groups were combined to represent an occupationally orientated grouping of corps. These groups were recoded, 1 for Combat (N=387) and 2 for Support (N=183). Table 11 shows mean age, marital status, percentage of women employed, and minimum and maximum educational requirements for this combined group across the Army. A breakdown of demographic and military data for the two sample groups is provided in appendices three and four.

The means and standard deviations for the combined Support group on the structural variables are presented in Table 12 along with those for the Combat group. T-tests were used to examine differences in group means on the structural variables. In these analyses, an F test of sample variances was carried out. If the probability of F was >.05, then it was assumed sample variances were equal and pooled variance estimates were used. If the probability of F was <.05 then it was assumed sample variances were unequal and separate variance estimates of t were used (Snedecor & Cochrane, 1980). Statistical significance was assessed using two-tailed tests with alpha set at 0.05. As predicted the Combat group perceived the Army to be more centralised and formalised than the Support group; Job Codification, $t(490) = 2.35$, $p<.05$; Rule Observation, $t(559) = 5.86$, $p<.001$; Hierarchy of Authority, $t(554) = 2.24$, $p<.05$, and Index of Participation, $t(167.92) = 5.47$, $p<.001$.

The means and standard deviations for the combined Support group on the Social Contact variables are shown in Table 13 along with those for the Combat group. The average total number of social contacts was marginally higher for the Combat group although this difference was not significant $t(528) = 1.33$, $p=.185$. The average total number of military contacts was higher for the Combat group, $t(483) = 2.46$, $p<.05$.

Table 11
Mean Age, Marital Status, Percentage of Women employed and Min/Max Educational Requirements for Combat and Support Groups.

Group	Age (Mean)	Marital Status (% Married or Defacto)	% Women Employed	Educational Level Requirements for Trades within Corps
Combat RNZCOC (1) RNZA (2) RNZAC (3) RNZE (4) RNZIR (6) NZSAS (7)	26.11	43%	Approximately 1%	Min. 3 yrs secondary school Max. School certificate subjects
Support RNZSIGs (5) NZAAC (8) NZIC (9) RNZCT (10) RNZAOC (12) RNZAMC (11) RNZEME (13) RNZDC (14) RNZChD (15) NZAPC (16) NZALS (17) RNZMP (18) RNZAEC (19) NZAPTC (20) RNZNC (21)	30.67	55%	Approximately 34%	Min. 3 yrs secondary school Max. Sixth Form certificate subjects

Table 12
Means and standard deviations for Formalisation and Centralisation for Combat and Support groups.

	I/O Groups				
	Combat		Support		
	M	**SD**	**M**	**SD**	**F**
Formalisation					
Job Codification	3.13	.55	2.98	.50	*
Rule Observation	2.69	.83	2.25	.81	***
Centralisation					
Hierarchy of Authority	2.63	.71	2.49	.69	*
Index of Participation	4.48	.74	3.95	.97	***

*p<.05, ***p<.001

Table 13
Means and standard deviations for total number of Social Contacts, number of Military Contacts and Percentage of Military Contacts for Combat and Support groups.

	I/O Groups				
	Combat		Support		
	M	SD	M	SD	t
Total Social Contacts	1.72	.65	1.64	.61	ns
Military Contacts	.96	.71	.79	.65	*
% Military Contacts	36.58	28.96	30.75	28.86	*

*$p<.05$

When this was converted to a percentage of total social contacts, the Combat group had, as expected, a higher percentage of social contact with military personnel, (as opposed to civilian contacts), $t(472) = 2.06$, $p<.05$, than the Support group.

Summary

Hypotheses 1 and 2 received support for the three I/O groupings of Combat, Combat Support and Service Support. Three of the four structural measures were significantly different across the three groups and the Combat group perceived the Army to be more centralised and formalised than the other two groups. There were no differences in perceptions of organisational structure between the Combat Support and Service Support groups.

There were no significant differences between pairs of I/O groups on the social contact variables, although the Combat group did report the highest percentage of military contacts.

Collapsing the Combat Support and Service Support groups into one occupationally oriented group provided stronger support for hypotheses 1 and 2. There were significant differences across the two groups on all structural variables. The Combat group perceived the Army as more centralised and formalised. Additionally, the Combat group had a significantly higher percentage of military contacts than the

Support group. These findings provide further support for the existence of Institutional and Occupational modalities within the New Zealand Army.

6.4.5 Organisational Climate

Aggregation of Psychological Climate Scores

As discussed earlier (chapter three), there is debate on the use of aggregated climate data. The controversy surrounds the question of whether similarity of *psychological* climate scores at different organisational levels is a necessary condition for aggregate scores to be reliable measures of the *organisational* climate of those levels (Moussavi, Jones & Cronan, 1990).

Glick (1985) argues that unless individual level perceptual agreement is very low, then aggregated scores may appear to be reliable and valid measures of organisational climate as individual level random errors and sources of bias will be cancelled out. However others suggest (e.g. Jones & James, 1979; Joyce & Slocum, 1984; etc) that measuring *both* within group and across group agreement criteria is a practical mechanism "to establishing conclusiveness and consistency in substantive relationships of perceptual constructs" (Moussavi, Jones & Cronan, 1990).

In the present study the focus was on the aggregation of psychological climate scores to represent descriptions of the organisational climate of the Combat and Support groups (thought to represent I/O modalities) (means were computed). The appropriateness of this level of aggregation was assessed on the basis of three criteria. The first requires significant differences in climate scores across level groups. The second requires that members of the same group have similar climate scores. Thirdly, the reliability of the aggregate mean scores needs to be assessed (Jones and James, 1979).

First, between-group differences in PC perceptions were assessed by one-way analysis of variance (ANOVA) for each PC climate component across groups[9]. The results

[9] ANOVA were used in this instance in order to calculate the statistics necessary to assess interrater reliability, and the reliability of mean scores.

of the one-way ANOVA analyses are presented in Table 14. Three of the climate components were significantly different across the Combat and Support groups. Leadership, facilitation and support; Job challenge, autonomy and importance; and, Workgroup cooperation, friendliness and warmth.

The second criterion to be assessed with regard to the appropriateness of aggregation was that of shared perceptions within groups. In order to assess the interrater reliability of the mean PC scores, a form of intraclass correlation, ICC(1), was computed. This provides an indication of the proportion of variance in individual's perceptions accounted for by differences within groups. High intraclass correlations indicate low within group variance (James, 1982), and consequently perceptual agreement within groups. ICC(1) provides a point estimate of interrater reliability from the mean squares from ANOVA, and is commonly used in climate research (Jones & James, 1979; Shrout & Fleiss, 1979; Snedecor & Cochran, 1980; James, 1982; Joyce & Slocum, 1984; Moussavi, Jones & Cronan, 1990; Ostroff, 1992). Previously obtained values have ranged from .00 to .50 with a median of .12 (James & Sells, 1981), and from .01 to .16 (Moussavi, Jones, & Cronan, 1990). Joyce and Slocum (1984) reported somewhat higher values overall, ranging from .00 to .79, however, these were the result of the level of analysis being derived from cluster analysis based on perceptual agreement[10]. Using the formula provided in McNemar (1969, pg.322), intraclass correlations were computed from ANOVA results and are presented in Table 14. These correlations were extremely low and ranged between .00 and .04.

Third, the reliability of the mean scores was assessed by computing Spearman-Brown estimates of reliability based on intraclass correlations (ICC(2)) (Guilford, 1954; Bartko, 1976; James, 1982; Ostroff, 1992). This form of reliability estimate can be

[10]Their study involved cluster analysis of individuals on the basis of six climate dimensions, which resulted in 13 collective climates. The range of intraclass correlations would suggest that ICC values need not be very high to indicate within group agreement even where levels of analysis have been defined a priori to have high within group perceptual agreement. However, 15 of the ICC values in Joyce and Slocum's study exceeded the median of .12 reported by James and Sells (1981), suggesting that it is perhaps only very low values of ICC which indicate poor agreement. Alternatively, as suggested by Moussavi et al (1990) and demonstrated by Joyce and Slocum (1984), the lack of very high ICC values may not preclude agreement.

Table 14

Means and standard deviations for Combat and Support groups on Climate Components and analyses of agreement of climate scores at Combat and Support group levels.

Climate Component	Combat (n=324)		Support (n=162)		I/O Groups (n=2)				
	M	SD	M	SD	M	SD	F[a]	ICC(1)[b]	ICC(2)[c]
1. Leader facilitation and support	.30	2.96	-.82	3.50	.03	3.13	11.87***	.04	.92
2. Job conflict and pressure	.23	2.78	.18	3.37	.21	2.94	.02	.00	.51
3. Job challenge, autonomy & importance	-.03	2.75	.64	3.32	.14	2.91	4.80*	.02	.79
4. Workgroup cooperation, friendliness and warmth	.27	3.18	-.63	3.08	.06	3.17	7.50**	.03	.86

[a] *p<.05, **p<.01, and *** p<.001.

[b] Intraclass correlation coefficients.

[c] Spearman-Brown estimates of the reliability of the mean score based on intraclass correlations.

interpreted as follows (Ostroff, 1992): If another set of individuals were randomly sampled from the same organisational level and the two sets of mean scores were correlated, the resulting values would approximately equal ICC(2). The results of these analyses are presented in Table 14. Previously reported estimates, (Jones & James, 1979), were substantially higher than the intraclass correlation estimates of interrater reliability, and ranged from .51 to .92. Such notable differences between these two measures of reliability can be explained. James (1982) notes that ICC(2) is an estimate of the reliability of means and *not* agreement among individuals, and suggests that due to large sample sizes ICC(2) provides an over-estimation of perceptual agreement within groups. Given a significant F-ratio, low ICC(1) and high ICC(2), James (1982) suggests researchers can come to the following conclusion: That means are highly reliable, groups may be differentiated in terms of perceptions but that individuals within groups *do not agree* with regard to Psychological Climate perceptions.

To assess whether individual psychological climate could be aggregated to describe collective organisational climates within the Army at other organisational levels, apart from that specified by the institutional/occupational model, the same criteria were applied to aggregated climate scores for Trades, Trade Groups, Units and all Corps[11]. The results are presented in Table 15. All F-ratios in ANOVA analyses were significant, however ranges tests demonstrated that this significance was accounted for by only a few significant differences between pairs of groups at each organisational level ($p<.05$).

Intraclass correlations (ICC(1)) were computed from ANOVA results and ranged from .09 to .12 for Trades, .03 to .07 for Trade Groups, .07 to .09 for Units, and .03 to .08 for Corps. These again were relatively low and only one equalled the median reported elsewhere (James & Sells, 1981). Spearman-Brown estimates of reliability based on intraclass correlations (ICC(2)) were again substantially higher than the intraclass

[11]Only groups with climate data for 6 or more individuals were included in these analyses. Medical, Dental and Nursing corps were combined due to small numbers and the similarity of their health provider roles.

Table 15
Analyses of agreement for organisational levels of aggregation for climate components.

Climate Component	Level of aggregation																			
	Trade (n=22)					Tradegroup (n=9)					Unit (n=12)					Corps (n=10)				
	M	SD	F[a]	ICC(1)[b]	ICC(2)[c]	M	SD	F	ICC(1)	ICC(2)	M	SD	F	ICC(1)	ICC(2)	M	SD	F	ICC(1)	ICC(2)
1. Leader facilitation and support	-.03	.31	3.29***	.09	.70	-.01	3.08	2.98**	.03	.66	-.03	3.07	4.57***	.07	.78	.02	3.08	5.01***	.07	.80
2. Job conflict and pressure	.17	2.98	4.06***	.12	.75	.09	2.99	4.54***	.06	.78	.14	2.98	5.26***	.09	.81	.08	3.00	5.37***	.08	.81
3. Job challenge, authority & importance	.01	2.88	3.83***	.11	.74	.10	2.91	5.32***	.07	.81	.06	2.90	4.11***	.07	.76	.09	2.89	2.75**	.03	.64
4. Workgroup cooperation, friendliness and warmth	.05	3.18	3.40***	.09	.70	.05	3.16	2.68**	.03	.63	.02	3.15	4.74***	.08	.79	.05	3.15	4.30***	.06	.77

[a] *p<.05, **p<.01, and ***p<.001.
[b] Intraclass correlation coefficients.
[c] Spearman-Brown estimates of the reliability of the mean score based on intraclass correlations.

correlation estimates of interrater reliability, and ranged between .63 and .81.

Summary

Hypothesis 3 was partly supported. The Combat group did perceive their leaders to be more supportive and skilled, their jobs to be less challenging, autonomous and important, and their workgroups to be more friendly, cooperative and warm compared to the Support group, as predicted. There were no significant differences in group perceptions of conflict and pressures. However, as discussed in chapter three, perceptual agreement is of primary concern with regard to the aggregation of psychological climate perceptions to form descriptions of organisational climate. In the present study, F-ratios were generally small; ICC(1) values were low with none exceeding the median found elsewhere (James & Sells, 1981); only ICC(2) values appear to fall within acceptable ranges, however as noted by James (1982), ICC(2) is a useful method for assessing the reliability of means but it should not be utilised as the *only* instrument for deciding whether to aggregate climate perceptions. The data and results in the present study suggest that there is little justification for aggregating scores to institutional/occupational groupings as they appear to explain little variance in psychological climate perceptions. Although the hypothesised differences in mean climate scores for the institutional versus occupational models were generally confirmed (Table 14), the expectation that sections of the Army judged institutional versus occupational would generate not only between group differences in climate perceptions but *also* shared within group climate perceptions was not supported. Thus even though there are grounds for distinguishing between I/O groups within the Army (see above), and these groups demonstrate differences in structural variables, there appears to be little evidence for explicit *shared* organisational climates based on these modalities.

The results of the analyses to assess whether psychological climate could be aggregated to other organisational levels were similar to that found for the I/O modalities, and again provide little justification for the aggregation of data to higher organisational levels as they appear to explain little variance in psychological climate perceptions, and thus provide unconvincing descriptions of *collective climates*. Data was consequently analysed at the individual level.

6.4.6 Factors contributing to Job Satisfaction, Psychological Well-being and Self Rated Health

Simple Intercorrelations

A number of categorical and ordinal variables were recoded for future analyses: Rank and ethnicity, were coded as follows: Other ranks = 1, Officers = 2; Maori = 1, Non-Maori = 2. The dichotomous splits for these two variables were 16/84% and 43/57% respectively. Education was coded as: No school qualifications = 1, School Qualifications = 2, Post-School Qualifications = 3. Simple intercorrelations among control, structural, climate and outcome measures are provided in Table 16[12]. Means and standard deviations for these variables across the discrete variables of rank, ethnicity, I/O membership and education are shown in Tables 17 and 18.

Structural Variables

Perceptions of a formalised and centralised workplace decreased with age, income and time in the Army. Not surprisingly negative affect was positively correlated with structural variables. There were significant differences in the two centralisation and one of the formalisation scales across the two groups of rank, with the other ranks viewing the Army as both more formalised and centralised than officers: Job Codification, $\underline{t}(550) = 2.07$, $p<.05$; Hierarchy of Authority, $\underline{t}(555) = 5.87$, $p<.001$; and Index of Participation, $\underline{t}(91.34) = 5.35$, $p<.001$. Only one of the structural variables was significantly different across ethnic groups. Maori perceived the Army structure to be more centralised than non-Maori, Hierarchy of Authority, $\underline{t}(549) = 2.70$, $p<.01$. As noted earlier, the combat group (institutional) viewed the Army as more formalised and centralised. Oneway ANOVA and ranges tests showed a significant difference in job codification across educational groups, $\underline{F}(2,542) = 4.39$, $p<.05$, such that those with post-school qualifications viewed the Army as less formalised than those with school qualifications. Ranges tests also show that on the other formalisation scale, the post-school qualifications group was significantly different to the other two groups on perceived rule observation ($\underline{F}(2,553) = 5.75$, $p<.01$. Similarly this group was significantly different from the other two groups on Hierarchy of Authority ($\underline{F}(2,547) = 7.32$, $p<.001$) and Index of Participation ($\underline{F}(2,555) = 13.50$, $p<.001$), suggesting that

[12] Correlations between study variables were examined using simple Pearson correlations

Table 16
Intercorrelations between personal, structural, climate and outcome variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age														
2 Income	.78***													
3 Time in the Army	.86***	.77***												
4 Negative Affect	-.08	-.05	-.06											
5 Job Codification (Formalisation)	-.35***	-.36***	-.33***	.14**										
6 Rule Observation (Formalisation)	-.25***	-.31***	-.22***	.12**	.30***									
7 Hierarchy of Authority (Centralisation)	-.25***	-.28***	-.23***	.22***	.44***	.36***								
8 Index of Participation (Centralisation)	-.61***	-.66***	-.56***	.13**	.39**	.29***	.38***							
9 Leadership facilitation and support	-.11*	-.08	-.18***	-.14**	-.15**	-.07	-.18***	-.10*						
10 Job conflict and pressure	-.07	-.15**	.00	.34***	.36***	.45***	.45***	.26***	-.42***					
11 Job challenge, autonomy and importance	.24***	.27***	.19***	-.25***	-.38***	-.28***	-.44***	-.39***	.53***	-.50***				
12 Workgroup cooperation, friendliness and warmth	.04	.06	.04	-.33***	-.14**	-.12**	-.16**	-.18***	.46***	-.40***	.46***			
13 Job Satisfaction	.12*	.16**	.00	-.33***	-.39***	-.26***	-.42***	-.32***	.53***	-.58***	.64***	.38***		
14 Well-being	.05	.04	-.03	-.44***	-.17***	-.13**	-.16***	-.15**	.25**	-.34***	.39***	.32***	.46***	
15 Self Rated Health	-.10*	-.07	-.15**	-.21***	-.03	.01	-.12**	.04	.16***	-.23***	.18***	.26***	.31***	.33***

*p<.05, **p<.01, ***p<.001

Table 17
Means and standard deviations for personal characteristic, structural and climate variables across rank and ethnicity.

	Rank					Ethnicity				
	Officers (n=78)		Non-Officers (n=476)			Maori (n=171)		Non-Maori (n=394)		
	M	SD	M	SD	t	M	SD	M	SD	t
1 Age	26.01	5.85	25.91	6.07	ns	25.68	5.26	26.20	6.12	ns
2 Income ($)	28,811	11,635	26,252	8,046	ns	25,638	7,630	27,034	9,006	ns
3 Time In Army	2.41	1.06	2.06	1.14	**	2.30	.92	2.38	1.13	ns
4 Negative Affect	1.27	.15	1.25	.02	ns	1.26	.16	1.28	.15	ns
5 Job Codification (Formalisation)	3.10	.55	2.96	.45	*	3.04	.55	3.10	.53	ns
6 Rule Observation (Formalisation)	2.55	.84	2.51	.92	ns	2.60	.81	2.53	.87	ns
7 Hierarchy of Authority (Centralisation)	2.65	.70	2.16	.60	***	2.71	.72	2.53	.70	*
8 Index of Participation (Centralisation)	4.40	.79	3.76	1.00	***	4.41	.80	4.28	.86	ns
9 Leadership facilitation and support	.63	2.73	-.11	3.13	*	.16	3.22	-.09	3.04	ns
10 Job conflict and pressure	-.62	3.07	.20	2.97	*	.63	2.97	-.13	2.99	*
11 Job challenge, autonomy and importance	.82	2.98	-.01	2.89	*	-.03	2.84	.14	2.95	ns
12 Workgroup cooperation, friendliness and warmth	-.48	2.94	.13	3.19	ns	-.05	3.29	.10	3.10	ns
13 Job Satisfaction	70.62	11.69	65.18	13.58	**	66.56	14.06	65.69	13.22	.05
14 Well-being	59.15	13.83	59.10	14.36	ns	61.06	14.71	58.39	13.89	*
15 Self Rated Health	5.68	.90	5.39	1.09	ns	5.38	1.14	5.46	1.03	ns

*p<.05, **p<.01, ***p<.001

Table 18
Means and standard deviations for personal characteristic, structural and climate variables across I/O membership and education.

	I/O Membership					Education						
	Institutional (n=387)		Occupational (n=183)			No School Qualifications (n=76)		School Qualifications (n=385)		Post School Qualifications (n=103)		
	M	SD	M	SD	t	M	SD	M	SD	M	SD	F
1 Age	24.58	5.08	29.16	6.25	***	27.72	5.80	24.77	5.26	29.58	6.36	***
2 Income ($)	24,206	6,898	31,698	9,798	***	27,390	8,191	25,068	7,810	31,852	9,944	***
3 Time In Army	2.08	.95	2.95	1.09	***	2.71	1.06	2.17	1.00	2.76	1.14	***
4 Negative Affect	1.27	.15	1.28	.16	ns	1.28	.14	1.24	.15	1.26	.16	ns
5 Job Codification (Formalisation)	3.13	.55	2.98	.50	**	3.02	.61	3.12	.52	2.96	.51	*
6 Rule Observation (Formalisation)	2.69	.83	2.25	.81	***	2.75	.79	2.57	.84	2.33	.89	**
7 Hierarchy of Authority (Centralisation)	2.63	.71	2.49	.69	*	2.78	.68	2.60	.71	2.38	.68	***
8 Index of Participation (Centralisation)	4.48	.74	3.95	.94	***	4.43	.86	4.40	.81	3.93	.88	***
9 Leadership facilitation and support	.30	2.96	-.66	3.26	**	-.99	3.18	.23	3.04	-.21	3.11	**
10 Job conflict and pressure	.23	2.78	-.19	3.39	ns	1.40	2.73	.06	2.90	-.75	3.25	***
11 Job challenge, autonomy and importance	-.03	2.75	.38	3.20	*	-.45	3.00	.05	2.83	.60	3.16	ns
12 Workgroup cooperation, friendliness and warmth	.27	3.18	-.42	3.07	*	-.99	3.67	.25	3.04	.11	3.05	**
13 Job Satisfaction	66.10	13.19	65.80	14.00	ns	61.51	15.33	66.54	13.04	67.10	13.05	**
14 Well-being	59.25	14.07	58.91	14.71	ns	56.53	13.53	59.17	14.05	61.33	14.85	ns
15 Self Rated Health	5.49	1.03	5.31	1.14	ns	5.29	1.19	5.46	1.00	5.47	1.19	ns

*p<.05, **p<.01, ***p<.001

the more highly educated perceive the Army as less centralised in its decision making. The four structural variables were all positively correlated with each other, ranging from r=.29 to r=.44.

Climate Components

Age was negatively related to Leader facilitation and support such that older personnel perceived those in command as lacking in the required leadership skills. Not surprisingly the same relationships existed between this climate component and time in the Army and negative affect. The conflict component was negatively related to both income and age, although the latter was not significant. Negative Affect was positively correlated with this component. Job challenge, autonomy and importance was higher for older personnel, those on higher incomes and those with longer tenure. These people also scored lower on the negative affect scale. Workgroup cooperation, friendliness and warmth appears to have little relation to age, income or time in the Army, however, perceptions of a friendly cooperative workgroup were related to low negative affect.

Officers were more likely to perceive good leadership skills in their superiors than were other ranks, $t(548) = 1.96$, $p=.05$. Officers also considered their jobs to involve less conflict and pressure than did other ranks, $t(532) = 2.22$, $p<.05$. Other ranks perceived their jobs as being far less challenging and important than officers did, and felt they had less autonomy over their work, $t(534) = 2.32$, $p<.05$. Only one of the climate variables differed significantly over ethnic groups with Maori reporting higher levels of job conflict and pressure, $t(526) = 2.72$, $p<.01$. As noted earlier the combat group (institutional) perceived their leaders to be more supportive and skilled, their jobs to be less challenging and their workgroups friendlier and more cooperative than the support group (occupational). Across the educational groups, oneway ANOVA and ranges tests showed that those with no school qualifications rated the leadership qualities and skills of their superiors as significantly poorer than the group with school qualifications $F(2,540) = 5.10$, $p<.01$, and perceived their workgroups as less friendly and cooperative than the school qualifications group, $F(2,542) = 4.95$, $p<.01$. The no qualifications group also experienced more job conflict and pressure than either of the other two groups, $F(2,524) = 10.96$, $p<.001$.

With regard to the relationships between the climate variables and the structural variables, it appears that work environments that were perceived as formalised and centralised were to a large degree also seen as having poor leadership, high job conflict and work pressure, low job variety and challenge, and workgroups that were uncooperative, lacking in warmth and friendliness. Not surprisingly, the Job Conflict climate component was negatively related to the other three components which were all positively correlated with each other.

Outcome Variables

Job Satisfaction[13]

Age and income were positively correlated with job satisfaction. Tenure was not positively related to job satisfaction, in fact these two variables were not related at all. Not surprisingly, high negative affect was associated with low levels of job satisfaction. Officers had higher levels of job satisfaction than other ranks, $t(534) = 3.35$, $p<.01$. Maori were marginally more satisfied with their job than non-Maori, $t(528) = .68$, $p=.50$. Individuals in the institutional group were, on average, slightly more satisfied in their jobs than the occupational group, but this was not significant, $t(533) = .24$, $p=.81$. Oneway ANOVA and ranges tests showed that those with no school qualifications were significantly less satisfied with their jobs than those with school or higher qualifications, $F(2,526) = 4.77$, $p<.01$. Formalisation and centralisation, were negatively correlated with satisfaction i.e. perceptions of a more formalised and centralised work environment were related to lower levels of job satisfaction.

With regard to the relationship between psychological climate and job satisfaction, results suggest that good leadership, challenging jobs, opportunities to use skills and have a say in how work is done, friendly workgroups characterised by cooperation and warmth and little conflict and pressure, were all associated with higher levels of job satisfaction.

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[13] Analyses involving age and job satisfaction were repeated but with age squared and age cubed polynomial terms as there is evidence that the relationships between these two variables is curvilinear (e.g. Kacmar & Ferris, 1989). No non-linear effects were found so these analyses are not reported.

Psychological Well-being

Well-being was not significantly related to either age, income or tenure, however there was a strong negative relationship with negative affect. There was no significant difference in well-being between officers and other ranks. Maori reported higher levels of psychological well-being, $t(546) = 2.03$, $p<.05$ than non-Maori. The institutional group reported slightly higher levels of well-being compared to the occupational group, however this result was not significant, $t(551) = .26$, $p=.79$. There were no significant differences in well-being across the three educational groups, $F(2,544) = 2.45$, $p=.09$. Formalised and centralised environments were related to low levels of well-being. As with job satisfaction, well-being was associated with work environments that were perceived as positive in nature.

Self Rated Health

Age and tenure were both negatively related to employees' perceptions of their own health status, such that the older employees were and the longer they had served in the Army, the poorer their health was rated. Negative Affect was also related to poor self rated health status. There was a slight difference in the mean ratings of health between officers and other ranks, $t(567) = 2.13$, $p<.05$. There were no significant differences in self rated health between Maori and non-Maori, $t(561) = .65$, $p=.51$, or between occupational and institutional groups $t(566) = 1.77$, $p=.08$. Educational level was not related to self rated health $F(2,559) = .71$, $p=.49$. There appears to be little relationship between organisational structure and self rated health, with only a small significant relationship between this outcome variable and hierarchy of authority - the reliance upon superiors for job decisions. High self ratings of health status were again related to positive aspects of leadership, challenge and cooperation, and low levels of job conflict and pressure. All three outcome variables were positively related to each other.

Regression Analyses

Hierarchical regression analyses were used to assess the contribution of independent variables (e.g. personal characteristics, structural variables and psychological climate)

to outcome variables (e.g. job satisfaction, well-being and self rated health). This particular type of regression analysis was used because the researcher controls the entry of blocks of variables and is thus able to assess the proportion of variance attributable to a particular block of variables after variance due to other IV's or blocks of IV's is accounted for (Tabachnick & Fidell, 1989). Rank, I/O membership and ethnicity were dichotomised. Binary coding provides interpretable mean differences as regression coefficients (Jaccard, Turrisi & Wan, 1990). For the purposes of regression analysis, education was dummy coded. This is a process of recategorisation where a categorical variable is turned into a set of dichotomous variables i.e. No School Qualifications vs School Qualifications, School Qualifications vs Post-School Qualifications. When the set of 2 level variables are entered in regression, the variance due to the original categorical variable is analysed and the effects of the new dichotomous components can be examined. The number of women in the sample was small, 36, and represented a dichotomous split of 6% women and 94% men for the final sample. Tabachnick and Fidell (1989) recommend at least a 10/90% split, therefore gender was not used in analyses. The effects of personal characteristic variables were estimated in the first step.

Job Satisfaction

Hierarchical regression analysis was used to evaluate the contribution of each block of variables in explaining job satisfaction. The effects of structural variables were estimated after controlling for personal characteristics. The effects of climate were then estimated after controlling for the effects of personal characteristic and structural variables. The results are presented in Table 19. The standardised beta coefficients for each variable within the blocks are reported. Total variance explained by each step of the equation is provided (R^2 and adjusted R^2) along with the added variance explained by each block of variables while controlling for previous blocks (R^2 change). R was significantly different from zero at the end of each step.

Table 19

Hierarchical multiple regression of personal characteristics, formalisation, centralisation and climate components on job satisfaction showing standardised regression coefficients, R, R^2, Adjusted R^2 and R^2 change for all subjects (N=405).

	Steps		
Predictors	**1**	**2**	**3**
Personal characteristics			
Age	.271**	.159	.128
Income	.299***	.129	.090
Time in the Army	-.451***	-.503***	-.310***
Negative Affect	-.318***	-.230***	-.127***
Rank	.021	-.069	-.032
I/O membership	.018	.010	.030
Ethnicity	-.054	-.075	-.072*
Education 1	.073	.041	.017
Education 2	-.078	-.055	-.053
Structural variables			
Job Codification (Formalisation)		-.216***	-.107**
Rule Observation (Formalisation)		-.042	.037
Hierarchy of Authority (Centralisation)		-.236***	-.086*
Index of Participation (Centralisation)		-.234***	-.102*
Climate components			
Leadership facilitation and support			.194***
Job conflict and pressure			-.217***
Job challenge, autonomy and importance			.310***
Workgroup cooperation, friendliness and warmth			-.027
R	0.44***	0.61***	0.77***
Total R^2	0.20	0.38	0.59
Adjusted R^2	0.18	0.36	0.57
R^2 change	0.20***	0.18***	0.21***

*p<.05, **p<.01, ***p<.001.

At step one, personal characteristic variables alone explained 18% of variance (adjusted R^2) in job satisfaction, $F(9,395) = 10.71$, $p<.001$. After step two, with the addition of the four structural variables, total variance explained in job satisfaction was 36% (adjusted R^2), $F(13,391) = 18.26$, $p<.001$. The structural variables accounted for 18% unique variance in job satisfaction when controlling for personal characteristic variables. The R^2 change when entering the structural variables after personal characteristic variables was significant, $F(13,391) = 28.53$, $p<.001$. After step three, with the four climate variables entered after the personal characteristic and structural variables, total variance explained in job satisfaction increased to 57% (adjusted R^2), $F(17,387) = 32.59$, $p<.001$. The climate variables accounted for 21% unique variance in job satisfaction when controlling for personal characteristic and structural variables. The R^2 change after entering the climate variables to the equation was significant, $F(17,387) = 49.63$, $p<.001$.

By examining the beta coefficients at each step it is possible to observe the effects of individual variables on the dependent variable within each block of variables and the extent to which the addition of subsequent steps alters these effects. With all variables in the equation (step three), only time in the Army, negative affect and ethnicity were significantly related to Job Satisfaction from the first block of variables. Age and income, although significantly correlated with job satisfaction in bivariate analysis, and significant predictors at step one, such that older and more highly paid employees report higher levels of job satisfaction, appear to be mediated through structural variables and climate components. Although, education was significantly related to job satisfaction at the bivariate level, neither of the dummy education variables were significant contributors to job satisfaction at any of the three multivariate steps. This may be a result of the significant relationships between education and other personal characteristics (income, age and tenure) in bivariate analyses.

Rank did not significantly contribute to job satisfaction at any step in the equation, although there was a significant difference between levels of job satisfaction for officers and other ranks in bivariate analysis (officers reported higher levels). This is perhaps due in part to the relationship between rank and time in the Army. T-tests

revealed that officers, on average, had longer tenure than non-officers. Examination of beta indicates that longer tenure is related to lower job satisfaction levels, suggesting that the differences found in job satisfaction across rank may be due to length of service. Time in the Army maintained its relationship with job satisfaction at step two, but was partially mediated by climate components at step three such that longer tenure was associated with lower levels of job satisfaction although this was partially through the psychological climate experienced by longer service. Time in the Army was not significantly correlated with job satisfaction in bivariate analyses and the significant beta in regression may be explained by the high correlations between this variable and Age and Income. Tabachnick and Fidell (1989) note that when IVs are correlated with each other, correlations and regression coefficients can be misleading. Sometimes a large regression coefficient does not directly predict the DV, but it predicts the DV well after another IV suppresses irrelevant variance.

As expected from correlation analysis, increased negative affect contributed to decreased job satisfaction. Once again this effect was partially mediated by structural variables at step two and by climate components at step three. Consequently negative affect had an individual impact on job satisfaction but partially to the extent that it resulted in perceptions of a highly formalised and centralised work environment and to a certain extent a relatively negative psychological climate. I/O membership was not significantly related to job satisfaction in multivariate analyses, reflecting the bivariate findings. Thus, non-Maori, longer servers and those reporting higher negative affect had lower job satisfaction than their counterparts when controlling for other variables related to job satisfaction.

Of the four structural variables, job codification, hierarchy of authority and index of participation remained significant predictors of job satisfaction levels at step three. All three appear to be mediated by the addition of climate components such that they impact on job satisfaction but this may be partially due to the psychological climate engendered by perceptions of the formalisation and centralisation of the Army. Rule observation appears to have little impact on job satisfaction when personal characteristics were controlled for and what little relationship existed, was

consequently mediated by the addition of climate components to the equation.

All four climate variables were significantly related to job satisfaction in bivariate analyses, however, when controlling for personal characteristics and organisational structure only three of these variables were significant contributors of job satisfaction levels at step three. Workgroup cooperation, friendliness and warmth failed to reach significance.

Summary

Hypothesis 4 was not supported. Age and rank were not directly related to job satisfaction when controlling for other study variables. Tenure was the strongest predictor of job satisfaction in the personal characteristics block of variables although contrary to predictions, longer tenure was associated with dissatisfaction. Hypothesis 5 was supported in that having a negative disposition lead to dissatisfaction, and this effect was greatly mediated by structural and climate variables. Hypothesis 6 was supported with high formalisation and centralisation related to low job satisfaction.

Having a challenging, important job which maximises personal control, which involves little conflict and pressure, and having skilled leaders, are also important contributors to satisfaction with one's job, generally supporting hypothesis 8. All three blocks of variables contributed a large proportion of the total explained variance in job satisfaction.

Psychological Well-being

Hierarchical regression analysis was also used to evaluate the contribution of each block of variables in explaining levels of psychological well-being. The steps were the same as for the previous analysis except in this instance job satisfaction was entered on a fourth step and self rated health on a fifth step. Results are presented in Table 20. R was significantly different from zero at the end of each step. At step one, personal characteristics explained 23% of variance (adjusted R^2) in psychological well-being scores, $F(9,395) = 14.57$, $p<.001$. The addition of the other blocks of variables added a further 13% to total variance explained. The structural variables

Table 20

Hierarchical multiple regression of personal characteristics, formalisation, centralisation, climate components, job satisfaction and self rated health on psychological well-being showing standardised regression coefficients, R, R^2, Adjusted R^2 and R^2 change for all subjects (N=405).

	Steps				
Predictors	**1**	**2**	**3**	**4**	**5**
Personal characteristics					
Age	.225*	.171	.154	.124	.118
Income	.100	.021	.001	-.022	-.034
Time in the Army	-.361***	-.384***	-.316***	-.243**	-.218*
Negative Affect	-.445***	-.415***	-.341***	-.311***	-.301***
Rank	-.081	-.127*	-.091	-.084	-.094
I/O membership	.077	.074	.080	.073	.076
Ethnicity	-.104*	-.108*	-.118**	-.102*	-.108*
Education 1	.087	.076	.072	.068	.071
Education 2	.010	.020	.014	.027	.026
Structural variables					
Job Codification (Formalisation)		-.090	-.036	-.011	-.036
Rule Observation (Formalisation)		-.003	.042	.033	.018
Hierarchy of Authority (Centralisation)		-.047	.036	.056	.069
Index of Participation (Centralisation)		-.147*	-.069	-.045	-.070
Climate components					
Leadership facilitation and support			-.044	-.090	-.065
Job conflict and pressure			-.087	-.036	-.023
Job challenge, autonomy and importance			.262***	.188**	.189**
Workgroup cooperation, friendliness and warmth			.071	.077	.042
Job Satisfaction				.236***	.179**
Self Rated Health					.176***
R	0.50***	0.53***	0.58***	0.61***	0.66***
Total R^2	0.25	0.28	0.34	0.36	0.40
Adjusted R^2	0.23	0.25	0.31	0.34	0.36
R^2 change	0.25***	0.03**	0.06***	0.02***	0.03***

*p<.05, **p<.01, ***p<.001.

added a further 3% of unique variance, F(13,391) = 11.50, p<.001, the climate components a further 6% unique variance, F(17,387) = 11.96, p<.001, job satisfaction added a further 2% unique variance, F(18,386) = 12.45, p<.001, and self rated health added yet another 3% unique variance, F(19,385) = 13.07, p<.001. R^2 change was significant for each step of the analysis. At the end of step five, the full model explained 36% of variance (adjusted R^2)

In bivariate analysis, age was not significantly related to well-being, however at step one these two variables are positively related when controlling for other personal characteristics. This effect appears to have been largely mediated by the inclusion of the structural variables and gradually by the inclusion of other steps in the analysis. Time in the Army was not related to psychological well-being in bivariate analysis but was strongly related in multivariate analyses, although somewhat mediated by climate components, job satisfaction and self rated health. Again, the possibility of the high correlations between age, income and time in the Army may account for the different pattern of relationships between these variables and job satisfaction for bivariate and multivariate analyses.

Negative affect was strongly correlated with psychological well-being in bivariate statistics, so it was not surprising that it was the strongest predictor of psychological well being in regression analysis. Again this relationship was partly mediated by other steps in the analysis, such that although negative affect had a direct effect on well-being, some influence was related to the extent that negative affect resulted in negative perceptions of organisational structure, psychological climate, job satisfaction and ratings of health. When controlling for structural variables, rank became a significant predictor of well-being such that officers reported lower levels, however this effect was mediated by the final three steps in the analysis. I/O membership and education were not significantly related to well-being in bivariate analyses, and were not significant predictors at any step in multivariate analysis. Ethnicity remained a significant and stable predictor at all steps, with Maori reporting higher levels of well-being than non-Maori.

Given the moderate relationships between the structural variables and well-being in bivariate analyses, such that high formalisation and centralisation were related to poor well-being, the lack of association in regression analyses is surprising. Only Index of Participation showed significance, and only at step two. Once climate components were included this association becomes non-significant. Of the climate components, job challenge, autonomy and importance significantly predicted well-being at all steps, mediated to some respect by satisfaction with the job. Satisfaction with one's job was a strong predictor of psychological well-being although this was mediated to some extent by high self ratings of health.

Summary

Clearly the personal characteristics variables are responsible for a large part of the explained variance in psychological well-being, with the climate component Job challenge, autonomy and importance playing a lesser part. Job satisfaction also had a direct positive effect on psychological well-being as predicted (hypothesis 8), as did self rated health, but their contribution was small. Examination of the beta coefficients at step five shows that the strongest predictors of positive psychological well-being were low negative affect, shorter tenure in the Army, having a challenging and satisfying job, perceiving one's health as good and being Maori.

Self Rated Health

Hierarchical regression analysis was also used to evaluate the contribution of each block of variables in explaining levels of self rated health. The steps were the same as for the previous analysis except in this instance psychological well-being was entered on the fifth step. Results are presented in Table 21. R was significantly different from zero at the end of each step. At step one personal characteristics explained 8% (adjusted R^2) of total variance in self rated health scores, $F(9,395) = 3.99$, $p<.001$. At the second step with the addition of structural variables, a further 2% in explained variance was added, $F(13,391) = 3.19$, $p<.001$, although the change in R^2 was not significant. The climate components added a further 6% to total variance, $F(17,387) = 4.20$, $p<.001$. Job satisfaction and psychological well-being

Table 21
Hierarchical multiple regression of personal characteristics, formalisation, centralisation, climate components, job satisfaction and psychological well-being on self rated health showing standardised regression coefficients, R, R^2, Adjusted R^2 and R^2 change for all subjects (N=405).

	Steps				
Predictors	**1**	**2**	**3**	**4**	**5**
Personal characteristics					
Age	.050	.064	.078	.037	.008
Income	.099	.1118	.099	.070	.075
Time in the Army	-.279**	-.296**	-.246*	-.146	-.091
Negative Affect	-.213***	-.200***	-.101	-.060	.009
Rank	.015	-.005	.049	.059	.078
I/O membership	-.028	-.015	-.003	-.014	-.030
Ethnicity	.057	.039	.014	.038	.060
Education 1	.005	.007	.014	-.020	-.035
Education 2	-.006	-.007	-.015	.002	-.003
Structural variables					
Job Codification (Formalisation)		.066	.105	.140*	.143**
Rule Observation (Formalisation)		.041	.095	.083	.076
Hierarchy of Authority (Centralisation)		-.149*	-.094	-.067	-.079
Index of Participation (Centralisation)		.033	.103	.136*	.146*
Climate components					
Leadership facilitation and support			-.075	-.138*	-.118
Job conflict and pressure			-.143*	-.072	-.064
Job challenge, autonomy and importance			.100	-.001	-.042
Workgroup cooperation, friendliness and warmth			.189**	.198***	.180**
Job Satisfaction				.324***	.271***
Psychological Well-being					.223***
R	0.28***	0.31***	0.39***	0.45***	0.48***
Total R^2	0.08	0.10	0.16	0.20	0.23
Adjusted R^2	0.06	0.07	0.12	0.16	0.19
R^2 change	0.08***	0.02	0.06***	0.04***	0.03***

*p<.05, **p<.01, ***p<.001.

subsequently added 4% ($\underline{F}(18,386) = 5.33$, $p<.001$) and 3% ($\underline{F}(19,385) = 6.07$, $p<.001$) respectively to the total explained variance. The full model explained 19% (adjusted R^2) of total variance in self rated health.

At steps one and two, time in the Army and negative affect appeared to contribute to self rated health, however these associations were largely mediated firstly by climate components and then job satisfaction and psychological well-being. This is not surprising, given that in previous analyses, both time in the Army and negative affect variables were significant predictors of job satisfaction and psychological well-being. Other personal characteristic variables were not significantly related to self rated health at any steps. Age, rank and I/O membership were all related to self rated health in bivariate analyses, such that older personnel, non-officers and occupational members reported poorer ratings of health. These relationships were not apparent when controlling for other variables. Ethnicity and education were not related to self rated health in bivariate analyses and were not significant predictors at any step in multivariate analyses.

Of the structural variables, only hierarchy of authority was significantly related to self rated health in bivariate analysis such that higher centralisation was related to lower ratings. This variable was significant in step two but appeared to be mediated largely by climate components. The relationships between two of the structural variables (job codification and index of participation) and self rated health increased both in magnitude and significance at step four of the analysis. This might suggest that job satisfaction acts as a suppressor variable on the relationship between these two IVs and the DV (Tabachnick and Fidell, 1989). In bivariate analyses, all climate components were significantly related to self rated health, however in multivariate analysis only the workgroup cooperation, friendliness and warmth component remained consistently significant across steps, partially mediated by psychological well-being. Job satisfaction was also partially mediated by psychological well-being.

Summary

The personal characteristic variables were responsible for the largest part of the

explained variance in self rated health, however, the effects of these variables were mediated through later steps in the analysis. The structural variables added little to explained variance. The climate component block of variables added somewhat to explained variance. Job satisfaction was positively associated with self rated health as predicted (hypothesis 8) as was psychological well-being, however their contributions were small. Examination of the beta coefficients at step five shows that the strongest predictors of high self rated health were satisfaction with one's job, positive psychological well-being, perceptions of a warm, friendly and cooperative workgroup, and surprisingly, a structure where rules and standards were formalised.

I/O membership was not significantly related to either job satisfaction, psychological well-being or self rated health at any stages of analyses.

CHAPTER SEVEN

Study Two: Ex-Army Personnel

Contents

7.1 Introduction

This section provides a brief overview of study two, summarising relevant information from the previous study, the literature review and research objectives.

In study one, a model proposing a process by which perceptions about work environments are related to mental and physical well-being was applied to a military situation. Kasl (1981) has noted that stronger inferences can be made about differential health outcomes when researchers concentrate on fewer occupational settings. The military environment provides an occupational setting where recruits are exposed to similar training, a similar organisational culture (Bruhns, 1991) and a similar social environment. However, it was shown in study one, that there is also a structural differentiation within the Army supporting Moskos's (1977) model of institutional/occupational military organisation. For ex-Army personnel it can be argued that individuals discharged from an occupational oriented corps, will be better able to adapt to civilian roles. In addition, chapter five discussed the possible advantages military experience is thought to confer on employment prospects of ex-Army personnel. The present study investigates post-service employment status based on I/O membership in the Army, military experience and training initiatives. Post-service adjustment is further investigated by assessing job satisfaction and health outcomes differentiated by I/O membership in the Army.

The structural institutional/occupational differentiation in the Army provided a framework to examine differences in perceived work environments (and subsequent health outcomes), while the underlying occupational and social milieu remained constant. In study one, support was found for the existence of I/O modalities in the New Zealand Army. In addition, these modalities resulted in distinctly different perceptions of organisational structure, and to a certain extent psychological climate. It was found that individuals perceptions about their work environment contributed substantially to their affective response to that environment, but to a much lesser extent to their mental and physical well-being.

The present study examines these relationships and applies the same model to

civilians, albeit "ex-military civilians", where it is expected that these relationships will be less detectable, due to a wide array of civilian occupational settings. The structure of these occupational settings are thought to parallel Moskos's model of military organisation. For instance, there will some organisations that rely on a mechanistic form of structure, where procedures are highly formalised and decision making is highly centralised. Conversely there will some organisations that will operate within an organic structure, where procedures will be less formalised and decision making will be diversified. There is evidence that organisational size and occupational groupings are related to individuals' perceptions of organisational environments (e.g. Dastmalchian, 1986; Fletcher & Payne, 1982; Kozlowski & Hults, 1987; Martin & Glisson, 1989; Payne & Pugh, 1976; Rose, 1987; Travers & Cooper, 1993). A goal of the present study is to determine if distinctions can be made between mechanistic and organic types of organisations based on organisational size and occupational settings and assess the impact of that differentiation on climate and outcome variables.

Chapter five discussed the issue of the possible psychosocial benefits of involvement in the military environment both at the time of employment in the military and in the transition from military to civilian occupational settings. The present study provides the opportunity to investigate the validity of this assumption with regard to ratings of job satisfaction and the possible differential mental and physical health of military and ex-military personnel.

The main objective of the present research is to investigate whether Moskos's Institutional/Occupational model of military organisation is maintained in post-service adjustment. A further objective is to investigate the connections between individuals, their perceptions of organisational structure and work attributes (climate), and the effects of these perceptions on job satisfaction and mental and physical health outcomes. This will be undertaken in the context of organisations that vary in size and within a diverse range of occupational groupings. These organisations and occupational groupings may be perceived as either mechanistic or organic in structure, generating distinct organisational climates with differential consequences for job satisfaction and subsequent mental and physical health indicators. In addition, the

present research attempts to investigate the beneficial effects of the military experience for both current and ex-Army personnel.

The following section outlines specific hypotheses and research goals.

7.2 Hypotheses

7.2.1 Factors contributing to post-discharge Employment Status and Adjustment

The central theme of the I/O model suggests that some sections of the military are very institutional in nature where others have an orientation similar to civilian organisations. In study one, organisational data was used to classify corps as either institutional or occupational. In the present study, ex-Army personnel were categorised as institutional or occupational based on the corps from which they were discharged. It was predicted that those individuals discharged from corps classified as occupational would adjust more readily to civilian life. This will be reflected in the higher likelihood of being in paid employment, higher job satisfaction and higher psychological well-being and self rated health compared to those individuals from institutional corps.

It is a common perception that military experience provides skills beneficial to civilian employment (Gade et al., 1991; Fredland & Little, 1983; Barber, 1972). As indicators of military experience, respondent's previous rank and length of time in the Army were measured. It was hypothesised that those with longer tenure in the Army, due to their increased opportunities for military training, and those of higher rank, due to their supervisory training and experience, would be more likely to be in paid employment.

In addition, there is evidence that those who participated in education or training initiatives while in the military report greater likelihood of post-service full-time employment (Gade et al., 1991). In the present study a number of questions about "transitional" processes were asked. For instance, respondents were asked if they had participated in training prior to leaving the Army, and/or after their discharge. It was hypothesised that those who participated in training either prior to leaving the Army and/or on discharge were more likely to be in paid employment.

There is considerable research to illustrate the deleterious effects of unemployment on both mental and physical health (e.g. Fleming, Baum, Reddy & Gatchel, 1984; Fryer & Payne, 1986; Kasl, Gore & Cobb, 1975; Jenkins, 1991; Macky & Haines, 1982).

In addition, those on low incomes (e.g. students, beneficiaries) are also likely to suffer from higher rates of mental and physical illness (e.g. Dooley & Catalano, 1980; Marmot, Kogevinas & Elston, 1987; Syme & Berkman, 1976). It is hypothesised that those in paid employment will have better mental and physical health than those not in paid employment.

7.2.2 Perceptions of Organisational Structure as a function of size and occupation

A goal of the present study was to determine if distinctions could be made between mechanistic and organic types of organisations based on organisational size and occupational groupings, and consequently assess the impact of that differentiation on climate and outcome variables.

As noted earlier, some jobs may encourage more formalisation and centralisation than others (pg. 41). For instance, very routine work such as assembly work is responsive to formalisation, where as relatively professionalised work, such as academia is relatively unstructured. In the present study it was expected that those in occupations where work was routine would perceive their work environments as more structured and formalised than those in more professionalised occupations.

In addition, it has been noted, with the exception of public sector organisations, that the relationship between size and structure is unclear (chapter two), however, larger organisations tend to be associated with high degree of formalisation and more decentralised decision making (see Martin & Glisson, 1989). A research goal of the present study was to test whether measures of formalisation and centralisation could differentiate between organisations of different size.

7.2.3 Organisational Climate

If the research goals are supported with regard to mechanistic and organic structures, then it is predicted that different organisational climates will also be generated due to occupational and organisational type. It is argued that as psychological climate components have been found to be invariant over a number of occupational settings (James & Sells, 1981) and that individual scores of people doing similar tasks and

having undergone similar training have been successfully aggregated to represent sub-organisational climates (Jones & James, 1979), then it would be appropriate to assess whether these assumptions hold for individuals performing similar jobs in *different* organisations. Adams, Laker and Hulin (1977, cited in Jones and James, 1979) note that it should be possible to aggregate the perceptions of individuals who work in different groups but have highly similar jobs.

Organisational size has rarely been related to climate. Given the evidence for relationships between size and other organisational characteristics such as structure, the present study assesses whether individual psychological climate scores can be aggregated across types of organisations, determined by relative size, to describe climates inherent to organisational types.

7.2.4 Factors Contributing to Job Satisfaction, Psychological Well-being and Self Rated Health

Hypotheses and research questions in this section are the same as those proposed for the Army sample reported on pages 112 to 114, and summarised below, with the exception of occupational level (rank in Army) which was not measured in the present sample.

7.2.5 Comparisons Between Current Army and Ex-Army Samples

Study one found that current personnels' perceptions of organisational structure differed across institutional and occupational groupings, with the occupational group perceiving the Army as less formalised and centralised. Given, the premise of the Moskos (1977) model that the occupational trend in the military is a reflection of the move to a more civilian oriented structure, it is argued that ex-Army personnel will view civilian organisational structure as less formalised and centralised than those in the Army overall, however, perceptions will be closer to the occupational group than the institutional group.

There is evidence to suggest that military personnel report lower job satisfaction than civilian individuals (e.g. Blair & Phillips, 1983; Fredland & Little, 1983; Woodruff &

Conway, 1990). Accordingly, it was predicted that Army personnel will have lower job satisfaction. There is little research on the differential mental and physical health of military and civilian samples. A research goal is to assess whether these two groups differ on health outcomes, and if so, whether differences could be accounted for by differences in work environment perceptions. In addition, there is considerable agreement in the literature of the importance of coping in the stressor-strain relationship (Dewe et al., 1993; Edwards, 1988) and it has been suggested that social support is an important interpersonal factor in the work environment (Sutherland & Cooper, 1988), which may be related to coping (Cooper & Payne, 1991; Thoits, 1986). A further research goal is to investigate the role of interpersonal resources (e.g. social support and coping) on differential health outcomes for the two samples.

7.2.6 Summary of Hypotheses

Factors contributing to post-discharge employment status and adjustment

(1) Individuals discharged from corps classified as occupational will; be more likely to be in paid employment; have higher ratings of job satisfaction, psychological well-being and self rated health than those individuals discharged from institutional corps.

(2) Individuals with longer tenure in the Army and those of higher rank will be more likely to be in paid employment.

(3) Individuals who participated in education or training for a civilian career prior to leaving the Army, and/or after discharge from the Army, will be more likely to be in paid employment.

(4) Those in paid employment will report higher ratings of psychological well-being and self-rated health than those not in paid employment.

Perceptions of organisational structure as a function of size and occupation

(5) Those in routine work will perceive their work environments as more structured and formalised than those in more professionalised work e.g. elementary occupations will perceive the work environment as more structured and formalised than legislators, administrators and managers.

(6) Larger organisations will be perceived as more formalised and less centralised than smaller organisations.

Organisational Climate

(7) Different organisational climates will be generated due to occupational groupings and organisational size.

Factors contributing to job satisfaction, psychological well-being and self rated health

(8) Age and tenure will be positively correlated with job satisfaction, although tenure will be the strongest predictor.

(9) Negative affect will be negatively related to job satisfaction however this effect will be largely mediated by organisational structure and climate.

(10) Those who perceive their work environment as formalised and centralised will report lower levels of satisfaction.

(11) Job satisfaction will be higher for individuals who perceive aspects of their work environment (psychological climate) as positive.

(12) Job satisfaction will be positively related to psychological well-being and self rated health.

A research goal is to assess how much perceptions of organisational structure and psychological climate add individually and additively to the explanation of job satisfaction over and above those explained by personal characteristics. Additionally, the relative contribution of personal characteristics, organisational structure and climate to the variance in scores on psychological well-being and self rated health will be assessed.

Comparisons Between Current Army and Ex-Army Samples

(13) Ex-Army personnel will perceive their work environment as less formalised and centralised than the total Army sample view the military environment. However when compared to Army combat and support groups, ex-Army perceptions of formalisation and centralisation will more closely resemble the

support group than the combat group.

(14) Army personnel will have lower job satisfaction, poorer mental health and better physical health than civilians.

A research goal is to assess the differences in work environment perceptions and interpersonal resources in both samples that may account for these differences in outcome variables.

7.3 Method

7.3.1 Design

Data was collected by crossectional survey method. Survey materials were sourced from a number of areas, including previous organisational, occupational and health research literature.

7.3.2 Subjects

The sample was obtained with the help of the New Zealand Defence Force, who provided a list of ex-service personnel who had left the New Zealand Army between January 1990 and March 1993. The list contained 915 names and a number of possible contact addresses for each individual: release address (RA), primary next of kin address (PNA), alternative next of kin address (ANA), and casualty address (CA - additional contact if individual is injured). This list provided the starting point for the selection of the present sample. Two individuals listed insufficient addresses and were deleted from the list. The questionnaire, together with a covering letter, consent form and information sheet were sent to 913 ex-service personnel in June 1993. Where possible, questionnaires were sent to release addresses, if this was not available, alternative addresses were used in this order, given their availability: PNA, ANA, CA. In September 1993 a reminder letter was sent to 528 ex-service personnel who had not responded. By October 1993, 443 questionnaires had not been returned, 206 questionnaires had been returned unopened due to incorrect addresses and no further alternative addresses, 20 individuals declined to participate, and 9 were out of the country and unable to be contacted. A total of 235 questionnaires were returned completed, giving a response rate of 28%. This poor response rate was attributed to the inadequacy of information personnel provided the Army on discharge. A large number of questionnaires could not be delivered due to insufficient postal information. Gade (1991) report that in a similar multiple mailing to U.S. veterans (1981 to 1984) they obtained an overall response rate of 50%. However, they report that this was higher than that obtained for most similar surveys of all-volunteer-era veterans who had left the Army. For example, the Veterans Attitude Tracking Study, the only other nationally representative sample of all-volunteer era veterans in the U.S., had an overall response rate of only 13% (Arbor, Inc., 1984, cited in Gade et al., 1991).

7.3.3 Measures

Biographical Information: Information was sought on participants' age, gender, marital status, ethnicity, education, and income. Questions were modelled on the 1991 New Zealand Census of Population and Dwellings (Department of Statistics, 1993). Participants were asked to provide their total length of service in the Regular Army, their rank, trade, corps, unit, terminal posting and annual pre-discharge Army income. Respondents were asked their reasons for leaving the Army along with a number of questions regarding training prior to and after leaving the Army. Respondents were also asked about their present employment status i.e. hours worked, type of job, size of employing organisation, income, number of jobs since leaving the Army and time spent employed since leaving the Army.

Other Measures

The following measures were also included in the questionnaire and are described in full in the method section of Study One (pg. 116): Social Support; Coping; Negative Affect; Psychological Well-being; Self Rated Health; Organisational Structure; Job Satisfaction and Psychological Climate. Climate components were summed as in study one (pg. 127). Alpha reliabilities for these components were: Leader facilitation and support, .83; Job conflict and pressure, .60; Job challenge autonomy and importance, .77; and Workgroup cooperation, friendliness and warmth, .80.

The complete ex-Army questionnaire is provided in appendix five.

7.4 Results

7.4.1 Data Screening

Prior to the main analyses, data was screened for accuracy of data entry, missing values and fit between variable distributions and assumptions of multivariate analysis. Negative affect was severely positively skewed and logarithmic transformation reduced this considerably. Index of participation and self rated health both benefited greatly from reflection and square root transformation, reducing severe negative skewness. Rule observation was moderately positively skewed however this was considerably improved by square root transformation. Where descriptive statistics for self rated health and index of participation are provided, untransformed means and standard deviations are reported for ease of interpretation. When negatively skewed variables are reflected before transformation, interpretation of scores becomes counter-intuitive. Any tests of significance are undertaken on transformed variables and reported as such. In the case of correlations, signs have been reversed, with the exception of the correlation between index of participation and self rated health, where reflection of both variables makes the sign interpretable.

Checks for multivariate outliers revealed no cases that met the use of $p<.001$ criterion for Mahalanobis distances. All 235 cases were retained for further analyses. All remaining variables were retained as none had less than five percent missing cases and all satisfactorily met multivariate assumptions (Tabachnick & Fidell, 1989).

7.4.2 Sample Description

Detailed biographical information for the sample is provided in Table 22. The small number of females is a reflection of their overall numbers in the Army (9%). Age ranged from 18 to 54 years with a mean age of (30 years, SD = 7.9 years). The majority of subjects were married or in a defacto relationship (53.6%), 36.6% had never been married, while 8.5% were either separated, divorced or widowed. The proportion of Maori subjects (15.7%) was higher than the proportion of Maori in the New Zealand population (9.2%) (Department of Statistics, 1993). The majority of subjects had at least some form of school qualification, with 19.6% having no school qualifications.

Table 22
Summary of biographical information for ex-Army personnel (N=235).

	Number of Respondents	Percentage of Respondents
Gender		
Females	27	11.5
Males	205	87.2
Age (Years)		
18-20	13	5.5
21-25	72	31.0
26-30	49	20.9
31-35	19	8.1
36-40	45	19.1
≥ 40	28	11.9
Marital Status		
Never Married	86	36.6
Married/Defacto	126	53.6
Separated/Divorced/Widowed	20	8.5
Ethnicity		
Maori	37	15.7
Non-Maori	194	82.6
Educational Qualification		
No School qualification	46	19.6
School Certificate passes	66	28.1
University Entrance +	34	14.5
Trade & Professional qualification	69	29.4
University qualification	16	6.8

Information on military experience is provided in Table 23. Thirty seven percent of respondents had been in the Army for 5 years or less. Only 6% had left between 11 and 15 years into the job, and only 6% of respondents stayed longer than 20 years. Rank distribution is similar to that of the Army, although it would be unusual to encounter officer cadets leaving before completing their officer training. The distribution of tradegroups does not reflect that of the Army. There were nineteen listed last postings, however the majority were from Linton (20.4%), Waiouru (15.7%), Trentham (14.5%), Burnham (23.0%) and Papakura (11.5%) Army camps.

Respondents also provided information regarding the transition from Army to civilian life. This information is summarised in Table 24. Nearly fifty three percent gave career/job change as a reason for leaving the Army. More specifically, this category included: lack of promotional prospects; boredom; low job satisfaction; demotion; offer of a civilian job; job stagnation, repetitiveness of job. Financial reasons for leaving cited by 25% of respondents included: effects of possible changes to superannuation; lack of pay increases and low pay; better pay in civilian jobs; lack of job opportunities for spouse; opportunity to take lump sum superannuation; decrease in funding for further training. Personal/family reasons were cited by approximately 33% of respondents and included: the need to establish better relationships with family; childrens' health; to provide a better environment for children; separation; pregnancy. Health and medical reasons for leaving cited by 8% of subjects included: poor fitness; too many injuries; alcohol abuse; heart attack; stress; medical downgrade.

The majority of respondents also cited reasons other than these for leaving the Army. Eighteen percent left because their terminal date for twenty years service had arrived. Fifteen percent left because they disliked the military environment. Other reasons given included; wish to further education; wanting to travel overseas; dislike of rationalisation (cost cutting); sexual discrimination; personality clash with superior; tired of being posted; and aversion to United Nations deployment (e.g. Angola, Somalia, Cambodia). Over a third of respondents had vague plans for their career after their discharge from the Army, but nearly 60% had looked for employment before being discharged. Of the 24% who participated in training for a civilian career

Table 23
Summary of military experience for ex-Army personnel (N=235).

	Number of Respondents	Percentage of Respondents
Time In the Army (years)		
≤ 5	87	37.0
6 - 10	51	21.7
11 - 15	14	6.0
16 - 20	58	24.7
> 20	15	6.4
Rank		
Private	72	30.6
Corporal, Lance Corporal	68	28.9
Sergeant, Senior Sergeant	28	11.9
Warrant Officers	35	14.9
Officer Cadets	2	0.9
Second Lieutenant/Lieutenant	7	3.0
Captain	9	3.8
Major	8	3.4
Lieutenant Colonel +	3	1.3
Tradegroup		
Administration and Specialist	15	6.4
Clerical	42	17.9
Combat	34	14.5
Communications	12	5.1
Construction - Driver	18	7.7
Food - Health	20	8.5
Mechanical	27	11.5
Skilled Technical/Electronics	9	3.8
Officers and Instructors	58	24.7
Posting		
Linton	48	20.4
Waiouru	37	15.7
Trentham	34	14.5
Burnham	54	23.0
Wellington	10	4.3
Papakura	27	11.5
Other	20	8.5

Table 24
Summary of transition information for ex-Army personnel (N=235).

	Number of Respondents	Percentage of Respondents
Reasons for Leaving Army		
Career/Job Change	124	52.8
Financial	59	25.1
Personal/Family	78	33.2
Health/Medical	19	8.1
Other	107	45.5
Career plans before discharge		
Very Definite	84	35.7
Not sure	61	26.0
Vague	87	37.0
Looked for employment prior to discharge		
Yes	139	59.1
No	92	39.1
Participation in training/education prior to discharge		
Yes	56	23.8
No	175	74.5
Participation in training/education after discharge		
Yes	42	17.9
No	189	80.4

prior to discharge, 46% received voluntary study assistance or voluntary resettlement study leave from the Army. Forty eight percent undertook short courses, such as secretarial, accounting practice, or first aid courses. Other training/education undertaken prior to leaving the Army included: work experience; correspondence courses; and extramural university papers.

On leaving the Army, 18% of respondents (42) participated in further training. This included: computer skills training; diplomas in sports/recreation/tourism; short-term small business courseß voluntary work; police training; pilot instruction; polytechnic courses; university study; and bridging courses for further study e.g. maths.
A number of respondents still utilised military facilities such as the mess and sporting facilities (35%).

Descriptive information with regard to post-Army employment is summarised in Table 25. The majority of respondents were in paid employment, although a relatively high number were not (25.5%). Of these 64 respondents, 10.2% described themselves as unemployed (slightly above the 1992/93 New Zealand average of 10.1%, Statistics New Zealand, 1994), 1.7% were retired, 10.6% were students, 2.6% were beneficiaries (other than unemployment) and 1.7% referred to their domestic activities e.g. mother, housewife, househusband etc.

Some 15.7% of respondents earned less than $10,000. Another 12.8% earned between $10,000 and $21,000. These figures are an indication of the group of respondents who were not in paid employment. Nearly 29% of respondents earned between $21,000 and $30,000 per anum with a further 25.6% earning above $30,000.

Of those in paid employment the majority worked at least 31 hours per week, with a considerable proportion working 50 or more hours per week (31%). Occupational categories were based on New Zealand Standard Classification of Occupations used in the New Zealand census (Department of Statistics, 1990). The greatest proportion of respondents were engaged in plant and machine operations and assembly (11.1%),

Table 25
Summary of post-Army employment information for ex-Army personnel (N=235).

	Number of Respondents	Percentage of Respondents
Employment Status		
In paid employment	171	74.5
Not in paid employment	64	25.5
Annual Income		
< $10,000	37	15.7
$10,000 - $15,000	15	6.4
$16,000 - $20,000	15	6.4
$21,000 - $25,000	36	15.3
$26,000 - $30,000	32	13.6
$31,000 - $35,000	17	7.2
$36,000 - $40,000	16	6.8
$41,000 - $45,000	7	3.0
$45,000 - $50,000	6	2.6
≥ $51,000	14	6.0
Hours worked per week (on average)*		
< 20	7	4.1
20 to 30	18	10.5
31 to 40	55	32.2
41 to 49	33	19.3
50 to 59	30	17.5
≥ 60	23	13.4
Occupational Categories*		
Legislators, administrators & managers	20	8.5
Professionals	9	3.8
Technicians & associated professionals	21	8.9
Clerks	15	6.4
Service & sales workers	33	14.0
Agriculture & fisheries workers	12	5.1
Trades workers	20	8.5
Plant & machine operators & assemblers	26	11.1
Elementary occupations	9	3.8
Time in Job (months)*		
1 to 3	37	21.6
4 to 6	31	18.1
7 to 9	26	15.2
10 to 12	27	15.8
13 to 24	32	18.7
≥ 25	17	9.9

Table 25 continued...

	Number of Respondents	Percentage of Respondents
Total No. of Jobs Since Discharge*		
1	96	56.1
2	40	23.4
3	16	9.4
4	7	4.1
≥ 5	9	5.3
% of Time Employed Since Discharge*		
≤ 20%	3	1.8
21 to 30%	2	1.2
31 to 40%	10	5.8
41 to 50%	10	5.8
51 to 60%	6	3.5
61 to 70%	10	5.8
71 to 80%	26	15.2
81 to 90%	38	22.2
91 to 100%	48	28.1
Relationship of Present Job to Army Career*		
No relationship	66	38.6
Some relationship	59	34.5
Closely related	27	11.5
Very closely related	18	10.5
Type of Organisation Employed by*		
Large international	30	17.5
Large national	46	26.9
Large local	20	11.7
Medium local	20	11.7
Small local	45	26.3
Sole charge	1	0.6
Size of Workplace (no. people)*		
≤ 5	42	24.6
6 to 9	25	14.6
10 to 49	68	39.8
50 to 99	11	6.4
≥ 100	11	6.4

* Those in paid employment only (N=171)

or service and sales work (14.0%). Time spent in their present job ranged for respondents from 1 to 36 months. The majority of respondents had had only one job since their severance date from the Army, with most having three or less (89%). Additionally, the majority of those now in paid employment had been employed for at least 70% of the time since leaving the Army (65.5%).

The majority of respondents reported that their jobs were in some way related to their previous Army career (60.8%), although a significant number reported no relationship between their current job and their Army work (38.6%).

A large proportion of respondents reported being employed at workplaces with 10 to 49 workers (39.8%). The numbers in the two large groups, 50 to 99 (6.4%) and 100+ (6.4%), are small compared to the total New Zealand working population in 1991 (11.1% and 25.3% respectively) (Department of Statistics, 1992). This may be due to the nature of the question asked. For instance, although nearly 45% of respondents reported working for large national or international organisations, only 13% reported the size of their workplace as comprising more than 50 people. Respondents almost certainly answered this question with regard to their immediate work environment, rather than the number of people employed by the total organisation.

Analyses

Analyses were undertaken in 5 stages. First, factors contributing to post-discharge employment status were investigated, focusing on the post-service adjustment of individuals according to their I/O membership in the Army. Second, perceived organisational structure was assessed across occupational categories and organisational size in an attempt to differentiate between mechanistic and organic structures. Third, analyses were undertaken to assess whether aggregation of climate scores to describe collective climates of occupational categories and organisations of different size was justified. Fourth, factors contributing to job satisfaction, psychological well-being and self rated health were examined. Finally, comparisons were made between Army and ex-Army personnel.

Analyses involving age and job satisfaction were repeated using age squared and age cubed polynomial terms due to the possibility of a curvilinear relationship between the two variables (e.g. Kacmar & Ferris, 1989), however, as before these analyses revealed no differences with respect to the main analyses, no non-linear effects were detected and consequently these analyses are not reported.

7.4.3 Factors contributing to Post-Discharge Employment Status and Adjustment

Hierarchical regression analysis was used to evaluate the contribution of personal characteristics, military experience and transition variables in predicting post-discharge employment status. The dependent variable of employment status was dichotomous; in paid employment=1, and not in paid employment=2. As noted earlier, binary coding provides interpretable mean differences as regression coefficients (Jaccard et al., 1990). Rank, ethnicity and education were also recoded for the purposes of regression analysis (details are provided in study one, pg. 139)[14]. The effects of personal characteristic variables were estimated in the first step. Next, the effects of military experience variables were estimated after controlling for personal characteristics. Finally, the effects of transition variables, e.g. training, education, were then estimated after controlling for the effects of the previous two blocks of variables. The results of this analysis are provided in Table 26.

At step one, personal characteristics variables alone explained 5% of variance (adjusted R^2) in employment status, $F(6,192) = 2.55$, $p<.05$. After step two, with the inclusion of the military experience variables, total explained variance in employment status fell to 3% (adjusted R^2), $F(9, 189) = 1.76$, $p=.08$. Change in R^2 was not significant, $F(9,189) = .23$, $p=.87$. After step three, with the transition variables entered, total variance explained in employment status increased to 11% (adjusted R^2), $F(14,184) = 2.80$, $p<.001$. The transition variables accounted for

[14] Once again the number of women in the sample was small, 27, representing a dichotomous split of 11.5% women and 87.2% men for the full sample. As Tabachnick and Fidell (1989) recommend at least a 10/90% split for dichotomous variables, sex was included only in analyses where this percentage was maintained.

Table 26
Hierarchical multiple regression of personal characteristics, military experience and transition variables on employment status showing standardised regression coefficients, R, R^2, Adjusted R^2 and R^2 change for ex-Army sample (N=202).

	Steps		
Predictors	**1**	**2**	**3**
Personal Characteristics			
Age	-.141	-.096	.014
Education 1	-.070	-.067	-.046
Education 2	-.077	-.065	-.059
Ethnicity	-.043	-.035	-.019
Negative Affect	.050	.042	.040
Gender	.154*	.173*	.129
Military Experience			
Rank		-.045	-.047
Time in the Army		-.015	-.114
I/O membership		-.053	-.060
Transition Experience			
Time since discharge			-.191*
Looked for work pre-discharge			.180*
Career plans pre-discharge			.024
Pre-discharge training			.052
Post-discharge training			-.235***
R	.27*	.28	.42***
Total R^2	.07	.08	.18
Adjusted R^2	.05	.03	.11
R^2 change	.07*	.01	.10***

*p<.05, ***p<.001

10% unique variance when controlling for personal characteristics and military experience. The R^2 change after entering the transition variables was significant, $F(14,184) = 4.39$, $p<.001$.

Examining the betas, personal characteristics and military experience did not appear to predict post-Army employment status. Gender was significant at steps one and two such that more men were in paid employment than women but this effect was largely mediated by military experience. Of the transitional variables, time since discharge, looking for work prior to discharge and participation in post-discharge training appear to predict whether one engages in paid employment.

T-tests were undertaken to investigate whether I/O membership in the Army was related to other post-service adjustment variables. Job satisfaction, psychological well-being and self rated health did not differ across I/O membership: $t(138) = .48$, $p=.63$; $t(121.77) = 1.33$, $p=.18$; $t(226) = .43$, $p=.66$, respectively.

The means and standard deviations for psychological well-being and self rated health for those in paid employment and those not in paid employment are shown in Table 27. T-tests were used to examine the differences in group means on these two outcome variables across the two employment status groups. Those in paid employment reported significantly higher levels of psychological well-being than those not in paid employment, $t(231) = 2.53$, $p<.05$, and rated their health significantly higher, $t(230) = 2.36$, $p<.05$.

Summary

Hypothesis 1 was not supported. Individuals discharged from corps classified as occupational were not more likely to be in paid employment, and did not have higher ratings of job satisfaction, psychological well-being or self rated health.

Hypothesis 2 was not supported. Rank and time in the Army were not significant predictors of post-discharge employment status.

Table 27
Means and standard deviations for psychological well-being and self rated health across employment status (N=235).

	In Paid Employment (N=171)		Not in Paid Employment (N=64)		
	M	**SD**	**M**	**SD**	**t**
Psychological Well-being	64.51	14.13	59.11	15.36	*
Self Rated Health	5.36	1.18	4.87	1.55	*

*p<.05

Hypothesis 3 was partly supported in that post-discharge training was a predictor of post-discharge employment status, but only to the extent that participation in post-service training was more common in those who were not in paid employment, reflecting the large number in the latter group who classified themselves as students. Looking for work prior to discharge also predicted employment status, such that those who did look for work prior to discharge, were more likely to be in paid employment. Pre-discharge training and making career plans prior to discharge did not predict post discharge employment status. Not surprisingly, the longer a respondent had been out of the Army the more likely they were to be in paid employment. Hypothesis 4 was supported in that those in paid employment reported higher levels of well-being and rated their health more highly than those not in paid employment.

7.4.4 Perceptions of Organisational Structure as a function of size and occupation

Occupational categories and organisational size were assessed on structural variables in an attempt to differentiate between mechanistic and organic structures associated with particular occupations and organisations and to investigate the relationships between formalisation, centralisation and size.

First, oneway analyses of variance (ANOVA) were undertaken to test for

differences in organisational structure perceptions across the occupational categories. In addition Scheffe's ranges tests were undertaken for multiple comparisons among group means (Norusis, 1989). Only groups which had more than five cases after listwise deletion of missing data were retained for further analysis. Group six, 'agriculture and fisheries workers', was dropped from further analyses as only one case in this group with full data on the structural variables remained. It was expected that those in more routine work would perceive their work environments as more structured and formalised than those in more professionalised work. Means and standard deviations on the structural variables for the remaining eight occupational categories are presented in Table 28. Index of Participation was significantly different across occupational categories, $\underline{F}(7,102) = 8.44$, $p<.001$. Ranges tests indicated that group 1 (Legislators, administrators and managers), differed from all other groups apart from group 2 (Professionals) and group 3 (Technicians and associated professionals), such that they perceived their work environment as less structured and formalised than other groups, however, there were no other significant differences between occupational categories at the .05 level on Index of Participation. The three other structural variables did not differ significantly over occupational categories: Job Codification, $\underline{F}(7,103) = .83$, $p=.58$; Rule Observation, $\underline{F}(7,101) = 0.90$, $p=.52$; and Hierarchy of Authority, $\underline{F}(7,103) = 1.14$, $p=.34$.

Second, oneway analyses of variance (ANOVA) were undertaken to test for differences in organisational structure perceptions across organisational size. The last two categories, Small Local and Sole Charge were dropped from further analyses as a number of items on subsequent organisational characteristics scales were not considered appropriate or answerable for such small organisations. Means and standard deviations on the structural variables for the remaining four organisational types are presented in Table 29.

Oneway analyses of variance showed no significant differences in group means on structural variables across organisational types: Job codification, $\underline{F}(3,109) = 0.18$, $p=.90$; Rule Observation, $\underline{F}(3,107) = .63$, $p=.59$; Hierarchy of Authority, $\underline{F}(3,109) = 1.06$, $p=.37$; and Index of Participation, $\underline{F}(3,108) = 2.06$, $p=.11$.

Table 28
Means and standard deviations for Formalisation and Centralisation across occupational categories.

	Occupational Categories																
	1		2		3		4		5		7		8		9		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F
Formalistion																	
Job Codification	2.59	.53	2.54	.57	2.69	.49	2.84	.47	2.83	.59	2.74	.44	2.90	.81	2.77	.70	ns
Rule Observation	1.27	.27	1.44	.17	1.30	.34	1.26	.22	1.43	.30	1.36	.34	1.30	.36	1.31	.31	ns
Centralisation																	
Hierarchy of Authority	1.64	.86	2.06	.96	2.00	.58	1.69	.52	2.14	.80	2.14	.74	2.13	.91	2.31	1.06	ns
Index of Participation	2.27	1.24	4.04	.78	3.25	.91	4.04	.94	4.31	.91	4.05	1.28	4.40	.75	4.43	.77	**

**p<.001

1 = Legislators, administrators and managers
2 = Professionals
3 = Technicians & associated professionals
4 = Clerks
5 = Service and sales workers
7 = Trades workers
8 = Plant and machine operators and assemblers
9 = Elementary occupations

Table 29
Means and standard deviations for Formalisation and Centralisation across organisational types.

	Type of Organisation								
	Large Int.		Large Nat.		Large Local		Med. Local		
	M	SD	M	SD	M	SD	M	SD	F
Formalisation									
Job Codification	2.76	.65	2.80	.62	2.77	.57	2.68	.52	ns
Rule Observation	1.36	.36	1.36	.28	1.30	.32	1.25	.26	ns
Centralisation									
Hierarchy of Authority	1.81	.74	2.05	.87	2.22	.95	1.99	.69	ns
Index of Participation	3.91	.99	3.92	1.20	4.21	1.13	3.29	1.38	ns

ns Not significant.

The univariate data and ANOVA results offer no support for the suggestion that type of occupation or the size of organisation one is employed for differentiates between perceptions of organisational structure.

Summary

Hypothesis five was not supported. Formalisation and centralisation did not differentiate between occupational types and generally those in routine work did not perceive their work environments as more structured and formalised than those in more professionalised work. Those classified as legislators and other professionals perceived their work environment to be less centralised than most other groups, however this was the only significant difference between groups in perceptions of organisational structure.

Hypothesis 6 was not supported. Measures of formalisation and centralisation did not differentiate between organisations of different size. It was expected that larger organisations would be more formalised and centralised, however there were no significant differences across the four organisational types; Large international, Large national, large local, medium local.

7.4.5 Organisational Climate

Aggregation of Psychological Climate (PC) Scores

A focus of the present study was whether the type of occupation one has and/or the size of organisation one is employed by, generate particular perceptions about work characteristics. In this respect, individual scores on climate components were aggregated by occupational category and organisational size to provide descriptions of organisational climates (means were computed).

The appropriateness of these levels of aggregation were assessed on the basis of the three criteria used in Study One (pg. 133). First, between-group differences in PC perceptions were assessed by one-way analysis of variance (ANOVA) for each PC component across the occupational categories and organisational types shown in Table 25. The ANOVA results are presented in Table 30. Not one of the aggregated climate components generated a significant F across the occupational categories or organisational types.

The second criterion to be assessed with regard to aggregation was that of shared perceptions within groups. Intraclass correlations (ICC(1)) were computed from ANOVA results, using the formula provided by McNemar (1969, pg.322) and are presented in Table 30. These correlations were extremely low and ranged from .01 to .08.

The third criterion to be assessed was the reliability of mean scores across the groups. This was assessed by computing Spearman-Brown estimates of reliability based on intraclass correlations (ICC(2)) (e.g Guilford, 1954). The results of these analyses are presented in Table 30. These were also very low ranging from .00 to .58.

Summary

Hypothesis 7 was not supported. The three criteria used for assessing the appropriateness of aggregation of data to occupational and organisational types for individuals in separate organisations were not met. First, between group

Table 30
Analyses of agreement for organisational levels of aggregation for climate components.

Climate Component	Occupational Categories (N=8)					Organisational Type (N=4)				
	M	SD	F[a]	ICC(1)[b]	ICC(2)[c]	M	SD	F	ICC(1)	ICC(2)
1. Leader facilitation and support	.03	3.33	0.94	.01	.06	.08	3.27	0.39	.08	.00
2. Job conflict and pressure	.02	2.64	0.63	.05	.58	.01	2.64	1.18	.02	.15
3. Job challenge, authority & importance	-.12	2.99	1.73	.08	.42	-.14	3.03	1.38	.05	.27
4. Workgroup cooperation, friendliness and warmth	.03	3.18	0.94	.01	.07	.04	3.16	1.59	.07	.37

[a] *p<.05, **p<.01, and ***p<.001.
[b] Intraclass correlation coefficients.
[c] Spearman-Brown estimates of the reliability of the mean score based on intraclass correlations.

differences in climate perceptions were not found. F-ratios were extremely small and non-significant. Second, individuals within groups did not share climate perceptions. ICC(1) values were very low with none exceeding the median found elsewhere (James & Sells, 1981). Third, reliabilities of the aggregated scores were poor, ranging from .00 to .58. The results of these analyses provide no justification for aggregation of individual psychological climate scores to occupational and organisational types across different organisations. Data were consequently analysed at the individual level.

7.4.6 Factors contributing to Job Satisfaction, Psychological Well-being and Self Rated Health

Simple Intercorrelations

Simple intercorrelations among personal characteristics, structural, climate and outcome measures for those ex-Army personnel now in paid employment are provided in Table 31. Means and standard deviations for these variables across the discrete variables of ethnicity (Maori, Non-Maori), and education (no school qualifications, school qualifications, post-school qualifications) are shown in Table 32.

Structural Variables

Perceptions of a formalised and centralised workplace were generally higher for those with lower incomes and those with longer tenure. People high in negative affect reported less participation in decision-making practices. There were no significant differences in perceptions of structure across the three educational groups: Job Codification, $\underline{F}(2,80) = .34$, $p=.71$; Rule Observation, $\underline{F}(2,80) = 1.07$, $p=.35$; Hierarchy of Authority, $\underline{F}(2,80) = .53$, $p=.59$; and Index of Participation, $\underline{F}(2,80) = 1.44$, $p=.24$. None of the structural variables reached significance between Maori and non-Maori: Rule Observation, $\underline{t}(81) = 1.36$, $p=.18$; Job Codification, $\underline{t}(81) = .33$, $p=.74$; Hierarchy of Authority, $\underline{t}(81) = .35$, $p=.73$; and Index of Participation, $\underline{t}(81) = 1.84$, $p=.07$. All structure variables were significantly positively correlated with each other except job codification and index of participation which did not reach significance.

Table 31
Intercorrelations between personal charactersitics, structural, climate and outcome variables for ex-Army sample (N=83#).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age														
2 Income	.15													
3 Time in the Job (months)	-.07	-.03												
4 Negative Affect	-.43***	-.23*	-.09											
5 Job Codification (Formalisation)	.09	-.04	.26**	-.11										
6 Rule Observation (Formalisation)	.02	-.25**	.16	.08	.36***									
7 Hierarchy of Authority (Centralisation)	-.09	-.13	.34**	.17	.54***	.42***								
8 Index of Participation (Centralisation)	-.18	-.38***	.02	.31**	.15	.26**	.40***							
9 Leadership facilitation and support	-.08	.23*	-.26**	-.05	-.36**	-.29**	-.67***	-.48**						
10 Job conflict and pressure	-.06	-.16	.31**	.18	.25*	.46***	.55***	.19*	-.62***					
11 Job challenge, autonomy and importance	-.09	.35***	-.23*	-.05	-.37***	-.29**	-.55***	-.48**	.68***	-.44***				
12 Workgroup cooperation, friendliness and warmth	.00	.26**	-.15	-.14	-.22*	-.39***	-.48**	-.40***	.57***	-.55***	.54***			
13 Job Satisfaction	-.12	.35**	-.24*	-.05	-.34***	-.29**	-.58***	-.36***	.77***	-.62***	.80***	.52***		
14 Well-being	.37***	.26**	-.07	-.46***	-.03	.07	-.05	-.09	.05	-.16	.17	-.07	.14	
15 Self Rated Health	-.06	.23*	.19*	-.18*	.04	.03	.05	-.08	-.11	-.03	-.07	-.02	.10	.30**

*p<.05, **p<.01, ***p<.001
#Although the original sample for those in paid employment was 171, further analyses included only those employed in medium local to large international organisations as structure and climate questions were considered inappropriate for samll local and sole charge employees. Listwise deletion of missing data reduced the sample for regression to 83.

Table 32
Means and standard deviations for personal characteristic, structural, climate and outcome variables across education and ethnicity (N=83).

	Education							Ethnicity				
	No School Qualifications (N=18)		School Qualifications (N=32)		Post School Qualification (N=34)			Maori (N=14)		Non-Maori (N=71)		
	M	SD	M	SD	M	SD	F	M	SD	M	SD	t
1 Age	38.38	6.27	28.06	6.54	32.80	8.00	***	34.88	7.39	31.63	8.10	ns
2 Income ($)	28,888	9,596	28,913	12,690	40,324	26,930	*	33,186	12,856	33,497	21,077	ns
3 Time In Job (months)	15.72	9.16	13.00	10.14	9.42	7.31	*	12.57	7.26	12.09	9.50	ns
4 Negative Affect'	1.20	.16	1.28	.16	1.26	.14	ns	1.23	.17	1.26	.15	ns
5 Job Codification (Formalisation)	2.87	.63	2.72	.71	2.75	.51	ns	2.71	.75	2.77	.59	ns
6 Rule Observation (Formalisation)	1.39	.35	1.37	.32	1.28	.27	ns	1.44	.40	1.32	.29	ns
7 Hierarchy of Authority (Centralisation)	2.00	.91	2.14	.94	1.93	.74	ns	2.10	.92	2.01	.85	ns
8 Index of Participation (Centralisation)	3.92	.98	4.16	.95	3.57	1.31	ns	4.38	.65	3.77	1.19	ns
9 Leadership facilitation and support	-.93	2.96	.05	3.22	.26	3.19	ns	.33	3.23	-.16	3.15	ns
10 Job conflict and pressure	.77	2.30	.13	2.84	-.12	2.52	ns	.87	3.25	.03	2.45	ns
11 Job challenge, autonomy and importance	-1.32	3.85	-.54	2.73	.70	2.60	ns	-.53	3.51	-.15	2.95	ns
12 Workgroup cooperation, friendliness and warmth	-.57	3.81	-.48	3.09	.89	2.76	ns	-1.34	4.68	.32	2.74	ns
13 Job Satisfaction	68.17	16.95	72.38	15.55	77.42	13.00	ns	73.07	16.32	73.55	15.05	ns
14 Well-being	65.28	15.56	61.63	14.78	66.91	10.35	ns	68.21	17.12	63.77	12.57	ns
15 Self Rated Health	5.28	1.45	5.25	1.34	5,70	1.10	ns	4.86	1.56	5.55	1.09	ns

*p<.05, ***p<.001

Climate Components

There was no relationship between psychological climate and age or negative affect. Higher income and shorter tenure were both generally related to positive perceptions of work characteristics as measured by climate components. Educational groups did not differ significantly in their perceptions of their workplaces: Leadership facilitation and support, $F(2,80) = .87$, $p=.42$; Job conflict and pressure, $F(2,80) = .68$, $p=.51$; Job challenge, autonomy and importance, $F(2,80) = 3.03$, $p=.06$; and Workgroup cooperation, friendliness and support, $F(2,80) = 1.98$, $p=.14$. Nor did Maori and non-Maori differ on their perception of climate: Leader facilitation and support , $t(81) = .51$, $p=.60$; Job conflict and pressure, $t(81) = 1.10$, $p=.27$; Job challenge, autonomy and importance, $t(81) = .43$, $p=.67$; and Workgroup cooperation, friendliness and warmth, $t(14.86) = 1.28$, $p=.22$.

Structural variables related to climate components as expected in that work environments that were viewed as low in centralisation and formalisation were related to positive perceptions of work characteristics as measured by psychological climate. Climate components related to each other as would be expected in that all were significantly positively correlated with each other with the exception of the conflict component which not surprisingly was negatively correlated with the other positive climate components.

Outcome Variables

Job Satisfaction

Age and negative affect were not related to job satisfaction. Those on lower incomes and those with longer tenure reported lower job satisfaction. There were no significant differences in job satisfaction over educational or ethnic groups, $F(2,80) = 2.38$, $p=.10$, and $t(81) = .11$, $p=.92$, respectively. Those that perceived their workplace as formalised and centralised reported lower job satisfaction, and not surprisingly high job satisfaction was related to perceptions of a positive work environment as measured by psychological climate components.

Psychological Well-being

Older respondents reported higher well-being than younger respondents, as did those on higher incomes and those with low scores on the negative affect scale. ANOVA showed no difference in reports of well-being for the three educational groups, $F(2,80) = 1.30$, $p<.27$, or between Maori and non-Maori, $t(81) = 1.13$, $p=.26$. Neither organisational structure, psychological climate or job satisfaction were related to individuals' reports of well-being.

Self Rated Health

Those on higher incomes, those with longer tenure and those low in negative affect reported higher self ratings of health. Age was not related to ratings of health. ANOVA revealed that the three educational groups did not differ on ratings of health, $F(2,80) = 1.44$, $p=.24$, nor did Maori and non-Maori, $t(81) = 1.85$, $p=.07$. As with psychological well-being, self rated health was not significantly associated with any of the organisational variables. Not surprisingly self rated health and psychological well-being were positively correlated.

Regression Analysis

Job Satisfaction

Hierarchical regression analysis was used to evaluate the contribution of each block of variables in explaining job satisfaction. The effects of personal characteristic variables were estimated in the first step. Second, the effects of structural variables were estimated after controlling for personal characteristics. Third, the effects of psychological climate components were then estimated after controlling for the effects of personal characteristic and structural variables. The results of this analysis are presented in Table 33. Standardised beta coefficients for each variable within the blocks are reported. Total variance explained by each step of the equation is provided (R^2 and Adjusted R^2) along with the added variance explained by each block of variables while controlling for previous blocks (R^2 change). R was significantly different from zero at the end of each step.

Table 33
Hierarchical multiple regression of personal characteristics, formalisation, centralisation and climate components on job satisfaction showing standardised regression coefficients, R, R^2, Adjusted R^2, and R^2 change for ex-Army personnel (N=83).

	Steps		
Predictors	**1**	**2**	**3**
Personal characteristics			
Age	-.244	-.203	.118
Income	.328**	.261*	.115
Time in Job	-.228*	-.031	.038
Negative Affect	-.095	.034	-.014
Ethnicity	-.062	-.111	-.044
Education 1	-.012	.065	-.050
Education 2	.113	.086	.094
Structural variables			
Job Codification (Formalisation)		-.001	-.001
Rule Observation (Formalisation)		.045	.089
Hierarchy of Authority (Centralisation)		-.532***	-.054
Index of Participation (Centralisation)		-.101	.036
Climate components			
Leadership facilitation and support			.264*
Job conflict and pressure			-.305***
Job challenge, autonomy and importance			.465***
Workgroup cooperation, friendliness and warmth			-.054
R	0.47**	0.69***	0.89***
Total R^2	0.22	0.48	0.78
Adjusted R^2	0.15	0.41	0.74
R^2 change	0.22**	0.26***	0.30***

*p<.05, **p<.01, ***p<.001.

At step one the personal characteristics block of variables explained 15% of variance (adjusted R^2) in job satisfaction, $F(7,75) = 3.06$, $p<.01$. After step two, with the addition of the four structural variables, total variance explained in job satisfaction increased to 41% (adjusted R^2), $F(11,71) = 6.08$, $p<.001$. The structural block of variables accounted for 26% unique variance in job satisfaction when controlling for personal characteristic variables, and this change in R^2 was significant, $F(11,71) = 9.06$, $p<.001$. After step three, with the entry of the climate component block of variables, total variance explained in job satisfaction increased to 74% (adjusted R^2), $F(15,67) = 16.20$, $p<.001$. The psychological climate component block accounted for 30% unique variance in job satisfaction when controlling for personal characteristics and structural variables. The R^2 change after entering the climate variables to the equation was significant, $F(15,67) = 23.16$, $p<.001$.

Examination of the beta coefficients at each step of the model demonstrates the effects of the individual variables on the dependent variable within each block of variables and the extent to which the addition of subsequent steps altered these effects. With all variables in the equation (step three), none of the personal characteristics were significantly related to job satisfaction when controlling for other variables. Age, ethnicity, education and negative affect were not related to job satisfaction at any step of the analysis reflecting their relationships in bivariate analysis.

Although correlated with job satisfaction at the bivariate level, none of the structural variables were significant at the third step of the analysis. Hierarchy of authority was significant at step two, such that perceptions of centralised authority were related to low satisfaction, however this relationship was completely mediated by the addition of climate components suggesting that this structure variable has an indirect effect on job satisfaction to the extent that it results in perceptions of psychological climate.

All climate variables were clearly related to job satisfaction in bivariate analysis

and to a certain extent these associations were maintained in multivariate analysis, however the workgroup cooperation component was not a significant predictor of job satisfaction when controlling for other variables.

Summary

A research goal was to assess the unique contribution of each block of independent variables to job satisfaction. All three blocks contributed significant proportions of the total explained variance in job satisfaction.

Hypotheses 8 was not supported. Age and time in the job were not significant predictors of job satisfaction when controlling for other variables. Hypothesis 9 was not supported in that negative affect was not a significant predictor of job satisfaction. Hypothesis 10 was not supported. Formalisation and centralisation were not related to job satisfaction when controlling for other variables. Centralisation of authority was negatively related to job satisfaction when controlling for personal characteristics however this was completely mediated by climate. Hypothesis 11 was generally supported with job satisfaction highest where work environments were perceived as providing good leadership and support, low conflict and pressure and challenge, autonomy and importance.

Psychological Well-being

Hierarchical regression was also used to evaluate the contribution of each block of variables in explaining levels of psychological well-being. The steps were the same as the previous analysis, except in this instance job satisfaction was entered on a fourth step. Results of this analysis are presented in Table 34. R was significantly different from zero at each step. At step one, personal characteristics explained 23% of variance (adjusted R^2) in psychological well-being scores, $\underline{F}(7,75) = 4.55$, $p<.001$. The addition of the structural variables adds little to the total explained variance (25% adjusted R^2), $\underline{F}(11,71) = 3.44$, $p<.001$, and this change was not significant, $\underline{F}(11,71) = 1.34$, $p=.26$. Entering the block of climate components added a further 10% unique variance, $\underline{F}(15,67) = 3.56$, $p<.001$, and this change was significant, $\underline{F}(15,67) = 2.90$, $p<.05$. In the final step, where job

Table 34
Hierarchical multiple regression of personal characteristics, formalisation, centralisation, climate components and job satisfaction on psychological well-being showing standardised regression coefficients, R, R^2, Adjusted R^2, and R^2 change for ex-Army personnel (N=83).

	Steps			
Predictors	**1**	**2**	**3**	**4**
Personal characteristics				
Age	.203	.199	.203	.199
Income	.100	.173	.127	.131
Time in Job	-.038	-.050	-.006	-.005
Negative Affect	-.359**	-.427***	-.427***	-.427***
Ethnicity	-.142	-.081	-.051	-.052
Education 1	.092	.062	.007	.006
Education 2	.116	.140	.158	.162
Structural variables				
Job Codification (Formalisation)		-.188	-.171	-.172
Rule Observation (Formalisation)		.175	.179	.182
Hierarchy of Authority (Centralisation)		.082	.191	.189
Index of Participation (Centralisation)		.108	.108	.109
Climate components				
Leadership facilitation and support			-.038	-.028
Job conflict and pressure			-.253	-.264
Job challenge, autonomy and importance			.309*	.325
Workgroup cooperation, friendliness and warmth			-.312*	-.314*
Job Satisfaction				-.036
R	0.55***	0.59***	0.67***	0.67***
Total R^2	0.30	0.35	0.44	0.44
Adjusted R^2	0.23	0.25	0.32	0.30
R^2 change	0.30***	0.05	0.10*	0.00

*p<.05, **p<.01, ***p<.001.

satisfaction was entered, there was no significant R^2 change, $\underline{F}(16,66) = .03$, p=.86. When all variables were entered, total explained variance in psychological well-being was 30% (adjusted R^2), $\underline{F}(16,66) = 3.29$, p<.001.

In bivariate analyses age, income and negative affect were significantly correlated with psychological well-being, however in multivariate analysis, only negative affect remained a significant predictor of well-being when controlling for other personal characteristics. This effect remained consistent across the four steps when controlling for structural, climate and job satisfaction variables. The addition of the structural variables did not add significantly to explained variance when controlling for any and all other variables, reflecting bivariate associations. Climate components did add significantly to explained variance in well-being. Job challenge and workgroup cooperation were significant predictors until step four with the addition of job satisfaction which appeared to mediate job challenge, however workgroup cooperation remained significant. The addition of job satisfaction did not add to explained variance in well-being.

Summary

The research goal was to assess the relative contributions of each block of independent variables to psychological well-being. Clearly personal characteristics were responsible for a large proportion of the explained variance in psychological well-being, with climate components also contributing significantly. However, structural variables and job satisfaction (hypothesis 12) add little to the prediction of well-being in this sample. Only two variables remained significant predictors when all variables were entered. Those with high negative affect reported poorer psychological well-being and surprisingly, higher levels of perceived workgroup cooperation, friendliness and warmth were also related to poorer psychological well-being. The inclusion of job satisfaction in this model does not appear to be useful.

Self Rated Health

Hierarchical regression analysis was also used to evaluate the contribution of each

block of variables in explaining levels of self rated health. The steps were the same as for the previous analysis. Results are presented in Table 35. At step one, the personal characteristics explained 13% (adjusted R^2) variance in self rated health, $F(7,75) = 2.81$, $p<.05$. The addition of the structural variables, did not produce a significant change in R^2, $F(11,71) = 1.09$, $p=.37$, when controlling for personal characteristics. Similarly, at step three when climate components were entered, there was no significant change in R^2, $F(15,67) = .78$, $p=.54$. Step four saw a significant R^2 change with the inclusion of job satisfaction, $F(16,66) = 6.96$, $p<.05$, when controlling for personal characteristics, structural and climate variables. When all variables were entered at step four, explained variance was 20% (adjusted R^2).

At the final step only income and job satisfaction were significant predictors of self rated health when controlling for other study variables. As only income, time in the job and negative affect were associated with self rated health in bivariate analyses, it is not surprising to find so few significant predictors in multivariate analyses. Time in the job was significant at step one but this effect was mediated by the inclusion of structural variables. Negative affect was significant at step two, however this effect was mediated by the inclusion of climate variables. None of the structural variables or climate variables contributed at any of the steps to self rated health. Job satisfaction was not related to self rated health at bivariate level but becomes significant in multivariate analyses. This might suggest that other IV's are acting as suppressor variables on the relationship between job satisfaction and self rated health (Tabachnick & Fidell, 1989).

Summary

A further research goal was to assess the unique contributions of each block of independent variables on self rated health. Although the personal characteristics block explained 13% of variance in self rated health, only income was a significant predictor of the dependent variable when controlling for the others, such that those with higher incomes reported higher ratings of health. The structural variables did not contribute to explained variance in self rated health, nor did any of the climate

Table 35

Hierarchical multiple regression of personal characteristics, formalisaiton, centralisation, climate components and job satisfaction on self rated health showing standardised regression coefficients, R, R^2, Adjusted R^2, and R^2 change for ex-Army personnel (N=83).

	Steps			
Predictors	**1**	**2**	**3**	**4**
Personal characteristics				
Age	-.158	-.167	-.227	-.159
Income	.213	.284*	.315*	.251*
Time in Job	.220*	.190	.213	.192
Negative Affect	-.199	-.268	-.222	-.231
Ethnicity	.154	.212	.151	.175
Education 1	-.069	-.102	-.105	-.077
Education 2	.166	.188	.223	.168
Structural variables				
Job Codification (Formalisation)		-.156	-.174	-.172
Rule Observation (Formalisation)		.161	.228	.179
Hierarchy of Authority (Centralisation)		.112	-.051	-.083
Index of Participation (Centralisation)		.096	-.010	-.024
Climate components				
Leadership facilitation and support			-.187	-.334
Job conflict and pressure			-.249	-.076
Job challenge, autonomy and importance			.089	-.347
Workgroup cooperation, friendliness and warmth			-.064	-.030
Job Satisfaction				.561*
R	0.46*	0.50*	0.54	0.60*
Total R^2	0.21	0.25	0.29	0.36
Adjusted R^2	0.13	0.14	0.13	0.20
R^2 change	0.21*	0.04	0.04	0.07*

*p<.05, **p<.01, ***p<.001.

components. Job satisfaction added to the prediction of health scores as predicted by hypothesis 12. Examination of the beta coefficients at step five shows that the strongest predictor of high self ratings of health was satisfaction with ones job. Not surprisingly, having a higher income also predicts ratings of health.

7.4.7 Comparisons between Current and Ex-Army Personnel

The two samples of data were combined to form one data set. Data were screened for accuracy of data matching, missing values and normality of variable distributions.

Self rated health, and index of participation were both severely negatively skewed. Reflection and square root transformations reduced skewness considerably. Total social support and satisfaction with social support were both severely positively skewed. Square root and logarithmic transformations reduced skewness respectively.

Checks for multivariate outliers revealed no cases that met the use of $p<.001$ criterion for Mahalanobis distances. All 843 cases were retained for further analyses. All remaining variables were retained as none had less than five percent missing cases (Tabachnick & Fidell, 1989). Sample descriptions of both current personnel and ex-personnel are shown elsewhere (pp. 121 & 169).

Organisational Structure

The means and standard deviations for the Current (categorised as Total Army, Combat and Support groups) and ex-Army personnel on formalisation and centralisation scales are presented in Table 36. As expected Army personnel on average viewed their work environment as more formalised and centralised than ex-Army personnel: Job Codification, $t(663) = 5.76$, $p<.001$; Rule Observation, $t(671) = 7.96$, $p<.001$; Hierarchy of Authority, $t(146.32) = 6.78$, $p<.001$; and Index of Participation, $t(139.99) = 3.85$, $p<.001$. ANOVA and ranges tests revealed that for Hierarchy of Authority and Index of Participation there were no significant differences between the support and ex-Army groups, though both were

Table 36
Means and standard deviations for centralisation and formalisation across current Army personnel, institutional and occupational Army groups and ex-Army personnel.

	Total Current Personnel		Combat Group (Institutional)		Support Group (Occupational)		Ex-Army Personnel			
	M	SD	M	SD	M	SD	M	SD	t[a]	F[b]
Formalisation										
Job Codification	3.08	.55	3.13	.55	2.98	.50	2.75	.60	***	***
Rule Observation	2.55	.85	2.69	.83	2.25	.81	1.85	.86	***	***
Centralisation										
Hierarchy of Authority	2.59	.71	2.63	.71	2.49	.69	2.02	.83	***	***
Index of Participation	4.31	.85	4.48	.74	3.95	.97	3.87	1.18	***	***

[a] t-tests between Total Current Personnel and Ex-Army Personnel
[b] ANOVA for Combat, Support and Ex-Army groups
***p<.001

significantly different from the combat group at the .05 level; $F(2,666) = 31.09$, $p<.001$ and $F(2,673) = 34.62$, $p<.001$ respectively. For the formalisation scales ranges tests revealed that all the three groups were significantly different from each other at the .05 level; Job Codification, $F(2,661) = 21.14$, $p<.001$ and Rule Observation $F(2,705) = 57.95$, $p<.001$ respectively.

Outcome Variables

Means and standard deviations on the three outcome variables for the current and ex-Army personnel are provided in Table 37. Ex-Army personnel currently in paid employment reported higher satisfaction with their jobs than current Army personnel, $t(199.65) = 5.97$, $p<.001$. When looking at facets of job satisfaction, ex-Army individuals reported significantly higher satisfaction with: the freedom to choose their own work method, $t(736) = 7.09$, $p<.001$; the recognition they received for their good work, $t(731) = 4.51$, $p<.001$; their immediate supervisor, $t(711) = 2.85$, $p<.01$; the amount of responsibility given to them, $t(731) = 6.45$, $p<.001$; their rate of pay $t(729) = 10.00$, $p<.001$; the opportunity to use their abilities, $t(732) = 7.83$, $p<.001$; industrial relations between employing organisation and workers, $t(717) = 8.61$, $p<.001$; the way their organisation is managed, $t(222.01) = 9.97$, $p<.001$; the attention paid to suggestion they made; $t(720) = 7.09$, $p<.001$; the hours they worked, $t(725) = 2.81$, $p<.01$; and the amount of variety in their job, $t(730) = 2.72$, $p<.01$. Army personnel reported more satisfaction with their job security than ex-Army personnel, $t(223.73) = 5.20$, $p<.001$. There were no differences between the two groups on their ratings of satisfaction with the physical work conditions or their fellow workers.

The total ex-Army sample reported higher levels of psychological well-being than the Army sample, $t(781) = 3.35$, $p<.001$. There was no significant difference in self rated health between the two groups, $t(366.88) = 1.86$, $p=.07$.

Personal Resources

Means and standard deviations for coping, total social support and satisfaction with social support are shown in Table 37. The two groups did not differ significantly

on any of these three variables: Coping, t(794) = .80, p=.43; Total Social Support, t(478.30) = .46, p=.65; and Satisfaction with Support, t(663) = 1.19, p=.24.

Given that in both samples, climate components were significant predictors of job satisfaction, a closer examination of the composite variables that make up the components may provide some insight into differential job satisfaction reports. An examination of group means shows that on average, current Army personnel experienced higher levels of role ambiguity (t(668) = 2.90, p<.001), more conflict (t(185.64) = 8.97, p.001), less autonomy (t(138.87) = 4.84, p<.001), more role overload (t(667) = 5.59, p<.001), more conflict between subgroups (t(662) = 6.37, p<.001) and felt their jobs were less important (t(678) = 2.90, p<.001), than the ex-Army group. They also perceived their supervisors to lack skills in setting and achieving goals (t(144.64) = 3.10, p<.001), felt they had less influence on their supervisors (t(139.16) = 5.05, p<.001), and felt that the organisation as a whole was less concerned and aware of employees problems (t(678) = 4.50, p<.001), than the ex-Army sample. On the other hand, on average Army personnel reported higher levels of work group cooperation (t(136.43) = 1.98, p=.05) and workgroup friendliness and warmth (t(679) = 3.45, p<.001.

Table 37
Means and standard deviations on outcome and personel resource variables for current and ex-Army personnel.

	Current Army Personnel (N=571)		Ex-Army Personnel (N=235)		
	M	**SD**	**M**	**SD**	**t**
Job Satisfaction	65.99	13.45	74.48	15.40	***
Psychological Well-being	59.11	14.27	62.89	14.65	***
Self Rated Health	5.43	1.07	5.22	1.31	ns
Coping	122.31	19.65	123.52	18.56	ns
Total Social Support	1.70	.64	1.67	.55	ns
Satisfaction with Support	.25	.16	.24	.16	ns

***p<.001

Summary

Hypothesis 13 was supported in that the Army personnel perceived their work environment to be more centralised and formalised than the ex-Army personnel. On the centralisation scales the occupational group (Support) did not differ in their perceptions from the ex-Army (civilian) sample, but both perceived structure to be less centralised that the institutional group (Combat). As expected the institutional group perceived structure as being more formalised than the other two groups, although the occupational group also perceived structure to be more formalised than the ex-Army group.

Addressing hypothesis 14, Army personnel reported less satisfaction with their jobs and poorer psychological well-being than the ex-Army personnel. There were no differences in self rated health.

A research goal was to assess differences in work environment perceptions and interpersonal resources (social support and coping) that may account for differences in outcome variables. There were no differences in interpersonal resources, however Army personnel perceived a number of job/role characteristics and leader behaviours more negatively than ex-Army personnel. Army personnel also had more positive perceptions about workgroup interactions than the ex-Army group.

CHAPTER EIGHT

DISCUSSION

Contents

The present research examined the links between individuals, their perceptions of their work environment, (e.g. organisational structure, psychological climate and organisational climate), and psychosocial and physical health outcomes (job satisfaction, mental and physical health) with current and ex-Army personnel. Relationships between variables were investigated within the framework of structural transition within the military environment, and transition from the military to civilian environment. Findings are briefly summarised and then discussed in the order major hypotheses are presented in the hypotheses sections.

8.1 Study One

8.1.1 The Institutional/Occupational Model of Military Organisation

Summary of Findings

Study one assigned current Army personnel into three groups based on corps and precedence (combat, combat support and service support) which represented the institutional-occupational modalities as proposed by Moskos (1977). Initial investigation of proposed institutional-occupational groups in the Army on perceived structure and percentage of military contacts suggested combining the two non-combat groups into one occupational oriented group would better represent institutional/occupational modalities. This would also give a clearer distinction between combat roles and support roles. Analyses of these two groups showed support for a distinction between institutional and occupational sections in the New Zealand Army. As predicted the institutional group perceived the organisational structure of the Army as more formalised and centralised than the occupational group. In addition, they had a higher percentage of military social contacts than the occupational group.

A major focus of the study was whether institutional-occupational distinctions in the Army had consequences for perceptions of organisational climate. As predicted the institutional group perceived their leaders to be more supportive and skilled; their jobs as less challenging, autonomous and important; and found their workgroups to be more friendly, cooperative and warm, compared to the occupational group. It was also predicted that the institutional group would

perceive less conflict in their work environment due to higher formalisation, but this was not supported. The utility of using mean scores to describe the organisational climate of these two groups was not justified based on three statistical criteria. In addition, analyses on aggregated data at other organisational levels (Trades, Trade Groups, Units, Corps) similarly did not provide justification for the existence of shared climates at lower organisational levels.

Hypotheses one and two predicted that the combat group members would perceive the Army as more formalised and centralised, and would have fewer civilian social contacts than the support group. These first two hypotheses evaluated the legitimacy of categorisation of personnel into the institutional and occupational groups based on roles and precedence. Previous research on the I/O model has not investigated individual's perceptions of the structure of these I/O modalities. Most research employing this model has investigated either individual orientation and values or taken a macro approach to changes in military organisation. In the first approach, individuals indicate whether they identify with an institutional or occupational belief (e.g. Wood, 1988; McAllister & Smith, 1989; Stahl, Manley, & McNichols, 1978) or rate how they think the military should be organised (e.g. Cotton, 1981; Johns et al., 1984). The second approach, favours the investigation of the social democratisation of the military organisation via changes in compensation and promotion criteria, unionisation, employment of women, recruitment appeals and the employment of civilians (e.g. Downes, 1988; Fleckenstein, 1988; Boene, 1988).

The finding that the combat group perceived the organisational structure of the Army as more formalised and centralised than the support group provides evidence that these institutional and occupational modalities represent traditional "mechanistic" and "organic" types of military organisational structure (Segal & Segal, 1983). A mechanistic model is generally associated with high formalisation, and high centralisation whereas an organic model is associated with less formalisation and decentralisation (Robbins, 1983). In addition it has been noted that public, non-profit organisations tend to be more formalised and

centralised (Martin & Glisson, 1989). Consequently, we would expect the institutional model to reflect this type of structure more than the occupational model. This finding provides evidence for the existence of institutional/occupational modalities within the New Zealand Army based on the expected differences between combat and non-combat personnel proposed by Moskos (1977). Bruhns (1991) notes that the New Zealand Defence Forces have "a very vertical hierarchy, emphasising a narrow span of control; mostly downward communication and explicit authoritarian hierarchical structure control" (pg.43). This may be relevant to the overall structure of the defence forces, however Bruhns also notes that describing the New Zealand Defence Force as one organisation is not feasible due to the three distinct services, and the diversity within each service. For instance the Air Force differs from the other two services in that officers fill most of the combat cockpit roles. Thus, it would not be unusual to find differences in perceptions of structure between combat and non-combat personnel within any service.

A further validation of the categorisation procedure investigated the social integration of personnel. Segal (1986) argues that the extent to which military personnel have social contact with civilians provides an indirect measure of the institutional nature of the military. That is, the institutional model allows for less external integration and consequently less civilian contact than the occupational model where work boundaries often permeate non-military life. In the present research, the combat group reported more military social contacts and had a higher percentage of military social contacts compared to civilian social contacts than the occupational group. The only previous study to investigate this aspect of the I/O model reports similar findings. Blair (1980) in a sample of U.S. Army personnel found that 54% of non-career officers (occupational orientation) indicated that the majority of their best friends were civilian compared to 34% of the career officers (institutional orientation). Blair (1980) employed rank and self report measures of proposed career orientation in the military, whereas the present study used organisational information to categorise I/O groups based on roles and precedence, thus supporting Segal's (1986) suggestion that there are a number of levels at

which the I/O model can be measured.

8.1.2 Organisational Climate

Hypothesis three predicted that the combat group would be characterised by a climate reflecting low levels of role conflict and pressure, low levels of job challenge and autonomy, and high levels of leader support and workgroup esprit. There have been few studies that have directly examined climate in the military setting and none that have considered climate within the framework of the I/O model. Studies that have examined structure and climate in the military setting offer some level of comparison on the I/O model and expected climates.

The present study found that the institutional group perceived their leaders to be more supportive and skilled than the occupational group. Jones & James (1979) found no significant relationships between measures of organisational structure and a leadership component for the same psychological climate questionnaire in a sample of Navy personnel on ships during deployment. It is noteworthy that the Navy, although a military setting, represents a unique work environment. As Gunderson (1976) notes, the Navy tends to have well-defined occupational and social structures with crew composition remaining relatively stable during deployment. What may seem typical in a restrictive isolated environment where possibly the constant need for highly structured work procedures is high (ships), may appear more salient for military personnel less confined by their physical work environment i.e. Army personnel.

The present findings with regard to leadership aspects of climate also provide some support for the transformational/transactional leadership argument discussed in chapter five, i.e. institutional militaries encourage transformational leadership, while occupational militaries encourage transactional leadership. The findings support previous evidence that transformational leaders are seen more positively than transactional leaders by their subordinates (Deluga, 1991). It should be noted that Deluga's sample was primarily young officers, whereas the present sample

consisted mostly of lower ranks. However, Bass, Walman, Avolio & Bebb (1987) have noted that transformational leadership occurring at higher organisational levels has been found to "trickle down" to lower levels, suggesting that rank per se is not an issue. Without an explicit measurement in the present study, it is difficult to determine whether the more positive perceptions of leaders by the institutional group can be attributable to leadership styles. However, Jones & James (1975) found in a group of U.S. Army employees, using scales later developed for the PC questionnaire that confidence and trust in leaders was positively related to leader behaviours, such as support, goal emphasis, interaction and work facilitation. These behaviours are arguably those of a transformational leadership style, similar to that described by Moskos and Woods (1988) as characteristic of the institutional model.

The present study found that the combat group perceived their jobs as less challenging, autonomous and important than the occupational group. Previous research has shown, age, skill variety, demand for skills and education are positively related to perceptions of autonomy (e.g. Wallace, Levens & Singer, 1988; Frew & Bruning, 1987). In the present study the combat group was characterised by a lower average age, lower pay, shorter tenure, lower rank and less specialised jobs (the stereotype of the institutional model), and it is thus not surprising that this group rated their jobs less challenging than the support group. Similar findings are reported by Jones & James (1979) in their Navy sample who found that climate perceptions of job challenge, importance and variety were positively related to tenure, hierarchical level and age but negatively related to unskilled jobs.

In the present research, the combat group found their workgroups to be more friendly, cooperative and warm, compared to the occupational group. This supports the contention that the institutional model promotes group cohesion whereas the occupational model promotes individualism and self interest. Johns et al., (1984) has defined military cohesion as the "bonding together of members of a unit or organisation in such a way as to sustain their will and commitment to each other,

their unit and the mission" (pg.ix). They suggest that such moral commitment has been a traditional form of control in the military and is congruent with Moskos's institutional model. On the other hand Johns et al. (1984) have defined calculative commitment as a form of control that uses remunerative power to elicit a transitory, low level commitment which is compatible with the occupational model. As the institutional model emphasises group cohesiveness (Segal & Segal, 1983), we would expect members to view their workgroups and co-workers as being friendlier and warmer as found in the present research. Other research does not support this argument however. For instance, Jones & James (1979) found relatively routine technologies and personnel with lower average intelligence, education, training and tenure were associated with climates that were 'monotonous, cold and unsupportive' and 'unfriendly and uncooperative'. On the other hand, non-routine, complex technologies, higher average intelligence, education and training were associated with climates that described work environments as 'enriched and warm' and 'organisationally uninvolving'. These findings appear to contradict the I/O model, in that groups that appear to characterise an occupational model (i.e. technical, skilled, highly trained) report greater friendliness, cooperation and warmth than groups that appear to characterise an institutional model (i.e. low technology, unskilled, low training). These discrepancies in findings again may be a function of the different services viewed in Jones & James (1979) and the present research, (i.e. Navy personnel may be more technically oriented than Army personnel) and suggest as has been found elsewhere (see Moskos & Wood, 1988), that differences in the I/O model exist between military services.

It could be argued that the highly formalised nature of the institutional model would constrain and stifle interpersonal and intraorganisational conlfict, whereas the occupation model with its emphasis on individual self interest would encourage competition and conflict between organisational members and departments. In the present study despite significant differences in formalisation and centralisation, there was no significant difference in conflict and pressure across the two groups. It has been suggested that despite occupational trends in the military, certain aspects of the military ethos are still very pervasive (van der Muelen, 1988; Bruhns, 1991) and this is likely to be reflected in an overall level of obedience to

authority and low tolerance of interpersonal behaviour (conflict) that might undermine military effectiveness.

Despite the expected differences found in climate perceptions between the institutional and occupational groups, further statistical criteria were not met to justify the legitimacy of using aggregated data to describe shared or collective climate for these groups. Jones & James (1979) submit that potential criteria to justify aggregation includes not only the demonstration of significant differences in aggregated or mean perceptions across different groups, but there must also be demonstrable inter-perceiver agreement and aggregate score reliability. In the present study, there were very low indices of inter-perceiver agreement within the I/O groups. Reliabilities for these aggregated scores were high with the exception of the job conflict and pressure component, however it has been noted that this measure, as with all measures of reliability is affected by sample size i.e. the larger the larger the sample size the more stable the mean X scores (James, 1982). The low agreement on climate perceptions across our I/O modalities is disappointing but not without precedent. Jones & James (1979) found in their Navy sample that adherence to the three criteria discussed above allowed them to aggregate data to ship division level only and not to higher levels such as ship-wide or department-wide situations. They found individuals with a speciality or technical rating were typically assigned to a specific type of division on the ship (e.g. navigation, radio communications etc), such that very similar division types appeared on each ship. Within these divisions people generally performed the same task and had undergone similar training. In the present study, the two groups were assumed to represent I/O modalities based on roles and precedence, so to a certain extent, jobs were similar i.e. combat versus support, however, it appears that within these groups perception were too diverse to demonstrate shared climate. The present study also analysed aggregated data at other organisational levels (Trades, Trade Groups, Units, Corps), however, these analyses also did not provide enough justification for the existence of shared climates at those levels. Intraclass correlations were on average higher than those for the I/O groups, suggesting that the more homogenous groupings of individuals is warranted, although at the same

time significant differences on climate components between the groups within each level of aggregation were less detectable (F-ratios were significant but ranges tests demonstrated only a few significant differences between pairs of groups at each level).

These findings suggest first, that a more appropriate objective method of categorising sections of the military into I/O modalities should be found. Segal (1986) notes that although there are numerous self-report studies on the I/O orientation of service personnel, the question of whether there have been corresponding structural changes in the military as an organisation is less sympathetic to survey measurement. Segal advocates the use of ethnographic style research to uncover community based change in values, and suggests that a great deal of the I/O change thesis is based on the communal nature of the military. In addition, Segal (1986) notes that military organisations tend hold a large amount of data about themselves and this organisational data can be used to illustrate some components of the I/O thesis. For instance, ratios of married personnel, ratios of dependents, numbers of personnel living in military quarters, pay rates, reenlistment rates and reliance on civilian employees could all be employed to determine I/O structural changes to the military community. Segal (1986) concludes, in a review of measurement issues related to the Moskos (1977) model, that despite its influence on military organisational research, measurement of the I/O thesis has fallen short of theory. A possible explanation for this is the necessity for different levels of measurement and analysis. Segal (1986) notes the overwhelming use of social survey in measuring the I/O thesis, and although this method is an invaluable tool in assessing attitudes, behaviours and perceptions of individuals it does not provide objective information about the organisation. However, it can be argued, that the salience of a particular measurement is contingent on the research questions being asked. For instance, if the purpose of the research is to ascertain whether personnel view their work in the military as a vocation or just another job, as has been the focus of much attention (Stahl, Manley & McNicols, 1978; Stahl, McNicols, & Manley, 1981; Cotton, 1981), then survey data provide a useful tool. However, if the purpose of research is to measure institutional and occupational

trends at an organisational level then military organisational data may be more appropriate. What has not been addressed previously are the effects of I/O change at the organisational level on the *perceptions of the work environment* at the individual level, rather than individual institutional/occupational orientation. This, quite different research question would make use of both data collection methods.

A further consideration in the measurement of structural changes is the possibility that institutional and occupational constructs may in fact co-exist, such that instead of an I/O continuum, institutional and occupational dimensions are independent as has been suggested by some researchers (Stahl, Manley & McNichols, 1980). For instance, it has been noted that in the New Zealand Defence Force there has been a concern for traditional norms and values concomitant with a need for management based reorganisation and rationalisation of elements within the defence forces. It may be that in future, institutional elements of the military may become even more entrenched (e.g. traditions, courtesies and protocols, legal systems, ceremonies, symbols and hierarchies), to counter the increasing emergence of occupational trends in such elements as pay and conditions, performance evaluation, problem resolution, female participation, leadership, use of technology, and employment of civilians. Future research should attempt to demonstrate whether the institutional and occupational constructs are independent and future measurement techniques should reflect this.

A further consideration in the lack of perceptual agreement in the present study is the concept of misfit mentioned earlier. We have noted the possibility of sections becoming increasingly occupational while other areas remain largely institutional however there is a limit to how closely the military can approximate civilian organisations. Thus, as Segal (1986) notes, some individuals entering the military with an occupational orientation may find themselves disillusioned.

Most studies of the I/O model have measured self-report I/O orientation without addressing the social context of the individuals work environment or how they perceive that environment. For instance, Johns et al. (1984) found that some

officers perceived their own service as being more occupational than their individual orientation, although no objective measures of I/O organisational orientation were included in the study. The possibilities for misfit between the individual and their environment (either real or perceived) has the potential to undermine perceptual agreement within the I/O modalities in the present research. It may be possible in future to investigate grouping individuals according to fit between orientations and environments and subsequently look at organisational climates that might be generated by, for example, good institutional fit and poor institutional fit. Future research on I/O *organisational* climates may find it useful to include not only measures of I/O orientation, but also individuals perceptions of the I/O orientation of their environment and organisational measures of I/O structure in military social systems.

Although these suggestions address the findings for a lack of perceptual agreement for organisational climate within I/O modalities they do not fully address the lack of perceptual agreement within other organisational levels in the Army (i.e. trades, tradegroups, units, corps). Jones & James (1979) found homogeneity of perceptions only at lower levels of the Navy organisation, such that the type of division was more important in the formation of individual perceptions than the formal organisation. These findings suggest the importance of group homogeneity and the immediate work environment in the development of climate perceptions. In the present research individuals were first grouped by trades. In this respect we assume, for instance, all riflemen or all ammunition technicians will have similar climate perceptions due to the functional similarity of their tasks. However, these individuals may well be employed in different sections, units and/or corps within the Army. Similarly, grouping individuals by tradegroup assuming homogeneity of function may be an illusion. For instance, the tradegroup "Clerical" consists of automotive parts suppliers, clerks, storemen and suppliers. In addition, the tradegroup "Food and Health" consists of cooks, stewards, dental assistants, dental hygienists, dental technicians and medical assistants. Finally, grouping individuals by units and corps further reduces homogeneity because of the wide range of individual variations for example in trades and tradegroups. This lack of

homogeneity was also obviously a factor in the lack of perceptual agreement across I/O modalities. Despite Adams et al. (1977, cited in Jones & James, 1979) suggestion that it should be possible to generate aggregations of individuals who work in different subunits but have highly similar jobs, trades and tradegroups did not share climate perceptions. It is possible that the informal workgroup social system may play a larger role in the formation of climate perceptions than was previously thought. For instance, it is possible that the nature of the different services examined in the present study and the Jones & James (1979) study may explain why in the present study perceptual agreement on the climate components was not justified. The environment of deployment on aircraft carriers and destroyers may encourage the emergence of shared perceptions amongst division members due to the relatively constricted informal social systems under which they operate. This *combined* with the highly similar job functions within divisions across ships made it possible to collapse these division into larger clusters with shared perceptions of climate.

A possible alternative to using aggregate climates based on formal organisational units, divisions or workgroups is the use of numerical taxonomic methods of aggregation (Joyce & Slocum, 1984). This method seeks similarities in climate perceptions thereby fulfilling the agreement criteria for aggregation. This type of analysis may provide information, for instance, as to the importance of process variables such as leadership style on the formation of collective climates, or individual variables such as age, education, work experience or tenure. In addition, it may also provide insight in to possible overlaps in formal organisational units that may frustrate perceptual agreement within particular formal groupings e.g. trade, division, department. Joyce and Slocum (1984) note that one possible influence on collective climate formation seldom investigated is social interaction. Informal groups composed of members from different formal groupings may interact socially both at work and away from work and these interactions may influence how individuals perceive their work environment. This is of particular interest in the military setting, where work permeates non-work life to a far greater extent than in civilian organisations, particularly with regard to the institutional

model of military organisation (Blair, 1980). In future it may be useful to measure informal social networks that arise in the work setting that may extend into the non-work arena.

8.1.3 Factors contributing to job satisfaction, psychological well-being and self rated health

The second focus of study one was to examine the links between Army personnel, their perceptions of their work environment, (e.g. organisational structure and psychological climate), and a number of psychosocial and physiological outcomes (job satisfaction, mental and physical health) at the individual level of analysis. These relationships have been illustrated by work related stress models such as the stressor-strain model on page 3. This model demonstrates the mediating role of job satisfaction in the relationship between occupational stressors and strain symptoms.

Job Satisfaction

Summary of Findings

Variables that have previously been related to job satisfaction such as age, rank (occupational level), income, and education were not directly related to job satisfaction when controlling for other study variables. However time in the Army was strongly related to job satisfaction but in the opposite direction to that predicted such that longer tenure was associated with dissatisfaction. Negative disposition was associated with dissatisfaction, but as predicted this effect was greatly mediated by structural and climate variables. Maori appear to report greater job satisfaction than non-Maori. As expected formalisation and centralisation were related to lower job satisfaction and positive perceptions of the work environment (psychological climate) were associated with higher job satisfaction. All three blocks of variables (personal characteristics, structure and climate components) contributed significantly and substantially to job satisfaction.

Hypotheses four and five predicted that age, rank and tenure would be positively correlated with job satisfaction, and negative affect would be negatively related to job satisfaction. These hypotheses were designed to assess the potential

confounding effects of personal characteristics in the stressor/strain relationship. Previous research has found job satisfaction inconsistently related to a number of demographic attributes such as age, tenure, income, education, gender and ethnicity (see chapter four). In the present study age and tenure were highly correlated in bivariate analyses (r=.86) which may help explain the failure of age to be related to job satisfaction. Bedian et al. (1992) have noted the failure of previous research to control for covariance between age and tenure. White and Spector (1987) found that despite a positive bivariate relationship between age and job satisfaction, age was unable to explain job satisfaction when the effects of other variables that correlated with age were removed. Bedian et al. (1992) propose that precursors of job satisfaction are likely to vary systematically with tenure, and therefore tenure may impact on the way aspects of the work environment interact to influence job satisfaction. Bivariate correlations may explain the lack of association between job satisfaction and other personal characteristics such as income, rank, ethnicity, I/O membership and ethnicity in multiple regression. Only negative affect appears to be independent of other personal characteristics.

The finding that negative affect was related to job satisfaction when controlling for all other study variables is consistent with previous research (Watson & Slack, 1993; Watson & Tellegen, 1985; Watson et al., 1987), although Agho et al. (1993) found the relationship between the two variables was mediated by job characteristics and personality variables. In the present study the magnitude of negative affect was to a certain extent reduced by controlling for perceptions of organisational structure and climate suggesting that in part the effects of negative affect on job satisfaction are due to how individuals perceive their work environment. Bivariate analyses tend to support this notion in that negative affect is predictably related to perceptions of highly structured work environments and negative perceptions of psychological climate. Although some researchers argue that negative affect explains away the relationships between self-reported stressors and strains, the present study found relationships between sources of stressors and job satisfaction when controlling for negative affect (see below), and suggests that negative affect should be included in self-report research in order to examine its

potential influence on the stressor-strain relationship (Brief et al., 1988; Schaubroeck et al., 1992).

The finding that personnel who had spent longer in the Army reported lower job satisfaction was unexpected. Previous research has shown tenure to be positively related to job satisfaction (e.g. Brush et al., 1987; Bedian et al., 1992; White & Spector; 1987). These previous findings support the hypothesis that longer tenured workers may be more satisfied because they are on higher salaries and are at higher job levels (White & Spector, 1987). In the present study income and rank were positively related to time in the Army, however neither of these variables were also related to levels of job satisfaction in multivariate analyses. Military samples in general tend to report lower ratings of job satisfaction than other samples (e.g. Woodruff & Conway, 1990; Blair & Phillips, 1983), and longer tenure may serve to exacerbate that relationship. In addition, Jans (1989) notes, that military pension schemes are a strong inducement to complete the twenty years of service even when commitment to the military may have declined. Rawlinson (1978) found technicians in the Australian Air Force who were within a few years of completing their 20 years service, were reluctant to leave even when they derived little satisfaction from their job, because of the added incentive of full pension benefits for the transition to civilian life. This 'golden handcuff' incentive to stay in a psychologically unrewarding environment may serve to intensify already high levels of dissatisfaction.

The inclusion of both age and time in the Army, despite their high correlation with each other, was to ascertain their dual relationship with job satisfaction. It was noted in results that the inclusion of variables in the regression equation that have zero or near-zero correlations with the dependent variable (DV) but large correlations with other independent variables (IVs) may be misleading. Tabachnick and Fidell (1989) suggest a large regression coefficient may not directly predict the DV but predicts the DV well after another IV or IV's suppress irrelevant variance. Smith, Ager and Williams (1992) however note that there is a lack of a commonly-agreed upon definition of suppression. It is possible in the present study that age

and income served to suppress irrelevant variance in time in the Army and thus this finding should be treated with caution.

Maori were slightly more satisfied than non-Maori with their jobs. In bivariate analyses this effect was marginally significant. In regression analyses, ethnicity only becomes significant when all variables are in the equation, suggesting that climate components may suppress some irrelevant variance in the ethnicity variable. Previous research, predominantly in the U.S., has found generally that non-whites report lower job satisfaction than whites (Weaver, 1980; Jones et al., 1977), however these differences are thought to be largely due to relatively different work conditions. As Griffin and Bateman (1986) note where differences are found they are more likely to be due to differences in opportunities and experience. Findings from military samples conflict. Fredland and Little (1983) report no significant differences between black and white U.S. military personnel on global job satisfaction. However further studies have shown that blacks in the U.S. Army report higher job satisfaction (Blair et al., 1983) and greater satisfaction with their careers than whites (Moskos, 1986). Fredland and Little (1983) have argued that the relatively discrimination free military environment may offer minorities opportunities not found in the civilian sector. For instance Gade et al. (1991) in a sample of the U.S. Army found blacks and hispanics reported significantly more personal growth benefits from military service than whites and Bartling and Eisenman (1992) found that black and hispanic groups viewed military service more favourably than whites or asian-americans. The possibility of increased financial reward in the military compared to the civilian sector may also play a part. For instance, the average wage for Maori in the present sample was $638.00 per week. In the total Maori population 76% earn less than $600.00 per week (Statistics of New Zealand, 1994).

These explanations aside, interpretation of the finding of the present study that Maori had higher job satisfaction than non-Maori should be undertaken with caution. First, the difference in reported satisfaction is relatively small and marginally significant in bivariate analysis. Second, the possibility of this being

a spurious result due to suppressor variables cannot be eliminated.

It was expected that perceptions of a highly formalised and centralised work environment would be associated with reports of job dissatisfaction. Formalisation was measured by two components: job codification, which reflects the degree to which employees must consult organisational rules in fulfilling their responsibilities; and rule observation, reflecting the degree to which employees are checked for rule violation. In the present study Army personnel who reported high levels of job codification also reported low levels of job satisfaction, however there was no significant relationship between rule observation and job satisfaction.

Centralisation was also measured by two components: Hierarchy of Authority, defined as the extent to which members are assigned tasks and provided with the freedom to implement them without interruption from supervision; and Index of Participation defined as the extent to which staff members participate in setting the goals and policies of the entire organisation. Personnel who reported higher levels of centralisation on both these scales reported lower levels of job satisfaction.

These findings generally support previous findings of non-military setting samples where indices of formalisation and centralisation have been associated with lower job satisfaction (e.g. Agho et al., 1993; Blegen, 1993; Brooke & Price, 1989; Dewar & Werbel, 1979; Kline & Boyd, 1991; Snizek & Bullard, 1983). As, Gruneberg (1979) notes, higher formalisation and centralisation may lead to a number of consequences for job satisfaction. For instance, a highly formalised and centralised workplace may lead to problems with upward communication. Invariably decisions are made at higher levels without lower level input with subsequent frustration for those not included in the decision making process. This would suggest that those of higher rank would report higher satisfaction due to their more participatory role in decision making. In bivariate analyses officers did report significantly higher levels of satisfaction, however rank was not a significant predictor of job satisfaction in regression.

An additional consequence of a highly structured work environment is the delay in communication due to the number of levels in the hierarchical structure that communication needs to be channelled through. Bruhns (1991) notes that the New Zealand Defence Forces represent "an explicit authoritarian, hierarchical structure", and is essentially top heavy. The need to consult rules and regulations, and higher commands in the course of work is pervasive in the Army and represents the more institutional nature of the military. To a certain extent day to day duties can be undertaken without recourse to higher authorities, however, many job related functions are required to be approved by higher ranks. Gruneberg (1979) suggests that this constant need for verification before tasks can be undertaken may result in frustration and dissatisfaction for lower level employees. A further possible influence on satisfaction associated with highly structured work environments is the lack of cognisance taken of informal social relationships that exist in organisations. These social networks, noted above, can influence the individuals response to the work environment. The New Zealand Army requires frequent personnel rotation (postings) which involves geographical moves for personnel and their families (Bruhns, 1991). This not only affects those who move but can also place considerable strain on work groups where there is a constant change of personnel. Undoubtedly there are some who view rotation as beneficial in that it enables them to learn new skills, meet new people etc, however others may find the inability to become totally proficient in one task dissatisfying. Bowen (1989) found that assignment stability contributed to satisfaction with the military way of life for U.S. Army personnel with families, and satisfaction with the frequency of moves (postings) was also positively related to satisfaction with military way of life for married personnel, although neither of these relationships were significant for unmarried personnel.

There are convincing arguments for a link between highly structured work environments and dissatisfaction, however to some extent it is puzzling that formalisation and centralisation should contribute to dissatisfaction in the Army. Despite the evidence for a move toward occupationalism in the military, for the most part the Army still represents a very regimented organisation allowing less

personal freedom than civilian organisations and is largely perceived as such by civilians (e.g. Bartling & Eisenman, 1992). It would be expected then that those entering service would be aware of the organisational structure of the military and the constraints this may place on many areas of their lives[15]. However, Gade et al. (1991) note, the military is often advertised as providing a positive environment that fosters personal growth and provides training that will benefit the recruit in later life. As Fredland and Little (1983) suggest one reason for dissatisfaction in the military may be that prospective recruits may not be fully aware of work conditions and procedures prior to joining the military and upon entrance find it difficult to leave and near impossible to change conditions.

Individual differences may moderate the relationship between organisational structure, for instance, institutional and occupational orientations. Institutionally oriented individuals who respond to standardised procedures and rules will tend to be more satisfied in an environment that is characterised by high formalisation and centralisation than the occupationally oriented individual who enjoys autonomy in their work and involvement in decision making. Bluedorn (1979) found strong support for a model of turnover in which job satisfaction, as a function of organisational structure and environment, predicted turnover in U.S. service personnel. Military recruitment may need in future to provide more realistic job previews to prospective recruits.

Generally positive perceptions of the work environment (psychological climate) were associated with higher levels of job satisfaction. This finding supports previous research into the relationships between perceptions of work attributes and job satisfaction (see chapter four) in civilian samples and the military (James and James, 1992; James and Jones, 1980; James and Tetrick, 1986). Interestingly, the strongest association with job satisfaction from the PC variables was job challenge, autonomy and importance. Many observers emphasise the importance of leadership

[15] This may help explain the lack of association between rule observation and job satisfaction. The penalties in the Army for violation of rules are powerful and punitive suggesting compliance is swiftly inculcated such that it becomes second nature and not a source of stressors in and of itself.

behaviours in the establishment and development of group cohesion, morale and esprit de corps in the military (e.g. Labuc, 1991; Manning, 1991; Palmer, 1991), however in the present study leadership behaviours were the least predictive of job satisfaction among the significant climate components. This finding may reflect to some degree the occupational trend that Bruhns (1991) suggests is apparent in the New Zealand Defence Force. For instance, Bruhns notes there has been a change in emphasis in the New Zealand Defence Forces toward more contemporary leadership styles. In addition, the occupational model suggests that individuals will compare their jobs to those outside the military organisation rather than internally (Moskos, 1986). Traditional military job design may be compared unfavourably with civilian cohort jobs and issues such as autonomy will become a more salient influence on satisfaction than leadership styles. The lack of association between workgroup perceptions and job satisfaction may be similarly explained. The institutional model emphasises group cohesion suggesting that in the institutional military, workgroups will be perceived positively. In the present research, the combat group found their workgroups to be more friendly, cooperative and warm, compared to the occupational group. Again, the occupational trend may serve to nullify any association between workgroup perceptions and job satisfaction as group cohesion becomes less relevant and self-interest more influential. A further possible explanation for this finding is related to level of analysis. There is a possibility that individuals answered the items associated with this component from different reference points i.e. for some items individuals may have answered in relation to their immediate environment, whereas for other items they may have considered that workers who they interacted with intermittently also belonged to their workgroup. However, examination of alpha (.80) indicated that this component had the highest reliability of all climate components, suggesting that individuals answered items similarly.

A research goal in study one was to assess how much perceptions of organisational structure and psychological climate added to the explanation of job satisfaction over and above those explained by personal characteristics. Fredland and Little (1983) have suggested that the extent to which personal characteristics or work

environment attributes contribute to job satisfaction is an important consideration in the military. For example if personal characteristics are the primary influence on job satisfaction then perhaps the military should concentrate on hiring people with the appropriate characteristics, however if job related attributes contribute substantially to job satisfaction then the potential for influencing that relationship can be addressed through job redesign. In study one the three groups of variables together explained 57% of the variance in job satisfaction (adjusted), and individually each block explained approximately a third of that variance. Notwithstanding the possible limitations of the tested model in fully explaining the interrelationships between sets of variables (see pg. 245), it appears that perceptions of psychological climate mediate the effects of personal characteristics and structure. Consequently the military needs to not only focus on valid methods of selection, but also must be aware of the influence of the work environment on the individual. To a certain extent, this concern for the individual is fundamental to the occupational model, and despite the concerns about its influence on military effectiveness, appears to be inevitable if the military are to maintain a committed and satisfied workforce.

Psychological Well-being

Summary of Findings

Personal characteristic variables contributed a great deal to psychological well-being, with the climate component job challenge, autonomy and importance playing a lesser part. Higher ratings of job satisfaction and self rated health, were related to higher psychological well-being. The strongest association with positive psychological well-being were low negative affect, shorter tenure in the Army, having a challenging and satisfying job, perceiving one's health as good and being Maori.

A research goal was to assess the relative contribution of personal characteristics, organisational structure and climate to psychological well-being. Personal characteristic variables contributed a great deal to psychological well-being (23% adjusted), with other blocks of variables contributing only a further 13% variance

in psychological well-being.

Previous research on the New Zealand Army found years of service positively related to psychological well-being, albeit for Vietnam veterans (Vincent et al., 1991), suggesting that for veterans increased military service provides a protective framework for placing combat experience in context and moderating its effects. For current Army personnel, increased years of service in the Army was related to lower levels of psychological well-being. This may be a function of the non-combatant nature of the New Zealand Defence Forces over recent years. Apart from United Nations deployment, there is little opportunity for personnel to use the skills they have been trained in. For most individuals, they will be trained for a job they will never do, unlike the Vietnam veterans, who if they remained in the military, to some extent had their experience validated by continued exposure to military ethos. Job challenge, autonomy and importance was the only work attribute that contributed significantly to psychological well-being, suggesting the importance of the work remaining stimulating despite the unlikelihood of combat. Again, caution must be taken on interpreting the relationship between time in the Army and psychological well-being. Time in the Army was not related to well-being in bivariate analyses, and it may be possible that age and income (both highly correlated to time in the Army) act to suppress irrelevant variance in time in the Army resulting in a significant relationship in multivariate analyses.

Negative affect had the strongest association of all IVs with psychological well-being, supporting previous research where negative affect has influenced the relationship between stressors and strains (e.g. Schaubroeck et al., 1992; Burke et al., 1993; Payne, 1988; Schroeder & Costa, 1984). As people high in negative affect are more likely to experience distress and dissatisfaction and have a negative outlook on life in general (Watson & Slack, 1993), this finding is not surprising.

As with job satisfaction, Maori report slightly higher levels of well-being. Novaco, Cook & Sarason (1983) have argued that the military environment provides an opportunity for "social mobility for those who are otherwise excluded from the

more traditional avenues of personal and social advancement" (pg. 386), suggesting that for minorities such as Maori, the non-discriminatory environment of the military may provide a more "level playing field" than the civilian environment and hence higher levels of well-being.

Despite the lack of relationships between job characteristic variables and well-being, job satisfaction still contributed to variance in psychological well-being, although only 2%. Hesketh and Shouksmith (1986) also found job satisfaction positively related to psychological well-being. These findings provide only limited support for the predominant theoretical perspective on the consequences of job satisfaction, where satisfaction with work will "spillover" into other areas of people's lives (Rain et al., 1991).

The finding that individuals ratings of their health also contributed to psychological well-being is not surprising. Previous research has consistently found positive associations between indices of physical and mental health (e.g Brenner, 1979; Vaillant, 1979). However, it should be noted that both job satisfaction and self-rated health contribute only very small amounts of variance in psychological wellbeing (2% and 3% respectively). In fact, work attributes, job satisfaction and self-rated health add little individually to the explanation of total variance in psychological well-being over and above that explained by personal characteristics, with the possible exception of the benefits of having a challenging, autonomous and important job. These findings suggest that the work environment in the Army contributes little to the overall levels of psychological well-being of personnel, and that personal circumstances and individual differences are more likely to explain differences in well-being. Given the all encompassing nature of the military environment one would expect there to be a high correspondence between work related variables and indices of mental health. However, these findings may reflect the occupational trend apparent in the New Zealand Army in that work life may be coming more separate from personal and family life, supporting a theory of segmentation (Rain et al., 1991). Although this theory proposes an absence of a

relationship between work satisfaction and life satisfaction it also suggests that feelings about work characteristics are independent of feelings about non-work characteristics. The lack of any substantial contribution to well-being from job satisfaction lends some support to this notion. The link between work characteristics and psychological well-being might be better explored by examining the interface between home and work. For instance, it may not be psychological or organisational climate of the Army that contributes to well-being (i.e. not the actual work), but the organisational culture which permeates the whole military lifestyle i.e. both work and non-work areas. While climate consists of the "activities and processes" that are unique to an organisation, culture consists of the "norms and values" that prompt them. As noted in chapter three, psychological climate is seen an individual attribute whereas culture is regarded as an organisational attribute. As Cotton (1988) argues military culture is directly related to issues of "organisational values and perceptions of membership obligations, patterns of socialisation, and social definitions of the right policies needed to make organisations effective" (pg.45). An examination of culture may provide links between work and non-work activities and may also provide the opportunity for a more comprehensive measurement of the institutional-occupational framework. As culture to a certain extent is concerned with what we learn and how we behave by examining symbols and rituals and how they are manifested in shared values, norms and expectations, the examination of the I/O model in terms of military culture may be useful in determining the factors which contribute to mental health for military personnel[16].

Self Rated Health

Summary of Findings

Personal characteristics variables were responsible for the largest part of the explained variance in self rated health, however the effects of these variables were mediated through structure and climate variables which contributed little to self

[16] The examination of the I/O thesis in terms of culture is in line with the suggestion by Segal (1986) that the communal nature of the military requires a more holistic method of investigation. Segal advances the increased use of ethnographic research in the military.

rated health. Those with higher job satisfaction and psychological well-being rated their health more highly, but these contributions were small.

Given the obvious relationship between age and physical health (e.g. Aravanis, 1983; Kohn, 1985) and the consistent relationships between indicators of socioeconomic status and physical health (e.g. Syme & Berkman, 1976; Marmot et al., 1987), the failure of personal characteristics to contribute independently to ratings of health is surprising. A possible explanation is the relatively restricted range of scores on a number of personal characteristic variables compared to the general population. For instance, the majority of subjects in the present study were under 41 years of age, suggesting that age related morbidity would be less detectable than for an older aged sample. In addition, less than 20% had post-school qualifications and the majority (70%) earned between $17,000 and $31,000. Anastasi (1988) notes that any correlation coefficient is affected by the range of individual differences in the group, and restriction in range may serve to underestimate relationships. Higher socioeconomic status is thought to be protective of ill-health in that it provides resources against adverse situations and/or assists the individual in securing positive social and psychological competence. For instance, some suggest that low income may result in poor nutrition and inadequate health care (Rose & Marmot, 1981; Millar & Wigle, 1986), while others suggest socioeconomic status may account for a higher presence of high risk behaviours (e.g. Blaxter, 1987) or increased exposure to adverse environmental conditions (Kaplan et al., 1987; Syme & Berkman, 1976). In addition, higher levels of education may provide the individual with the opportunity to acquire positive attitudes about health, and the money and skills to access preventative health care services. However, in the military the environment is to a large extent controlled. Personnel have free and easy access to medical and dental service. They may avail themselves of service provided housing and meals and the availability of these services is unrelated to income or educational level. Thus, to a certain extent in the military situation conventional predictors of poor health are not as relevant as in civilian samples.

Two structural variables contributed to self rated health, however both were positively associated with ratings of health. The more individuals had to consult organisational rules in fulfilling their responsibilities and the less they participated in setting goals and policies the more highly they rated their health. This finding is antithetical to previous research on the effects of work characteristics on health. Karasek (1979) has argued that conditions of low worker control (arguably reflected in job codification and index of participation) result in two types of strain. First where job demand is low, employees will suffer from learned helplessness, unable to make decision or solve problems. Second where job demand is high, a state of arousal in the worker is produced that in conditions of low control, cannot be appropriately channelled resulting in a heightened, longer lasting physiological reaction. Despite the interactive nature of this model, a number of studies have found main effects on physical health indicators for job control (e.g. Karasek, 1990; Landesbergis, 1988; Schnall et al., 1990).

A possible partial explanation for the present finding is that it in a military setting, higher personal control may in fact be anxiety provoking and lead to higher physiological reactivity. To a certain extent the military acts very paternalistically. This we have argued, in the form of high centralisation and formalisation, is detrimental to job satisfaction. However, the presumed link to health may be less clear. Situations that may lead to higher job satisfaction may independently lead to heightened physiological arousal. Amick & Celentano (1991) suggest that even satisfied workers can experience health problems due to the demands of their work i.e. work overload. For instance, having more say in how policies and goals are decided may provide the individual with more psychological reward from their job. At the same time conditions may arise where the added responsibility of participating in policy decision making may prove anxiety provoking which in turn may impact physiologically on the individual through heightened arousal. In the military, centralisation and formalisation may be protective physiologically in that anxiety or tension provoked by increased responsibility and participation are minimised.

A more parsimonious explanation for the positive relationship between indicators of formalisation and centralisation is that job satisfaction acts to suppress irrelevant variance in job codification and index of participation by virtue of their intercorrelations and therefore enhances their importance in the prediction of self rated health. It should also be noted that despite the positive betas, the structural variables only add 2% to the explained variance in self rated health.

Of the climate components, only workgroup cooperation, friendliness and warmth contributed to self rated health. Interestingly this component was not related to job satisfaction or psychological well-being in multivariate analyses. This finding may be interpreted in light of the social support literature. Sutherland and Cooper (1988) note that social relationships are important interpersonal factors in the work environment. Significant relationships between low social support and high incidence of morbidity and mortality are consistently found (Shumaker & Hill, 1991). Studies have shown that both supervisor and co-worker support are important factors in the stressor-strain relationship (Haynes & Feinleib, 1980; Kasl & Wells, 1985; Kirmeyer & Dougherty, 1988; LaRocco et al., 1980). Still others have shown that support from spouse, family and friends can also affect work related stress outcomes (Ganster et al., 1986). The possibility of examining informal social networks to capture the home/work interface of social interaction has already been mentioned. Clearly, military personnel derive some form of protection from having co-workers who they perceive as warm, cooperative, supportive and friendly.

The finding that job satisfaction was positively associated with self-rated health supports previous findings on the relationship between job satisfaction and various indices of health (e.g. Amick & Celentano, 1991; Barnett et al., 1991; House et al., 1979; Kirkcaldy & Cooper, 1992; Matthews et al., 1987), and self reported ratings of health (Brooke & Price, 1989; Edwards & van Harrison, 1993; Fox et al., 1993). Previous analyses in study one support the general contention that lower levels of stressors are associated with higher levels of job satisfaction. Fletcher (1991) notes that job satisfaction mediates the relationship between

stressors and strains. Cox and Fergusson (1991) suggest that mediators are responsible for the transmission of an effect and may explain how external physical events take on psychological meaning.

The relationship of work related stressors to self rated health in the present study is not large. However, perceptions of structure and psychological climate did contribute over half the explained variance in self rated health.

A final research goal in study one was to assess the relative effects of membership in I/O groups on job satisfaction, psychological well-being and self-rated health. I/O membership was not associated with either of the dependent variables in regression. Although institutional members differed from occupational members in their perceptions of a number of organisational characteristics, they did not differ significantly in their levels of job satisfaction, psychological well-being and self rated health. Explanations for the lack of justification for aggregating climate data also apply here (see above). Simply, the broad I/O distinctions used in the present research may represent groups that differ structurally, however the composition of the groups are too heterogenous to detect differences in outcome variables. Future research could address this problem by using more specific categories of employees based on immediate workgroup, or an analysis of job similarities, combined with measurement of individual I/O orientation.

General implications and limitations of study one will be discussed fully later.

8.2 Study Two

8.2.1 Factors contributing to post-discharge employment status and adjustment

Summary of Findings

There were no differences in employment status, job satisfaction, psychological well-being and self rated health between individuals discharged from occupational corps and individuals discharged from institutional corps. Those who looked for work prior to discharge were more likely to be in paid employment however those

who engaged in training after discharge were not. Rank, time in the Army, pre-discharge training and making career plans prior to discharge did not increase the likelihood of being in paid employment. Those in paid employment reported higher levels of well-being and rated their health more highly than those not in paid employment.

In study one, a model proposing a process by which perceptions about work environments are related to mental and physical well-being was applied to a military situation. It was shown that there is a structural differentiation within the New Zealand Army in line with Moskos's (1977) model of institutional/occupational organisation. A main objective of study two was to investigate whether Moskos's Institutional/Occupational model of military organisation was related to post-service adjustment. Gade (1991) has noted that those who hold non-combatant jobs may benefit more from their military experience because they are more likely to learn skills useful for post-service employment. The failure to find any differences between the two groups on dependent variables is once again probably attributable to the broad I/O classifications used. It has been noted above that more homogeneous groupings are probably necessary to detect differences in outcomes. Two further military experience variables predicted to contribute to post-service employment status failed to reach significance. It is probably, not the time spent in the Army or the rank one reaches, but more the way that time is used that predicts future employment status. There is evidence to suggest that those who increase their education while in the military report greater likelihood of post-service full-time employment (Gade et al., 1991). The ability to look for and set up work opportunities before discharge assisted post-employment prospects, however pre-discharge training was not an effective employment strategy. The quarter who participated in training for a civilian career prior to discharge were no more likely to be in paid employment that those who didn't. Whether this is due to the type of course undertaken is unclear.

Post-discharge training only predicts employment status to the extent that those

who were in further training were less likely to be in full-time paid employment, for obvious reasons. One aspect of military experience that was not investigated in regard to post-service employment status was the trade the individual had acquired while in the Army. As previous research has shown basic military training generally does not enhance post-service employment prospects (e.g. Bartling & Eisenman, 1992; Gade, 1991; Gade et al., 1991; Phillips et al., 1992), this factor was not examined. It may be in future with increasing occupationalism of the military, those with highly specialised or technical skills may find post-service employment easier than their less qualified military cohorts, however the increasing competition in the civilian workforce for skilled jobs may nullify this advantage.

Surprisingly, age, education, ethnicity and sex, all related to employment status (Statistics New Zealand, 1994), were not associated with post-service employment status. Again, a possible explanation is the relatively restricted range of scores on age and education variables compared to the general population (Anastasi, 1988). It may be more fruitful in future research to have some measure of prior cognitive ability in order to fully assess the effects of military training and education on post employment status. The present research found no differences between Maori and non-Maori in employment status, although previous research has shown ethnic minorities were less likely to be in full-time employment than whites on leaving the military (Gade et al., 1991). The present finding suggests, that Maori may benefit from Army service in comparison to their non-serving Maori counterparts. For instance, contrary to the present finding, in the general population, the unemployment rates for Maori are higher than for non-Maori (Statistics of New Zealand, 1994), supporting research that has found positive employment and economic advantages for minorities on discharge from the military compared to their civilian minority counterparts (Browning et al., 1973; Phillips et al., 1992; Segal et al., 1978). Males appear to more likely to be in paid employment, however this effect is mediated by transition experience which reflects the higher rate of participation by unemployed females in post-service training than males (50% and 35% respectively). It should be noted that the variance explained in

employment status by the study variables was only 11%.

These findings suggest that the military needs to be more sensitive to the educational and training prospects of their employees prior to discharge. Novaco et al. (1983) suggests that military recruitment campaigns are designed to appeal to a desire for advanced education, technical training, and upward social mobility. The assumption that military training is beneficial in terms of post-service employment is not justified by these findings. In addition, pre-discharge training toward a civilian career does not appear to enhance employment prospects. The Army does offer the opportunity for voluntary resettlement study leave, however only a small percentage of the sample (12%) availed themselves of this. There is the possibility that some were unaware that this option was available to them, suggesting that the Army needs a more coordinated process for those seeking to leave the military. Continuing formal education or training after discharge appears to be a favoured option, however whether this leads to better employment opportunities is unknown.

Findings that those in paid employment reported higher levels of psychological well-being and rated their health more highly than those not in paid employment supports previous findings with regard to the deleterious effects on mental and physical health of unemployment and/or low incomes (e.g. Dooley & Catalano, 1980; Fleming et al., 1984; Fryer & Payne, 1986; Jenkins, 1991; Kasl et al., 1975; Macky & Haines, 1982; Marmot et al., 1987; Syme & Berkman, 1976)

8.2.2 Perceptions of Organisational Structure as a function of size and occupation

Summary of Results

Perceptions of organisational structure did not differentiate between occupational types nor between organisations of different size. In general, those in routine work did not perceive their work environments as any more centralised or formalised than those in more professionalised work.

It has been argued that the type of work performed is related to organisational structure (pg. 42), such that highly structured environments are more prevalent where occupations are routine and require fewer technical or specialist skills. The failure to find this in the present study may be related to the way occupations were classified using the New Zealand Standard Classification of Occupations (Department of Statistics, 1990). Occupations can be categorised by major group, sub-major group, minor group and unit group. For the purposes of analysis, only major occupational categories were used as finer categorisation would have resulted in groups too small for statistical analysis. As it was, one group, Agriculture and Fisheries Workers, had to be dropped because there were only six individuals under that general occupational heading. It is possible that these nine categories provided too broad a classification of occupations for any justification of occupational homogeneity and consequent perceptual homogeneity. Given a larger sample of employed subjects, the census classification system allows analyses at more specific levels. For instance, the category of "Service and Sales workers" can be further divided into two sub-major groups, eight minor groups and finally 16 unit groups, providing much more homogenous groups, where differences in perceived organisational structure are more likely to be attributable to occupational similarities.

Generally, larger organisations are associated with higher formalisation and more decentralisation (Martin & Glisson, 1989). The failure to replicate this finding may be related to the way size was measured. Generally, the size of an organisation refers to the total number of equivalent full-time employees. In the present research, subjects were asked to report how many people worked at their place of work. Comparisons of this information with that provided on the type of organisation worked for (e.g. large international, large national, large local organisation etc.) suggested that there was some confusion as to the intention of the first question. Subjects appeared to answer the first question in relation to their immediate work environment rather than their employing organisation. The self-report design precluded the use of organisational data to confirm the veracity of the answer to the first question. Although the question on types of organisation by

relative size provided useful and appropriate examples, the classification procedure did rely on the subjective judgement of the individual. In future research, it would be useful to have organisational data on employee numbers and perhaps a less ambiguous question with regard to immediate co-workers for analyses at different organisational levels. For instance, employees may be employed by a large national organisation such as Telecom but may be based in a small rural town where they work with only a few other employees. The possibility of interaction effects between organisational and workgroup size on perceptions of organisational characteristics may be of future interest. In addition, there are probably interaction effects between the size of an organisation and type of occupation on perceptions of organisational structure. For instance, individuals may be in a relatively unstructured job such as academia, however they are subject to the rules and regulations of a large bureaucratic organisation. The present findings do not preclude the possibility of mechanistic and organic distinctions based on occupational groupings and organisational size, however these findings do suggest the importance of a multidimensional assessment of the organisational context. Future research should endeavour to obtain organisational data on these variables, on larger samples, and investigate the possibility of these variables interacting with each other to influence organisational perceptions.

8.2.3 Organisational Climate

Summary of Findings

The criteria for assessing the appropriateness of aggregation of data to occupational and organisation types for individuals in separate organisations were not met. Group differences on climate perceptions were not found, individuals within groups did not share climate perceptions, and reliabilities of aggregated scores were low.

Adams et al., (1977, cited in Jones & James, 1979) have suggested that it should be possible to aggregate the perceptions of individuals who work in different groups but have highly similar jobs. Psychological climate components have been found to be invariant over a number of occupational settings (James & Sells, 1981). Jones & James (1979) found there was greater similarity of perceptions for similar

divisions from different ships in their Navy sample than for dissimilar divisions from the same ship, such that the type of work done was more important in the formation of individual perceptions than was the formal organisation in which they worked. Confirmation of aggregation criteria across different organisations based on size and occupation would provide convincing evidence that environmental variables are a primary influence in the development of psychological climate perceptions supporting the structural approach to the etiology of climate. However the finding from the present study that people in different organisations do not perceive their work environment in similar ways due to similar functions and work conditions supports James and James (1989) contention that these variables are *distal* environmental variables that have a more indirect and complex connection with perceptions of psychological climate. Further, this finding supports the perceptual approach to the formation of climate as an attribute of the individual (e.g. James & James, 1992). However, given the reservations with regard to categorisation of occupations and organisations mentioned above, the structural argument can not be entirely ruled out.

8.2.4 Factors contributing to Job Satisfaction, Psychological Well-being and Self Rated Health in Ex-Army Personnel

Job Satisfaction

Summary of Findings

Personal characteristic and structural variables did not contribute greatly to levels of job satisfaction for the ex-Army personnel. The effects of income, tenure and hierarchy of authority were mediated by climate components. Age and negative affect were not related to job satisfaction. None of the structural variables were associated with job satisfaction. The climate-job satisfaction relationship was similar to study one, although the magnitude of the relationships was larger for ex-Army personnel.

While research on personal characteristics provides important information with regard to the individual's experience of work, it is clear from the research reviewed

in chapter four that the relationships with job satisfaction are not clear. Studies have generally shown small and inconsistent effects of variables such as age, gender, education and ethnicity. As Gruneberg (1979) suggests, demographic differences may be less influential in the stressor-strain relationship because individuals to some extent may initially select jobs from which they hope to derive satisfaction regardless of their age, gender, ethnicity etc. While the potential for these variables to confound the stressor-strain relationship needs to be taken into account, it would appear that other variables are more influential on the individual's experience of work.

It is not easy from the available data to determine the relationship between negative affect and job satisfaction. In the Army sample negative affect was associated with lower job satisfaction however in the ex-Army group there is no association. It must be remembered that in the present study negative affect was measured as "transient fluctuations in mood over a time frame" (Burke et al., 1993). Respondents were asked to rate descriptive terms of mood states which they had experienced during the last month. However, the job satisfaction scale asks respondents to report their evaluations of satisfaction with aspects of their job in their present situation. It is possible that the lack of association between negative affect and job satisfaction in the ex-Army group is due to their relative opportunities for job mobility, job enlargement and job enrichment compared to the Army sample i.e. negative affect may be a function of the situation over the past month however ex-Army individuals may have greater control over their work situation and greater opportunities to change it than those in the heavily prescribed Army environment. Bolger, DeLongis, Kessler & Shilling (1989) have noted that there is a potential problem of "simultaneity" in the relationships between stressors and mood i.e. negative mood one day does not necessarily influence either negative mood or strain another day. It may be that for ex-Army personnel responses to the negative affect scale are reflective of their mood associated with previous work conditions and is unrelated to the satisfaction they now feel for their present work conditions.

Unlike the Army sample where highly centralised and formalised work environments were related to lower job satisfaction, there were no such associations for the ex-Army sample. This is despite similar bivariate associations between structural variables and job satisfaction for both groups (see tables 16 and 31). However, it should also be noted that correlations between structure and climate variables are substantially stronger for the ex-Army sample, suggesting that organisational structure in the Army is a much more salient, or independent influence on the individual's feelings about their job than in civilian organisations. For Army personnel, structure is highly visible via the hierarchy of command (Bruhns, 1991), and no matter what the type of work undertaken the presence of an underlying structure is constant and affects how they do their job and perhaps has a more pervasive effect on how individuals evaluate their job satisfaction.
For ex-Army personnel, perceptions of structure and climate are more closely linked suggesting structure relates to job satisfaction by reducing the possibilities for the formation of positive psychological climates. Previous civilian samples have found highly structured work environments related to lower job satisfaction (see chapter four), however much of this research has not included measures of other work environment perceptions such as psychological climate suggesting that the relationship between structure and job satisfaction may have been overestimated. To the authors knowledge the present research is the only study investigating job satisfaction in the military that includes both structure and climate variables, thus it is difficult to say whether these findings represent real differences in the pattern of relationships for these variables between military and civilian samples.

As with the Army sample, generally positive perceptions of the work environment (psychological climate) were associated with higher levels of job satisfaction supporting previous findings (James & James, 1992; James & Jones, 1980; James & Tetrick, 1986). Again, having a challenging, autonomous and important job appears to be an important aspect of satisfying work. The lack of association between workgroup perceptions and job satisfaction is perhaps more understandable in the ex-Army sample. As civilian organisations represent to Moskos (1977) the

epitome of the occupational trend seen in the military, then workgroup characteristics such as cohesion become less relevant and self-interest becomes a prime motivator.

It appears that for the ex-Army civilian sample perceptions of their psychological climate are of primary importance in how satisfying they rate their jobs, and personal characteristics and organisational structure are only of importance to the extent that they may influence these perceptions.

The large amount of explained variance in job satisfaction (74%) may be cause for concern given the relatively small sample size. However, Tabachnick & Fidell (1989) suggest that a minimum cases-to-IVs in regression analysis ratio is to have at least 5 times more cases than IVs, a criteria met in these analyses.

Psychological Well-being

Summary of Findings

Personal characteristic variables contributed a great deal to psychological well-being, with the climate component workgroup cooperation, friendliness and warmth playing a lesser part. Structural variables and job satisfaction add little to explained variance in psychological well-being.

Negative affect had the strongest association with psychological well-being, supporting previous findings linking negative affect to anxiety and depression (Watson, Clark & Carey, 1988) and psychological distress (Watson, Clark & Tellegen, 1988). Interestingly, having a cooperative, friendly and warm workgroup (the only significant climate component) was associated with lower ratings of psychological well-being. To some extent this might be explained by previous findings which suggest that individuals high on negative affect are less socially integrated. For instance, Watson and Clark (1984) have found that individuals with high levels of negative affectivity under conditions of stress have less need for affiliation. They note these individuals are more likely to be loners characterised by aloofness, hostility and distrustfulness. Although, examinations of betas

suggests that these two effects are independent of each other. Moskos's (1977) model would suggest that the more occupational the job the more likely the individual is to be acting out of self-interest and the good of the group is irrelevant. However, how this would be reflected in higher ratings of well-being given the extensive evidence for the positive psychological benefits of social support systems is unclear. Future research may be able to clarify this issue.

The inclusion of job satisfaction in the equation appears redundant. It adds nothing to the explained variance in well-being and only serves to mediate the significance of job challenge, autonomy and importance. These findings are similar to the Army sample, where job satisfaction contributes only an extra 2% to explained variance in psychological well-being. The lack of association between the majority of work related variables and psychological well-being is surprising given the centrality of work to most people's lives. Again these findings provide little support for the "spillover" of satisfaction from one sphere of life to another (Rain et al., 1991).

Self Rated Health

Summary of Findings

Personal characteristics contributed the most to self rated health, however income was the only significant variable. Structural and climate variables were not related to health ratings. Job satisfaction had the strongest association with self rated health.

In this analysis, negative affect was not associated with individual's ratings of their health. Burke et al. (1993) found negative affect introduced spuriousness into the relationships between work stressors and strain outcomes. More importantly, Watson and Pennebaker (1989) have argued that negative affect can exaggerate the relationships between stressors and strains where subjective measures of health are used. A possible explanation for the lack of direct association is the possible severity of health disorders. Watson and Pennebaker (1989) have argued that subjective health measures contain two separate components. One is objective,

health-relevant and organically valid, while the other is psychological and subjective (related to negative affect). They argue that in more broad based samples there is a probability of an increased incidence of more serious illnesses, hence the organic component of subjective health measures will be more salient and the psychological component less so, thus the effect of negative affect will be diminished. In the present research, objective measures of health status were not obtained for either samples, however, the nature of the military setting provides for easily accessible and free health care, and severe or chronic illness usually results in discharge from the military. In bivariate analyses negative affect was significantly associated with self-rated health for the Army sample, supporting Watson & Pennebaker's assertion. However, in both samples the inclusion of work related variables, although not generally associated with subjective health themselves, tends to mediate the effect of negative affect, suggesting that negative affect is not directly associated with how people rate their own health, but is related only to the extent that the negative mood state pervades perceptions of other environmental characteristics which are related to subjective health ratings. This supports the general argument that negative affect may serve to spuriously inflate the relationships between stressors and strains.

People on higher incomes reported higher ratings of health supporting suggestions that low income may result in a number of consequences adverse to health (Blaxter, 1987: Kaplan et al., 1987; Millar & Wigle, 1986; Rose & Marmot, 1981; Syme & Berkman, 1976).

Job satisfaction contributed a further 7% of explained variance in self-rated health supporting previous findings on the relationship between job satisfaction and various indices of health and self reported ratings of health (see chapter four). The lack of effect for work related variables supports the argument that job satisfaction mediates or transmits the effects of these variables on strain outcomes (Fletcher, 1991; Cox & Fergusson, 1991).

8.2.5 Comparing Samples

Summary of Findings

Army personnel perceived their work environment to be more centralised and formalised than the ex-Army personnel, they reported less satisfaction with their jobs and poorer psychological well-being. There were no differences between the two groups on personal resources.

Comparisons between samples on perceptions of organisational structure provided further support for Moskos's I.O model of military organisation and previous research on the New Zealand Defence Force (Bruhns, 1991). The trend appears to favour Moskos's model in that the further a group was removed from the traditional military framework, the less structured individual members perceived their environment. Not only did the civilian sample perceive their work environments as less centralised and formalised than the Army group, but the support group, (thought to be more occupational), and the ex-Army group did not differ on their perceptions of centralisation, providing further support for the occupational trend in the New Zealand Army.

The finding that Army personnel were less satisfied with their jobs than civilians supports previous findings (e.g. Woodruff & Conway, 1990; Blair & Phillips, 1983; Fredland & Little, 1983). Fredland and Little (1983) have suggested a number of reasons why military personnel may have lower job satisfaction than civilian individuals (see chapter five). Examination of climate components and job satisfaction facets reveals a number of underlying themes of the work experience for Army personnel. A general theme appears to be the lack of control one has over the content and process of the work. For, instance, lack of autonomy, freedom of work practices and the inability to use skills appears to be an important concern for personnel. In addition, the leadership or management in the Army was generally considered poor. The first finding is not unusual given the restraints placed on individuals within the military setting, and these attitudes have been found with other military samples (e.g. Bowers, 1976; Blair & Phillips, 1983). However, the lower ratings for leadership and management in the Army is of concern given the emphasis placed on the role of the leader in military

cohesiveness (e.g. Johns et al., 1984). It has been argued that one consequence of the increasing emergence of the occupational model in the military, is the decline in traditional leadership styles (Cotton, 1988; Faris, 1988; Moskos & Wood, 1988). Johns et al. (1984) have argued that rational management, as espoused by the occupational model, results in junior personnel believing that their leaders really do not care for them as individuals. In addition, Wood (1988) says that management relationships are assumed to be less personal, less caring and more characteristic of contractual relationships. Leadership, he suggests, is more personal, oriented toward "shared goals and values and more characteristic of organisations demanding loyalty and self sacrifice for the greater good" (pg.35). It has already been noted that these styles of leadership can be equated to transactional and transformational leadership respectively, and that previous military research has found that transformational leadership is more strongly related to perceived higher levels of leader effectiveness and subordinate satisfaction with the leader than transactional leadership (Deluga et al., 1991). If the continuing trend in the Army is toward a more occupational model then junior personnel will be increasingly less satisfied with the behaviour and performance of the superiors as they move to a more rational management approach to leadership. Moskos and Wood (1988) suggest that to counter this trend, promotion criteria should favour leaders who promote group cohesiveness, affirm altruistic norms and who provide additional support to their subordinates. In addition, they suggest the inclusion of peer and perhaps subordinate evaluations in the promotion process.

The finding that ex-Army personnel report higher levels of psychological well-being supports previous research. It can be argued that the very nature of the military organisation which has authority over a broad range of work and non-work related behaviours, reduces a sense of control over one's life. Previous research has found that various indices of control have been related to lower levels of well-being and higher levels of poor mental health (e.g. Abella & Heslin, 1984; Wallston & Wallston, 1978).

Army personnel health ratings failed to differ significantly from ex-Army

personnel. It can be argued that military personnel will have higher average physical condition due to the nature of their training, the availability of health care and the attrition of those with poor health. The availability of health care may be moderated by the higher incidence in the military of adverse health behaviours such as smoking and drinking compared to the civilian population (e.g. Anderson & Mitchell, 1992; Bray, Marsden & Peterson, 1991; Waigandt, Evans & Davis, 1986). Finally, although chronic illness or disability will have greater repercussions for military tenure, the same could be said to a certain extent for those in the civilian workforce in times of high unemployment.

It could be argued that the nature of the military environment might affect the quantity and quality of personal resources available to personnel, and would thus provide a partial explanation for the differential experiences found for the Army and ex-Army groups. However the groups on average did not differ on the coping resources they employed or the amount of social support they received. This suggests that generally the availability of personal resources was not a determinant of differential experiences for the two groups. However, individual differences in coping and support were not investigated.

8.3 General Limitations

Limitations associated with specific findings have been discussed in previous sections. The following section discusses some more general limitations of the research as a whole, which must be acknowledged.

Obviously the cross sectional nature of the study limits the extent to which causal inferences may be made regarding the antecedents and effects of study variables. With regard to the mental and physical health outcome variables, it should be noted that most health outcomes are generally progressive in nature and require longitudinal study to fully investigate pathogenic processes. In addition, although the general stressor-strain model tested is appropriate for the present research goals, owing to the nature of cross-sectional data, assertions of precise causal ordering have not been attempted. It is acknowledged that other possible models exist and

more complex forms of nonrecursive connections could be studied in the future. Further, although this model allows examination of associations between blocks of variables and subsequent variables, it does not test the possibility of interactive effects that may change the linear additive model. However, James and Jones (1980) note that evidence for interactive models in the climate literature is weak or inconsistent. More recently, Ostroff (1993) suggests that a linear model in which person and situation factors are mutual precursors of individual behaviour and attitudes may be more appropriate.

A further consideration is the possibility of unmeasured variables that may affect stressor-strain processes. In the present research, attempts were made to include a comprehensive range of variables that have been cited in the work related stressor-strain relationship, and the present research is one of the few studies that includes personal characteristics, structural variables, climate components, job satisfaction and health outcomes together in analyses. As some researchers have also argued that observed relationships between stressors and strains are considerably influenced by negative affectivity (a tendency to experience negative affect and to view oneself and world negatively) a measure of negative affect was included.

Naturally, there are limitations as to how the findings from the Army sample generalise to other civilian populations given the unique environment of the military. However, findings are not dissimilar from previous work related stress literature across a wide variety of occupational settings (Cooper & Payne, 1988; Cooper & Payne, 1991; Fletcher, 1991; Ganster & Schaubroeck, 1991), suggesting that findings may be generally applicable to at least other services within the military, other western militaries and possibly to comparably structured civilian organisations e.g. police force, fire fighters, prison officers, security forces. Although a non-random non-probability sample, the Army group were similar to the New Zealand Army as a whole across a number of demographic and military variables. Self-selection bias was not considered a problem as only three subjects declined to participate after being informed of the nature of the study.

There was a poor response rate for the ex-Army sample. Of the 915 individuals who had left the Army since July 1990 only two were not included in mailing list as they provided insufficient addresses. However, 206 questionnaires were returned unanswered as individuals had provided incorrect addresses or addresses that quickly became outdated. It is unclear whether the non return of a large number of questionnaires could be attributed to incorrect address information or a disinclination to participate. Clearly, this response rate introduces bias into the sample and the extent to which the findings are replicable in other contexts and with other groups is unclear. The problems of low response rates in military samples has been acknowledged elsewhere (Gade, 1991). For example, the Veterans Attitude Tracking Study, a nationally representative sample of all-volunteer era veterans in the U.S., had an overall response rate of only 13% (Gade, 1991). As dischargees are generally young, they tend to be highly mobile, often going overseas, making them more difficult to trace. It is difficult to see how future studies could improve on these rates without introducing costly contact procedures, however research in this area would benefit from a focus on a larger and more representative population of ex-military personnel. In addition, in the present research, cost restrictions precluded the sampling of non-veteran civilians. It is likely that ex-Army personnel will differ on a number of personal characteristics from those who have had no contact with the military.

There are a number of measurement issues that may have contributed to the under/overestimation of relationships among the variables in the present study. The findings of this research need be interpreted cautiously due to the heavy reliance on self-report measures. Kasl (1978) has provided a number of reasons why researchers should not continue to rely on subjective reports of the work environment, for instance, conceptual overlap between stressor and strain measures. However, as Schaubroeck et al. (1992) note, although the use of objective or independent measures of variables is perhaps preferable in stress research, this approach is often not economically and practically feasible. For instance, some aspects of the work environment lend themselves to objective or behavioural measures (e.g. work pacing and work load), whereas others, such as role ambiguity

and role conflict are constructs that are best assessed using self-report. Further, the debate surrounding the appropriateness of subjective versus objective measures of stressors and strains can be seen from a theoretical point of view. For instance, the cognitive appraisal model of stress emphasises the importance of the individuals appraisal of work environment demands (Lazarus, 1966). A principle theme of the present research, psychological climate research, centres on the assumption that the emergence of climate is fundamentally embedded within the individual's response to and perception of the environment (James & James, 1992; James & Jones, 1974; James & Sells, 1981). Accordingly, these perceptions are only measurable through self report.

Despite the considerable amount of research in the area, the definition and measurement of what we call work related stressors remains controversial. It has been suggested that the traditional rating scale type measurement of work stressors needs to be reconsidered and thought given to the development of new approaches and strategies which adequately capture the meaning individuals given to events (Dewe, 1992; Dewe, 1989). In the case of self-report measures of organisational structure, it has been noted previously that studies that use objective forms of measurement generate different findings from those that use a subjective or questionnaire approach to measurement (Pennings, 1973, Sathe, 1978). However, it has been argued that each type of measurement taps into different concepts of the same structure. Objective measures reflect the formal structure of an organisation (that prescribed by the organisation), while subjective measures reveal the "emergent structure" (that which is encountered and adhered to by individuals) (Miller & Weiss, 1991). In this respect, subjective measures reflect the response to and perceptions of the formal organisational structure, and as such, are congruent with the objectives of the present research.

The use of a self-report indicator of health status has been criticised (e.g. Kasl, 1978), particularly because of the potential influence of some third variable on both stressors and strains, such as negative affect (Ganster & Schaubroeck, 1991). This is a valid concern given previous research findings (e.g. Burke et al., 1993; Payne,

1988; Schroeder & Costa, 1984), thus potential "third variables" need to be controlled for. What is of further concern is the validity of self-report measures of health status, i.e. do they reflect objective health status. It has been noted previously that five recent epidemiological studies have found self-reports of health to be predictive of mortality (Idler & Kasl, 1991). In addition, Pennebaker & Watson (1988) found that self ratings of symptoms, mood and stress were highly correlated with general physiological changes. Pennebaker and Watson (1988) emphasise that self ratings of health are an important source of information in their own right. They suggest that if people report particular symptoms, then those symptoms will have behavioural consequences regardless of whether corroborating medical evidence exists. Thus, although future research would benefit from the inclusion of objectively assessed health measures, the lack of such measures in the present research does not preclude interpretation of the self-report measure of health (Amick & Celantano, 1991).

Although a distinction can be drawn to a certain extent between subjective phenomena and objective reality, it can be argued that the organisation is largely a function of the people who run it and work for it, and thus their perceptions of the organisation probably reflect the day to day reality of the work environment more than written rules, procedures and chains of command. As Kakabadse & Worrall (1978) note, if organisations are not functioning according to peoples' perceptions on what basis are they functioning? It can be argued that the two approaches are not mutually exclusive, with one being more methodologically sound than the other, but offer equally legitimate indicators of aspects of the work environment (Martin & Glisson, 1989). The use of subjective measures in the present research was largely dependent on the nature of the research being undertaken, and the economical and practical restraints associated with the research.

With the use of self-report measures the potential biasing effects of common methods variance must also be acknowledged (e.g. Brief & Atieh, 1987). A recent review by Spector (1987), however, found little evidence of common method variance among self-report measures, and suggests that properly developed research

instruments, such as those used in the present study, are relatively resistant to the methods variance problem. A further problem associated with self-report measures is the possibility for response set such as social desirability. However, in the present study assurances of anonymity and confidentiality were given in order to reduce the incentives for socially desirable responding. It should also be noted that there is some debate as to whether social desirability is in fact a real problem. McCrae and Costa (1983) argue that correcting for social desirability responding is unnecessary.

The smaller ex-Army sample size for the employment related analyses raises issues of statistical power (Rosnow & Rosenthal, 1989), and requires that caution be exercised in the interpretation of these regression analyses. The sample size meant that the association between psychological well-being and self rated health could not be examined in multivariate analyses due to the increase in the number of independent variables in the equation. Tabachnick & Fidell (1989) note that a minimum IVs to cases ratio in regression analysis is five cases to every IV. Including the two health variables as IVs in regression would have exceeded this ratio. However, the relationships demonstrated in the Army sample, suggest adding these variables in a larger sample may increase total explained variance in both. Of concern in the present study is the possibility of finding "statistically significant" associations that have occurred by chance due to the number of comparisons that have been undertaken. Rothman (1986) argues that adhering strictly to this logic becomes somewhat nonsensical if taken to its full conclusion. The appropriate response to the situation of mulitple statistical comparisons is a topic of much debate (e.g. Saville, 1990; Tukey, 1977). In the present study (in accord with the arguments proposed by Saville (1990)), no adjustments were made to the significance criterion or the calculated p-value. Instead, following Rothman (1986), non-significant as well as significant results have been presented, in order to interpret properly the p-values for the positive findings. This allows the reader to apply their own adjustments to the per comparison alpha (e.g. Darlington, 1990; Holland & DiPonzioCopenhaver, 1988).

8.4 Implications for Future Research

The present research highlights potential future directions for research into work related stress. As has been noted by other researchers in the work related stress area (e.g. Israel et al., 1989; Hesketh & Shouksmith, 1986) there is a need for analyses of more complex multivariate models (that include not only mediating but moderating processes) on a longitudinal basis. For example, it may be useful to measure informal social networks that arise in the work setting that may extend to the non-work arena. We have acknowledged in the present study that other possible models exist and more complex forms of nonrecursive relationships could be studied in the future.

With particular regard to the study of military samples. Gade (1991) notes there is a lack of an adequate research model in military psychology. He suggests there is a need for a new model for military personnel research that allows researchers to assess the long-term and the short-term effects of various military experiences and to evaluate more fully their impact all areas of individual's lives. The present research sought to include a number of work and personal characteristics thought to influence the experience of military life. This was done within the framework of the institutional/occupational model (Moskos, 1977). This model offers a potentially fruitful area of future research because the military provides a number of advantages for comparative studies of work related stress outcomes. For instance, military personnel tend to be similar across a number of demographic indicators, they have gone through the same basic training, they have their behavior regulated by the same command structure and they work in similar environments that are to a certain extent isolated from civilian life. Given these relatively stable conditions, stronger conclusions can be made about relationships between work dimensions and psychological and physiological outcomes based on I/O differentiation. The present research investigated these relationships using organisational information to determine I/O modalities. Future research may find it more useful to include measures of individual I/O orientation, individual perceptions of the I/O orientation of their environment and organisational measures of I/O structure in military social systems. The lack of perceptual agreement of

psychological climate scores in the present study also suggests that it may be useful in future to group individuals according to fit between orientations and environments and subsequently look at organisational climates that might be generated by good institutional fit and poor institutional fit. Future researchers could take more cognisance of specific categories of employees based on immediate workgroup, or on analysis of job similarities to investigate I/O climates in the military. In addition, the possibility of also looking at the evolution of military culture may offer some insight into changes in I/O modalities.

The military hold a large amount of data about themselves. In future research access to this data would be of considerable benefit. For example standardised health records may provide a reliable account of health status. In addition, number of sick days, voluntary absences, health claims and accidents provide hard outcome measures for possible inclusion in research designs.

Investigation of interventions in the military work environment to ameliorate stressor/strain outcomes is another area of interest. The present findings suggest that an important factor in determining an individual's satisfaction with their job is that the job is perceived as challenging, autonomous and important. Interventions might include redesigning jobs to allow for greater personal discretion on the how the job is performed and developing appropriate reward systems (not necessarily financial) to provide the individual with clear recognition for their contribution. The identification of elements in the military work environment which lead to job dissatisfaction is a necessary first step in prevention of poor psychological and mental health outcomes.

With regard to the ex-military study, clearly future studies would wish to obtain a larger more representative sample of those that have left the military. Notwithstanding the restraints of time and money, future research may wish to employ further means of tracking veterans such as through military pension schemes, ex-service organisations such as R.S.A.'s., membership of the Territorial Force etc. In addition, there is a lack of information on the comparative health of current military personnel, non-combat ex-military personnel and non-military

personnel. Researchers should attempt to include a non-military sample for comparative purposes in future studies of work related stress outcomes in the military.

8.5 Conclusions

The findings of the present study provide evidence for the existence of institutional/occupational modalities within the New Zealand Army based on the expected differences between combat and non-combat personnel proposed by Moskos (1977). In addition, the use of organisational information to categorise I/O modalities supports Segal's (1986) suggestion that there are a number of levels at which the I/O model can be measured providing opportunities for a more comprehensive investigation of the model at micro (individual), macro (military/civilian interface) and organisational (structural) levels.

Moskos (1988) suggests that the I/O model seeks to increase understanding as to how military organisational changes affect members' attitudes and commitment. These attitudes and commitment in turn are alleged to affect organisational effectiveness. Most research has not addressed the effects of military organisational changes on the individual's experience of the military environment. Results from the present research indicate that I/O modalities lead to different perceptions of the work environment and differential military experience for its members. The findings suggest that to fully understand the implications of the I/O model on individual experience, more homogenous groupings of individuals within the military need to be investigated. Unfortunately the present size of the New Zealand Defence Forces provides limited opportunity to do this.

The present findings have implications for the future of the military. In some ways the traditional military ethos is an anachronism in modern society, where the military increasingly functions in a peacekeeping capacity. There is a limit however, as to how civilianised the military can become. However, the move to a more occupational military organisation seems inevitable, albeit a slow transition. As has been noted by previous researchers, certain conventions and routines will

remain traditionally institutional, however there is a need to distinguish between established practices that are vital to the basic functioning of the military and traditional practices that are no longer appropriate. Like any other employing organisation, the military must provide work roles which are satisfying and challenging, which are perceived as making a meaningful contribution, and which provide adequate psychological and financial rewards.

In summary, the military environment offers a unique environment for research into work related stress. A relatively stable composition of personnel and underlying social milieu provides an opportunity to observe psychological and physiological outcomes within the framework of structural transition. The I/O model offers potential insights into the differential experiences of military personnel. The present findings add to the accumulating evidence for a move toward a more occupational military organisation and the potential influence this might have on individual's experience of the military environment.

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Appendix 1

Description of the eighteen Psychological Climate Variables used in the present study.

Role Ambiguity	Degree of perceived ambiguity in demands, criteria and interfaces with other jobs-tasks-roles.
Role Conflict	Degree to which role performance is seen as affected by pressures to engage in conflicting or mutually exclusive behaviours.
Role Overload	Degree to which role performance is seen as affected by inadequate time, training, and resources.
Subunit Conflict	Degree to which subunits are perceived as being uncooperative and in conflict over goals and resources.
Organisational Identification	Degree to which organisation is perceived as performing an important function and, in comparison to other organisations, offering greater rewards.
Management Concern and Awareness	Degree to which management is perceived as attempting to assess and to respond to employees' needs and problems.
Job Challenge and Variety	Degree of perceived opportunity to make full use of abilities, skills, and knowledge; and the perceived range of tasks, equipment and behaviours involved in job.
Job Autonomy	Degree of perceived opportunity to determine the nature of tasks or problems and to act without consultation or permission.
Job Importance	Degree to which job is perceived as making a meaningful contribution and is important to the organisation.
Leader Trust and Support	Degree to which leader is perceived as aware of and responsive to needs of subordinate and shows consideration for feelings of personal worth; and degree of confidence and trust in leader.
Leader Goal Facilitation	Degree to which leader is perceived as stimulating subordinate's involvement in meeting group goals.
Leader Interaction Facilitation	Degree to which leader is perceived as encouraging development of a close, cohesive work group.
Psychological Influence	Degree of influence that subordinate perceived himself/herself as having on decisions made by leader.
Hierarchical Influence	Degree to which a leader is perceived as successful in interactions with higher levels of management.
Work Group Cooperation	Degree of perceived cooperative effort among work group members to carry out tasks.
Work Group Friendliness and Warmth	Degree to which warm, friendly relations, trust and mutual liking among work group members are perceived.
Reputation for Effectiveness	The extent to which the group is seen as able to produce work of higher quality and quantity than other groups in the organisation.
Esprit de Corps	The extent to which members take pride in their group.

From Jones and James (1979) and James and Sells (1981).

Appendix 2

MASSEY
UNIVERSITY

Coping with the Military Environment

A research project conducted on behalf of the
New Zealand War Pensions Medical Research Trust Board
by independent researchers from Massey University

Participant Consent:

I have read the information sheet about this study and understand the details of the study. I understand that I may ask questions at any time and decline to answer any particular questions in the questionnaire, and that I am free to withdraw from the study at any time. I agree to provide the researchers with information on the understanding that it is completely in confidence, and that I will not be identified in any reports from the study.

Signed: _____

Date: _____

Please read the following instructions carefully.

All the information you give us is in confidence and will be used only for the purposes of this study.

Please attempt every question and be careful not to skip any pages.

There are no right or wrong answers, we want the response which is best for you.

It is important that you give your own answers to the questions. Please do not discuss your answers with others.

Do not linger too long over each question, usually your first response is best.

Firstly we would like some general background information about you. Circle the number for the answer which is best for you, or give details in the spaces provided.

What is your date of birth?

_____/_____/19_____

What is your sex?

Male ☐ Female ☐

What is your **present** marital status?

Never married 1

Married/ Remarried (including defacto) 2

Separated / divorced 3

Widowed 4

What ethnic group do you belong to?

New Zealander of Maori descent 1

New Zealander of European descent 2

New Zealander of Pacific Island descent 3

Other, specify _____ 4

What is your highest educational qualification?

No school qualification 1

School certificate passes 2

School qualifications, University Entrance and above 3

Trade certificate or Professional certificate or diploma 4

University degree, diploma, or certificate 5

What is your present personal gross annual income (excluding your partner's salary &/or benefits)

$_____

IN CONFIDENCE

Have your ever applied for a war disability pension in New Zealand? ☐ 1c

Yes ☐	What type of war disability pension did you apply for? (eg hearing) ☐☐ _____ Was the application: accepted ☐ or declined ☐ ☐ If accepted, what percentage of pension did you receive? _____ % ☐☐
No ☐	Please continue with the next question

Since joining the Army, have you ever received assistance from the Accident Compensation Corporation (ACC) for a service (work) related injury or condition? ☐ 1

Yes ☐	Please continue with the questions below
No ☐	Please go to the next page

What injuries or conditions did the assistance relate to? ☐☐ ☐☐

_____

_____

At what level (percentage) was your disability assessed? ☐☐

_____ % Not applicable ☐

Which of the following types of compensation have you received: ☐
(You may circle more than one response)

Treatment expenses ..... 1 ☐
(Doctors, specialists fees etc)

Earnings related compensation ..... 2 ☐
(Salary / wage compensation)

Lump sum payments ..... 3 ☐

Transport costs ..... 4 ☐

Home help ..... 5 ☐

Clothing expenses ..... 6 ☐

Other (specify) _____ ... 7 ☐

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We experience many hassles in our daily lives. Hassles are irritants that can range from minor annoyances to fairly major pressures, problems, or difficulties. They can occur few or many times.

Listed below are a number of things that could be considered hassles. Please consider how much of a hassle each of these was for you over the last month. Circle a number for the one answer that best indicates the degree to which each of these has been a hassle for you over the last month.

How much of a hassle was each of the following for you over the **last month**?

0 ---------- 1 ---------- 2 ---------- 3
not at all somewhat quite a bit very much

Your child(ren)	0 1 2 3
Your parents or parents-in-law	0 1 2 3
Other relative(s)	0 1 2 3
Your spouse / partner	0 1 2 3
Time spent with family	0 1 2 3
Health or well-being of a family member	0 1 2 3
Sex	0 1 2 3
Intimacy	0 1 2 3
Family related obligations	0 1 2 3
Your friend(s)	0 1 2 3
Fellow workers	0 1 2 3
Customers, patients etc	0 1 2 3
Your supervisor, employer	0 1 2 3
The nature of your work	0 1 2 3
Your work load	0 1 2 3
Your job security	0 1 2 3
Meeting deadlines or goals on the job	0 1 2 3
Enough money for necessities (eg food, clothing, housing, health care, taxes, insurance)	0 1 2 3
Enough money for education	0 1 2 3
Enough money for emergencies	0 1 2 3
Enough money for extras (eg vacations, recreation, entertainment)	0 1 2 3
Financial care for someone who doesn't live with you	0 1 2 3
Investments	0 1 2 3
Your smoking	0 1 2 3

How much of a hassle was each of the following for you over the **last month**?

0 ---------- 1 ---------- 2 ---------- 3
not at all somewhat quite a bit very much

Your drinking 0 1 2 3
Mood-altering drugs 0 1 2 3
Your physical appearance 0 1 2 3
Contraception 0 1 2 3
Exercise 0 1 2 3
Your medical care 0 1 2 3
Your health 0 1 2 3
Your physical abilities 0 1 2 3
The weather 0 1 2 3
News events 0 1 2 3
Your environment (eg quality of air, noise level, trees and greenery) 0 1 2 3
Political or social issues 0 1 2 3
Your neighbourhood (eg neighbours, the area you live in) 0 1 2 3
Conserving (gas, electricity, water, petrol, etc) 0 1 2 3
Pets 0 1 2 3
Cooking 0 1 2 3
Housework 0 1 2 3
Home repairs 0 1 2 3
Section maintenance 0 1 2 3
Car maintenance 0 1 2 3
Taking care of paperwork (eg paying bills, filling out forms) 0 1 2 3
Home entertainment (eg TV, music, reading) 0 1 2 3
Amount of free time 0 1 2 3
Recreation and entertainment outside the home (eg movies, sport, eating out, walking) 0 1 2 3
Daily meals / eating at home 0 1 2 3
Church and community organizations 0 1 2 3
Legal matters 0 1 2 3
Being organized 0 1 2 3
Social commitments 0 1 2 3

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. We want you to think about what you generally do and feel when you experience stressful events.

For each of the following items, circle the one number which best describes what you usually do when you are under stress. There are no "right" or "wrong" answers. Choose the most accurate answer for YOU, not what you think "most people" would say or do.

Indicate what you usually do to deal with stress.

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

I try to grow as a person as a result of the experience 1 2 3 4

I turn to work or other substitute activities to take my mind off things 1 2 3 4

I get upset and let my emotions out 1 2 3 4

I try to get advice from someone about what to do 1 2 3 4

I concentrate my efforts on doing something about it 1 2 3 4

I say to myself "this isn't real" 1 2 3 4

I put my trust in God 1 2 3 4

I laugh about the situation 1 2 3 4

I admit to myself that I can't deal with it, and quit trying 1 2 3 4

I restrain myself from doing anything too quickly 1 2 3 4

I discuss my feelings with someone 1 2 3 4

I use alcohol or drugs to make myself feel better 1 2 3 4

I get used to the idea that it happened 1 2 3 4

I talk to someone to find out more about the situation 1 2 3 4

I keep myself from getting distracted by other thoughts or activities 1 2 3 4

I daydream about things other than this 1 2 3 4

I get upset, and am really aware of it 1 2 3 4

I seek God's help 1 2 3 4

I make a plan of action 1 2 3 4

I make jokes about it 1 2 3 4

I accept that this has happened and that it can't be changed 1 2 3 4

I hold off doing anything about it until the situation permits 1 2 3 4

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

I try to get emotional support from friends or relatives	1 2 3 4	
I just give up trying to reach my goal	1 2 3 4	
I take additional action to try to get rid of the problem	1 2 3 4	
I try to lose myself for a while by drinking alcohol or taking drugs	1 2 3 4	
I refuse to believe that it has happened	1 2 3 4	
I let my feelings out	1 2 3 4	
I try to see it in a different light, to make it seem more positive	1 2 3 4	
I talk to someone who could do something concrete about the problem	1 2 3 4	
I sleep more than usual	1 2 3 4	
I try to come up with a strategy about what to do	1 2 3 4	
I focus on dealing with this problem, and if necessary let other things slide a little	1 2 3 4	
I get sympathy and understanding from someone	1 2 3 4	
I drink alcohol or take drugs, in order to think about it less	1 2 3 4	
I kid around about it	1 2 3 4	
I give up the attempt to get what I want	1 2 3 4	
I look for something good in what is happening	1 2 3 4	
I think about how I might best handle the problem	1 2 3 4	
I pretend that it hasn't really happened	1 2 3 4	
I make sure not to make matters worse by acting too soon	1 2 3 4	
I try hard to prevent other things from interfering with my efforts at dealing with this	1 2 3 4	
I go to movies or watch TV, to think about it less	1 2 3 4	
I accept the reality of the fact that it happened	1 2 3 4	
I ask people who have had similar experiences what they did	1 2 3 4	
I feel a lot of emotional distress and I find myself expressing those feelings a lot	1 2 3 4	
I take direct action to get around the problem	1 2 3 4	
I try to find comfort in my religion	1 2 3 4	

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

I force myself to wait for the right time to do something 1 2 3 4

I make fun of the situation 1 2 3 4

I reduce the amount of effort I'm putting into solving the problem 1 2 3 4

I talk to someone about how I feel 1 2 3 4

I use alcohol or drugs to help me get through it 1 2 3 4

I learn to live with it 1 2 3 4

I put aside other activities in order to concentrate on this 1 2 3 4

I think hard about what steps to take 1 2 3 4

I act as though it hasn't even happened 1 2 3 4

I do what has to be done, one step at a time 1 2 3 4

I learn something from the experience 1 2 3 4

I pray more than usual 1 2 3 4

Below are a number of words that describe different feelings and emotions. Read each word and then circle the appropriate number to indicate to what extent you have felt this way <u>over the last month</u>.

Use the following scale to indicate the strength of your feeling.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

interested	1	----------	2	----------	3	----------	4	----------	5
distressed	1	----------	2	----------	3	----------	4	----------	5
excited	1	----------	2	----------	3	----------	4	----------	5
upset	1	----------	2	----------	3	----------	4	----------	5
strong	1	----------	2	----------	3	----------	4	----------	5
guilty	1	----------	2	----------	3	----------	4	----------	5
scared	1	----------	2	----------	3	----------	4	----------	5
hostile	1	----------	2	----------	3	----------	4	----------	5

	1	2	3	4	5	
	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely	
enthusiastic	1	2	3	4	5	☐
proud	1	2	3	4	5	☐
irritable	1	2	3	4	5	☐
alert	1	2	3	4	5	☐
ashamed	1	2	3	4	5	☐
inspired	1	2	3	4	5	☐
nervous	1	2	3	4	5	☐
determined	1	2	3	4	5	☐
attentive	1	2	3	4	5	☐
jittery	1	2	3	4	5	☐
active	1	2	3	4	5	☐
afraid	1	2	3	4	5	☐

These next questions are about how you feel, and how things have been with you over the last month. For each question, please circle a number for the one answer that comes closest to the way you have been feeling.

During the past month, how much of the time were you a happy person? ☐

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7
all of the time — none of the time

How happy, satisfied, or pleased have you been with your personal life during the past month? ☐

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7
extremely happy — extremely unhappy

How much of the time, during the past month, has your daily life been full of things that were interesting to you? ☐

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7
all of the time — none of the time

How much of the time, during the past month, have you felt calm and peaceful? ☐

1 ------- 2 ------- 3 ------- 4 ------- 5 ------- 6 ------- 7
all of the time — none of the time

How much of the time, during the past month, have you felt cheerful, lighthearted?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

During the past month, how much of the time have you generally enjoyed the things you do?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

How much of the time, during the past month, did you feel relaxed and free of tension?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

During the past month, how much of the time has living been a wonderful adventure for you?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

When you got up in the morning, this last month, about how often did you expect to have an interesting day?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
always — never

How often, during the past month, have you been waking up feeling fresh and rested?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
always — never

During the past month, how much of the time have you felt that the future looks hopeful and promising?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

During the past month, how much of the time have you felt loved and wanted?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

How much of the time, during the past month, were you able to relax without difficulty?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

During the past month, how much of the time did you feel that your love relationships, loving and being loved, were full and complete?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7
all of the time — none of the time

The following questions ask about people who give you help or support. Each question has three parts.

Part one: list all the people you know, but not yourself, who you can count on for help or support in the way described. Give the person's initials. Do not write more than one person next to each of the numbers beneath the question, and do not list more than nine people per question. If you have no support for a question, tick in the space ( ) beside the words "no one".

Part two: to indicate if the people listed are connected with the military circle "M" for military connections or "C" (civilian) for others.

Part three: circle how satisfied you are with the overall support you have for each question area. Do this for all questions, even where you have ticked "no one".

Here is an example which we have completed:

Who do you know who you can trust with information that could get you into trouble?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to take your mind off your worries when you feel under stress?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to help you feel more relaxed when you are under pressure or tense?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who accepts you totally, including your worst and best points?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to care about you, regardless of what is happening to you?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to help you feel better when you are feeling generally "down in the dumps"?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you count on to help you feel better when you are very upset?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Below are a set of multiple choice statements. Circle the letter next to the <u>one</u> statement in each group which <u>best</u> describes the way you have been feeling over the <u>past week</u>, including today. If several statements within a group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

A I do not feel sad.
B I feel sad.
C I am sad all the time and I can't snap out of it.
D I am so sad or unhappy that I can't stand it.

A I am not particularly discouraged about the future.
B I feel discouraged about the future.
C I feel I have nothing to look forward to.
D I feel that the future is hopeless and that things cannot improve.

A I do not feel like a failure.
B I feel I have failed more than the average person.
C As I look back on my life, all I can see is a lot of failures.
D I feel I am a complete failure as a person.

A I get as much satisfaction out of things as I used to.
B I don't enjoy things the way I used to.
C I don't get real satisfaction out of anything anymore.
D I am dissatisfied or bored with everything.

A I don't feel particularly guilty.
B I feel guilty a good part of the time.
C I feel quite guilty most of the time.
D I feel guilty all of the time.

A I don't feel I am being punished.
B I feel I may be punished.
C I expect to be punished.
D I feel I am being punished.

A I don't feel disappointed in myself.
B I am disappointed in myself.
C I am disgusted with myself.
D I hate myself.

A I don't feel I am any worse than anybody else.
B I am critical of myself for my weaknesses or mistakes.
C I blame myself all the time for my faults.
D I blame myself for everything bad that happens.

A I don't have any thoughts of killing myself.
B I have thoughts of killing myself, but I would not carry them out.
C I would like to kill myself.
D I would kill myself if I had the chance.

A I don't cry any more than usual.
B I cry more now than I used to.
C I cry all the time now.
D I used to be able to cry, but now I can't cry even though I want to.

A I am no more irritated now than I ever am.
B I get annoyed or irritated more easily than I used to.
C I feel irritated all the time now.
D I don't get irritated at all by the things that used to irritate me.

A I have not lost interest in other people.
B I am less interested in other people than I used to be.
C I have lost most of my interest in other people.
D I have lost all of my interest in other people.

A I make decisions about as well as I ever could.
B I put off making decisions more than I used to.
C I have greater difficulty in making decisions than before.
D I can't make decisions at all anymore. ☐

A I don't feel I look any worse than I used to.
B I am worried that I am looking old or unattractive.
C I feel that there are permanent changes in my appearance that make me look unattractive.
D I believe that I look ugly. ☐

A I can work about as well as before.
B It takes an extra effort to get started at doing something.
C I have to push myself very hard to do anything.
D I can't do any work at all. ☐

A I can sleep as well as usual.
B I don't sleep as well as I used to.
C I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
D I wake up several hours earlier than I used to and cannot get back to sleep. ☐

A I don't get more tired than usual.
B I get tired more easily than I used to.
C I get tired from doing almost anything.
D I am too tired to do anything. ☐

A My appetite is no worse than usual.
B My appetite is not as good as it used to be.
C My appetite is much worse now.
D I have no appetite at all anymore. ☐

A I haven't lost much weight, if any, lately.
B I have lost more than 2 kilos (5lbs).
C I have lost more than 4 kilos (10lbs).
D I have lost more than 6 kilos (15lbs). ☐

I am purposely trying to lose weight by eating less.

Yes ☐ No ☐ ☐

A I am no more worried about my health than usual.
B I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
C I am very worried about physical problems and it is hard to think of much else.
D I am so worried about my physical problems that I cannot think about anything else. ☐

A I have not noticed any recent change in my interest in sex.
B I am less interested in sex than I used to be.
C I am much less interested in sex now.
D I have lost interest in sex completely. ☐

A number of statements which people use to describe themselves are given below. Read each statement and then circle the one number which best indicates how you generally feel.

0 ---------- 1 ---------- 2 ---------- 3
almost never sometimes often almost always

I feel pleasant	0 1 2 3
I feel nervous and restless	0 1 2 3
I feel satisfied with myself	0 1 2 3
I wish I could be as happy as others seem to be	0 1 2 3
I feel like a failure	0 1 2 3
I feel rested	0 1 2 3
I am "cool, calm, and collected"	0 1 2 3
I feel that difficulties are piling up so that I cannot overcome them	0 1 2 3
I worry too much over something that really doesn't matter	0 1 2 3
I am happy	0 1 2 3
I have disturbing thoughts	0 1 2 3
I lack self-confidence	0 1 2 3
I feel secure	0 1 2 3
I make decisions easily	0 1 2 3
I feel inadequate	0 1 2 3
I am content	0 1 2 3
Some unimportant thought runs through my mind and bothers me	0 1 2 3
I take disappointments so badly that I can't put them out of my mind	0 1 2 3
I am a steady person	0 1 2 3
I get in a state of tension or turmoil as I think over my recent concerns and interests	0 1 2 3

Compared to the person in excellent health, how would you rate your health at the present time?

Terrible	1
Very poor	2
Poor	3
Fair	4
Good	5
Very good	6
Excellent	7

IN CONFIDENCE

The next set of questions relates to some aspects of your military experience.

When did you enlist in the New Zealand Army?

_____ / _____ / 19_____

If you have had broken service, please give details of enlistment periods:

_____

_____

What is your rank? _____

What is your trade? _____

What is your corps? _____

What is your unit? _____

How long have you been in this unit? _____

Where are you currently posted? _____

Since joining the Army, how many times have you ...

been posted? _____

been posted or deployed overseas? _____

received postings which resulted in you moving homes / barracks? _____

The following are a series of statements that <u>may or may not</u> be true of your job in the Army. Circle the one number which best describes how true you feel each item is as it applies to you and the Army, using the following categories.

1	2	3	4
Definitely false	More false than true	More true than false	Definitely true

There can be little action taken in the Army until a supervisor approves a decision 1 2 3 4

A person who wants to make his/her own decisions would be quickly discouraged 1 2 3 4

Even small matters have to be referred to someone higher up for a final answer 1 2 3 4

I have to ask my supervisor before I do almost anything 1 2 3 4

Any decision I make has to have my supervisor's approval 1 2 3 4

The following are a series of statements that may apply to your job, please indicate your answer by circling one of the following responses:

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Never Seldom Sometimes Often Always

How frequently do you usually participate in the decision to hire new recruits? 1 2 3 4 5

How frequently do you usually participate in decisions on the promotion of any of the service people? 1 2 3 4 5

How frequently do you participate in decisions on the adoption of new policies? 1 2 3 4 5

How frequently do you participate in the decisions on the adoption of new programs? 1 2 3 4 5

Please indicate how satisfied or dissatisfied you are with the following aspects of your job using the following categories:

1 = I'm extremely dissatisfied
2 = I'm very dissatisfied
3 = I'm moderately dissatisfied
4 = I'm not sure
5 = I'm moderately satisfied
6 = I'm very satisfied
7 = I'm extremely satisfied

The physical work conditions 1 2 3 4 5 6 7

The freedom to choose your own work method 1 2 3 4 5 6 7

Your fellow workers 1 2 3 4 5 6 7

The recognition you get for good work 1 2 3 4 5 6 7

Your immediate supervisor 1 2 3 4 5 6 7

The amount of responsibility you are given 1 2 3 4 5 6 7

Your rate of pay 1 2 3 4 5 6 7

Your opportunity to use your abilities 1 2 3 4 5 6 7

Industrial relations between the Army and service personnel 1 2 3 4 5 6 7

Your chance of promotion 1 2 3 4 5 6 7

The way the Army is managed 1 2 3 4 5 6 7

The attention paid to suggestions you make 1 2 3 4 5 6 7

Your hours of work 1 2 3 4 5 6 7

The amount of variety in your job 1 2 3 4 5 6 7

Your job security 1 2 3 4 5 6 7

The following are a series of statements that may or may not be true of your job and the Army. Circle the one number which best describes how true you feel each item is as it applies to you and the Army, using the following categories.

1 Definitely false — 2 More false than true — 3 More true than false — 4 Definitely true

I feel that I am my own boss in most matters 1 2 3 4

A person can make their own decisions without checking with anybody else 1 2 3 4

How things are done here is left pretty much up to the person doing the work 1 2 3 4

People here are allowed to do almost as they please 1 2 3 4

Most people here make their own rules on the job 1 2 3 4

The people here are constantly being checked on for rule violations 1 2 3 4

People here feel as though they are constantly being watched to see that they obey all the rules 1 2 3 4

For each of the following items, circle the one number which best represents the way you see your work situation

How often are you kept informed about things you need to know about your work?

1 Almost always — 2 — 3 — 4 — 5 Practically never

My job responsibilities are clearly defined.

1 Strongly agree — 2 — 3 — 4 — 5 Strongly disagree

New service people get the on-the job training they need.

1 Strongly agree — 2 — 3 — 4 — 5 Strongly disagree

It is **not often clear** who has the authority to make a decision regarding my job.

1 Strongly agree — 2 — 3 — 4 — 5 Strongly disagree

Do you understand how your job fits into the overall objectives of the unit?

1 Always understand — 2 — 3 — 4 — 5 Never understand

To what extent are you aware of the opportunities for promotion and advancement in your job?

1 Not at all — 2 — 3 — 4 — 5 To a considerable extent

Excessive rules and regulations interfere with how well I am able to do my job.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How often do you feel that the amount of work you have to do interferes with how well it gets done?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

Opportunities to complete the work I start are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent Outstanding

How often do you feel that your job tends to interfere with your family life?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

How often do you feel that you have too little authority to carry out the responsibilities assigned to you?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

How often do you feel unable to satisfy the conflicting demands of various people over you?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

How much autonomy do you have on your job?

1 ---------- 2 ---------- 3
Very little Very much

I have the freedom to do pretty much what I want on my job.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

Opportunities for independent thought and action on my job are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent Outstanding

Responsibility is assigned so that personnel have authority within their own areas.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How much **variety** is there in your job?

1 ---------- 2 ---------- 3
Very little Very much

How much opportunity do you have to do a number of different things on your job?

1 --------- 2 --------- 3 --------- 4
A minimum amount A maximum amount

How often do you have opportunities to work on different jobs?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never — Nearly all the time

Opportunities to do creative work on my job are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent — Outstanding

How important is your work?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not very important — Of vital importance

My job is meaningfully related to other jobs in this unit.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How many tasks do you perform on your job which you consider relatively unimportant or unnecessary?

1 ------- 2 ------- 3 ------- 4 ------- 5
Nearly all — Practically none

My work makes a meaningful contribution.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Opportunities to make full use of my knowledge and skills on my job are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent — Outstanding

To what extent does your job challenge your abilities?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a considerable extent

How often do you work on difficult and challenging problems in your job?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never — Nearly all the time

To what extent does your job require a high level of skill and training?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a considerable extent

How does your section compare to others in terms of pressure to produce?

1 ------- 2 ------- 3 ------- 4 ------- 5
Much less pressure — Much more pressure

Hours of work are very irregular.

1 --------- 2 --------- 3 --------- 4
False True

Is there a need for more personnel in your sub-unit?

1 --------- 2 --------- 3 --------- 4
We are shorthanded — We have more workers than we need

In general, do you consider the deadlines that are established for output and completion of your work to be realistic?

1 --------- 2 --------- 3 --------- 4
Very unrealistic — Very realistic

The work load here is such that personnel:

1 --------- 2 --------- 3 --------- 4
Very rarely show signs of strain — Very often show signs of strain

How often are you asked to do things for which you are not fully qualified?

1 ------- 2 ------- 3 ------- 4 ------ 5
Never — Nearly all the time

How well does your supervisor recognise and reward good performance by his/her staff?

1 --------- 2 --------- 3 --------- 4
Not very well — Extremely well

In my section, personnel are almost always certain to hear about mistakes but seldom hears about their successes.

1 ------- 2 ------ 3 ------ 4 ------ 5
Strongly agree — Strongly disagree

To what extent is your supervisor willing to listen to your problems?

1 ------- 2 ------- 3 ------ 4 ------ 5
Not at all — To a very great extent

To what extent is your supervisor friendly and easy to approach?

1 ------- 2 ------ 3 ------ 4 ------ 5
Not at all — To a very great extent

To what extent is your supervisor attentive to what you say?

1 ------- 2 ------ 3 ------ 4 ------ 5
Not at all — To a very great extent

To what extent does your supervisor emphasise high standards of performance?

1 ------- 2 ------- 3 ------- 4 ------ 5
Not at all — To a very great extent

To what extent does your supervisor set an example by working hard him/herself?

1 ------- 2 ------- 3 ------ 4 ------ 5
Not at all — To a very great extent

To what extent does your supervisor encourage people to give their best effort?

1 ------- 2 ------- 3 ------- 4 ------ 5
Not at all — To a very great extent

Personnel are encouraged to work for promotion.

1 ------- 2 ------- 3 ------ 4 ------ 5
Strongly agree — Strongly disagree

How often does your supervisor hold group meetings where he/she and the people who work for him/her really discuss things?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never — Nearly all the time

Generally, how are decisions made in your section?

1 ------- 2 ------- 3 ------- 4 ------- 5
By the supervisor alone — By the whole section equally

To what extent does your supervisor encourage the people who work for him/her to work as a team?

1 ------- 2 ------- 3 ------ 4 ------ 5
Not at all — To a very great extent

To what extent does your supervisor encourage the people who work for him/her to exchange ideas and opinions?

1 ------- 2 ------- 3 ------ 4 ------ 5
Not at all — To a very great extent

How successful is your sub-unit commander in his/her dealings with higher levels of command?

1 ------- 2 ------- 3 ------- 4 ------ 5
Below average — Outstanding

How successful is your immediate supervisor in dealing with higher levels of command?

1 ------- 2 ------- 3 ------- 4 ------ 5
Outstandingly successful — Below average success

Personnel generally trust their section commanders.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

The members of my unit trust their officers.

1 ------- 2 ------- 3 ------ 4 ------- 5
Strongly agree Strongly disagree

Individual judgement is not trusted.

1 ------- 2 ------- 3 ------- 4 ------ 5
Strongly agree Strongly disagree

Verbal reports are **never** accepted as everything **has to be** in writing.

1 ------- 2 ------- 3 ------- 4 ------ 5
Strongly agree Strongly disagree

People act as though everyone must be watched or they will slack off.

1 ------- 2 ------- 3 ------- 4 ------ 5
Strongly agree Strongly disagree

In the unit people are treated with respect.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

To what extent do things in the unit have to be done by the book?

1 ------- 2 ------- 3 ------ 4 ------ 5
Everything is done by the book Practically nothing is done by the book

A spirit of cooperation is evident in my section.

1 ------- 2 ------- 3 ------ 4 ------- 5
Strongly agree Strongly disagree

How much friction is there in your section?

1 ------- 2 ------- 3 ------- 4 ------ 5
A great deal Very little

The people I work with cooperate to get the job done.

1 ------- 2 ------- 3 ------- 4 ------ 5
Strongly agree Strongly disagree

Assistance from my co-workers in carrying out difficult jobs is:

1 ------- 2 ------- 3 ------- 4 ------ 5
Non-existent Outstanding

To what extent does a friendly atmosphere prevail among most of the members of your section?

1 ------- 2 ------- 3 ------- 4 ------ 5
To a very small extent To a considerable extent

Members of my section trust each other.

1 ------- 2 ------- 3 ------ 4 ------ 5
Strongly agree Strongly disagree

Communication is good in my section.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How does your section compare to other sections in terms of productivity?

1 ------- 2 ------- 3 ------- 4 ------- 5
Most productive — Below average productivity

How would you rate the quality of work produced in your section?

1 ------- 2 ------- 3 ------- 4 ------- 5
Very poor — Very good

How does your sub-unit compare to all other sub-units in your unit in terms of productivity?

1 ------- 2 ------- 3 ------- 4 ------- 5
Most productive — Below average productivity

Most of the personnel in my sub-unit would **not** want to change to another sub-unit.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Most of the officers in this unit feel that my sub-unit is:

1 ------- 2 ------- 3 ------- 4 ------- 5
Somewhat below average — Outstanding

Most members of my section take pride in their jobs.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Most of the service people in my sub-unit think our sub-unit is the best in the unit.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Generally there are friendly and cooperative relationships between the different sub-units in this unit.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

There is poor communication between sub-units in this unit.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

To what extent do you feel there is conflict (rivalry and hostility) between your sub-unit and other sub-units in this unit?

1 ------- 2 ------- 3 ------- 4 ------- 5
To a very great extent — To a very small extent

Things in this unit seem to happen contrary to rules and regulations.

1 ------- 2 ------ 3 ------- 4 ------ 5
Strongly agree — Strongly disagree

Things are planned so that everyone is getting in each others way.

1 ------ 2 ------ 3 ------ 4 ------ 5
Strongly agree — Strongly disagree

How often are the objectives, goals or policies of this unit changed?

1 ------- 2 ------ 3 ------ 4 ------ 5
Very often — Very rarely or never

How often are the objectives, goals, or policies of your sub-unit in conflict with those of the unit?

1 ------ 2 ------- 3 ------ 4 ------ 5
Often — Never

The things that are seen as most important in this unit are **not** related to overall unit effectiveness.

1 ------- 2 ------- 3 ------ 4 ------ 5
Strongly agree — Strongly disagree

The opportunities for promotion in this unit compared to those in other units are:

1 ------- 2 ------- 3 ------ 4 ------ 5
Much lower — Much higher

Does this unit perform an important function in the Army?

1 ---------- 2 ---------- 3
Yes, for the most part — Uncertain — No, for the most part

Most unit members are proud of their unit.

1 ------ 2 ------ 3 ------ 4 ------ 5
Strongly agree — Strongly disagree

To what extent is serving in this unit beneficial to your career?

1 ------- 2 ------- 3 ------- 4 ------ 5
Not at all — To a considerable extent

I would rather stay in this unit than be posted to another.

1 ------- 2 ------- 3 ------ 4 ------- 5
Strongly agree — Strongly disagree

Working conditions in this unit are better than in other units.

1 ------- 2 ------- 3 ------- 4 ------ 5
Strongly agree — Strongly disagree

How do you feel about recommending the Army to a prospective recruit?

1 ---------- 2 ---------- 3

I would not recommend the Army under any circumstances

I would recommend the Army to most recruits

☐ 4.

I have more opportunities for growth and advancement in the Army than in civilian life.

1 ------ 2 ------ 3 ----- 4 ---- 5

Strongly agree — Strongly disagree

☐

Most individuals see a good future for themselves in the Army.

1 ------ 2 ------ 3 ------ 4 ------ 5

Strongly agree — Strongly disagree

☐

I think the Army has a good image to outsiders.

1 ------- 2 ------- 3 ---- 4 ----- 5

Strongly agree — Strongly disagree

☐

In comparison with people in similar jobs in civilian organisations, I feel my pay is:

1 ------- 2 ------- 3 ------ 4 ------ 5

Much higher — Much lower

☐

Section commanders generally know what is going on in their sections.

1 ------- 2 ------ 3 ------ 4 ---- 5

Strongly agree — Strongly disagree

☐

Do you feel that people at command levels of your sub-unit and unit are aware of the problems and needs at lower levels?

1 ------- 2 ------ 3 ------ 4 ---- 5

No, quite unaware — Yes, very aware

☐

Officers keep well informed about the needs and problems of the unit.

1 ------- 2 ------ 3 ------ 4 ------ 5

Strongly agree — Strongly disagree

☐ 9

Appendix 3

Summary of biographical information for I/O groups in current personnel sample.

	I/O Groups			
	Combat (N=387)		Support (N=183)	
	No.	% Total	No.	% Total
Gender				
Females	7	1.8	29	15.8
Males	375	96.9	151	82.5
Age				
≤ 20	101	26.1	20	10.9
21-25	166	42.9	41	22.4
26-30	53	13.7	39	21.3
31-35	41	10.6	49	26.8
36-40	10	2.6	23	12.6
≥ 41	3	0.8	4	2.2
Marital Status				
Never Married	249	65.0	69	37.7
Married	126	32.8	100	54.6
Separated/ Divorced	8	2.1	10	5.5
Ethnicity				
Maori	129	33.3	40	21.9
Non-Maori	255	65.9	140	76.5
Annual Income				
≤ $20,000	153	39.5	33	18.0
$21,000 - $25,000	127	32.8	25	13.7
$26,000 - $30,000	31	8.0	23	12.6
$31,000 - $35,000	28	7.2	20	10.9
$36,000 - $40,000	28	7.2	48	26.2
$41,000 - $45,000	4	1.0	16	8.7
$46,000 - $50,000	3	0.7	4	2.2
≥ $51,000	2	0.5	6	3.3
Educational Qualifications				
No School Qualifications	55	14.2	21	11.5
School Certificate passes	171	44.2	66	36.1
University Entrance +	112	28.9	35	19.1
Trade & Professional qual.	30	7.8	50	27.3
University qualification	15	3.9	8	4.4

MASSEY
UNIVERSITY

Ex-military Personnel Study

A research project conducted on behalf of the
New Zealand War Pensions Medical Research Trust Board
by independent researchers from Massey University

Participant Consent:

I have read the information sheet about this study and understand the details of the study. I understand that I may ask questions at any time and decline to answer any particular questions in the questionnaire, and that I am free to withdraw from the study at any time. I agree to provide the researchers with information on the understanding that it is completely in confidence, and that I will not be identified in any reports from the study.

Signed _____

Date _____

Please read the following instructions carefully.

All the information you give us is in confidence and will be used only for the purposes of the study.

Please attempt every question and be careful not to skip pages.

There are no right or wrong answers, we want the response which is best for you.

It is important that you give your own answers to the questions. Please do not discus your answers with others.

Do not linger too long over each question, usually your first response is best.

Firstly we would like some general background information about you. Circle the number for the answer which is best for you, or give details in the spaces provided.

What is your date of birth?

_____/_____/19_____

What is your sex?

Male ☐ Female ☐

What is your **present** marital status?

Never married 1

Married/ Remarried (including defacto) 2

Separated / divorced 3

Widowed 4

What ethnic group do you belong to?

New Zealander of Maori descent 1

New Zealander of European descent 2

New Zealander of Pacific Island descent 3

Other, specify _____ 4

What is your highest educational qualification?

No school qualification 1

School certificate passes 2

School qualifications, University Entrance and above 3

Trade certificate or Professional certificate or diploma 4

University degree, diploma, or certificate 5

What is your present personal gross annual income (excluding your partner's salary &/or benefits)

$_____

Have your ever applied for a war disability pension in New Zealand?

Yes ☐	What type of war disability pension did you apply for? (eg hearing) _____ Was the application: accepted ☐ or declined ☐ If accepted, what percentage of pension did you receive? _____ %
No ☐	Please continue with the next question

During your time in the Army, did you ever receive assistance from the Accident Compensation Corporation (ACC) for a **service (work)-related** injury or condition? **Do not** include assistance received **after leaving** the Army, or for injuries or conditions which were **not work-related.**

Yes ☐	Please continue with the questions below
No ☐	Please go to the next page

What injuries or conditions did the assistance relate to?

_____

_____

At what level (percentage) was your disability assessed?

_____ % Not applicable ☐

Which of the following types of compensation have you received:
(You may circle more than one response)

Treatment expenses 1
(Doctors, specialists fees etc)

Earnings related compensation 2
(Salary / wage compensation)

Lump sum payments 3

Transport costs 4

Home help 5

Clothing expenses 6

Other (specify) _____ . . . 7

IN CONFIDENCE

We experience many hassles in our daily lives. Hassles are irritants that can range from minor annoyances to fairly major pressures, problems, or difficulties. They can occur few or many times.

Listed below are a number of things that could be considered hassles. Please consider how much of a hassle each of these was for you over the last month. Circle a number for the one answer that best indicates the degree to which each of these has been a hassle for you over the last month.

How much of a hassle was each of the following for you over the **last month**?

0 ---------- 1 ---------- 2 ---------- 3
not at all somewhat quite a bit very much

Your child(ren)	0 1 2 3
Your parents or parents-in-law	0 1 2 3
Other relative(s)	0 1 2 3
Your spouse / partner	0 1 2 3
Time spent with family	0 1 2 3
Health or well-being of a family member	0 1 2 3
Sex	0 1 2 3
Intimacy	0 1 2 3
Family related obligations	0 1 2 3
Your friend(s)	0 1 2 3
Fellow workers	0 1 2 3
Customers, patients etc	0 1 2 3
Your supervisor, employer	0 1 2 3
The nature of your work	0 1 2 3
Your work load	0 1 2 3
Your job security	0 1 2 3
Meeting deadlines or goals on the job	0 1 2 3
Enough money for necessities (eg food, clothing, housing, health care, taxes, insurance)	0 1 2 3
Enough money for education	0 1 2 3
Enough money for emergencies	0 1 2 3
Enough money for extras (eg vacations, recreation, entertainment)	0 1 2 3
Financial care for someone who doesn't live with you	0 1 2 3
Investments	0 1 2 3
Your smoking	0 1 2 3

How much of a hassle was each of the following for you over the **last month**?

0 ---------- 1 ---------- 2 ---------- 3
not at all somewhat quite a bit very much

Your drinking	0 1 2 3	
Mood-altering drugs	0 1 2 3	
Your physical appearance	0 1 2 3	
Contraception	0 1 2 3	
Exercise	0 1 2 3	
Your medical care	0 1 2 3	
Your health	0 1 2 3	
Your physical abilities	0 1 2 3	
The weather	0 1 2 3	
News events	0 1 2 3	
Your environment (eg quality of air, noise level, trees and greenery)	0 1 2 3	
Political or social issues	0 1 2 3	
Your neighbourhood (eg neighbours, the area you live in)	0 1 2 3	
Conserving (gas, electricity, water, petrol, etc)	0 1 2 3	
Pets	0 1 2 3	
Cooking	0 1 2 3	
Housework	0 1 2 3	
Home repairs	0 1 2 3	
Section maintenance	0 1 2 3	
Car maintenance	0 1 2 3	
Taking care of paperwork (eg paying bills, filling out forms)	0 1 2 3	
Home entertainment (eg TV, music, reading)	0 1 2 3	
Amount of free time	0 1 2 3	
Recreation and entertainment outside the home (eg movies, sport, eating out, walking)	0 1 2 3	
Daily meals / eating at home	0 1 2 3	
Church and community organizations	0 1 2 3	
Legal matters	0 1 2 3	
Being organized	0 1 2 3	
Social commitments	0 1 2 3	

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. We want you to think about what you generally do and feel when you experience stressful events.

For each of the following items, circle the one number which best describes what you usually do when you are under stress. There are no "right" or "wrong" answers. Choose the most accurate answer for YOU, not what you think "most people" would say or do.

Indicate what you usually do to deal with stress.

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

I try to grow as a person as a result of the experience	1 2 3 4	
I turn to work or other substitute activities to take my mind off things	1 2 3 4	
I get upset and let my emotions out	1 2 3 4	
I try to get advice from someone about what to do	1 2 3 4	
I concentrate my efforts on doing something about it	1 2 3 4	
I say to myself "this isn't real"	1 2 3 4	
I put my trust in God	1 2 3 4	
I laugh about the situation	1 2 3 4	
I admit to myself that I can't deal with it, and quit trying	1 2 3 4	
I restrain myself from doing anything too quickly	1 2 3 4	
I discuss my feelings with someone	1 2 3 4	
I use alcohol or drugs to make myself feel better	1 2 3 4	
I get used to the idea that it happened	1 2 3 4	
I talk to someone to find out more about the situation	1 2 3 4	
I keep myself from getting distracted by other thoughts or activities	1 2 3 4	
I daydream about things other than this	1 2 3 4	
I get upset, and am really aware of it	1 2 3 4	
I seek God's help	1 2 3 4	
I make a plan of action	1 2 3 4	
I make jokes about it	1 2 3 4	
I accept that this has happened and that it can't be changed	1 2 3 4	
I hold off doing anything about it until the situation permits	1 2 3 4	

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

I try to get emotional support from friends or relatives	1 2 3 4	
I just give up trying to reach my goal	1 2 3 4	
I take additional action to try to get rid of the problem	1 2 3 4	
I try to lose myself for a while by drinking alcohol or taking drugs	1 2 3 4	
I refuse to believe that it has happened	1 2 3 4	
I let my feelings out	1 2 3 4	
I try to see it in a different light, to make it seem more positive	1 2 3 4	
I talk to someone who could do something concrete about the problem	1 2 3 4	
I sleep more than usual	1 2 3 4	
I try to come up with a strategy about what to do	1 2 3 4	
I focus on dealing with this problem, and if necessary let other things slide a little	1 2 3 4	
I get sympathy and understanding from someone	1 2 3 4	
I drink alcohol or take drugs, in order to think about it less	1 2 3 4	
I kid around about it	1 2 3 4	
I give up the attempt to get what I want	1 2 3 4	
I look for something good in what is happening	1 2 3 4	
I think about how I might best handle the problem	1 2 3 4	
I pretend that it hasn't really happened	1 2 3 4	
I make sure not to make matters worse by acting too soon	1 2 3 4	
I try hard to prevent other things from interfering with my efforts at dealing with this	1 2 3 4	
I go to movies or watch TV, to think about it less	1 2 3 4	
I accept the reality of the fact that it happened	1 2 3 4	
I ask people who have had similar experiences what they did	1 2 3 4	
I feel a lot of emotional distress and I find myself expressing those feelings a lot	1 2 3 4	
I take direct action to get around the problem	1 2 3 4	
I try to find comfort in my religion	1 2 3 4	

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

I force myself to wait for the right time to do something 1 2 3 4

I make fun of the situation 1 2 3 4

I reduce the amount of effort I'm putting into solving the problem 1 2 3 4

I talk to someone about how I feel 1 2 3 4

I use alcohol or drugs to help me get through it 1 2 3 4

I learn to live with it 1 2 3 4

I put aside other activities in order to concentrate on this 1 2 3 4

I think hard about what steps to take 1 2 3 4

I act as though it hasn't even happened 1 2 3 4

I do what has to be done, one step at a time 1 2 3 4

I learn something from the experience 1 2 3 4

I pray more than usual 1 2 3 4

Below are a number of words that describe different feelings and emotions. Read each word and then circle the appropriate number to indicate to what extent you have felt this way <u>over the last month</u>.

Use the following scale to indicate the strength of your feeling.

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Very slightly or not at all — A little — Moderately — Quite a bit — Extremely

interested 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

distressed 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

excited 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

upset 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

strong 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

guilty 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

scared 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

hostile 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

	1	2	3	4	5	
	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely	
enthusiastic	1	2	3	4	5	☐
proud	1	2	3	4	5	☐
irritable	1	2	3	4	5	☐
alert	1	2	3	4	5	☐
ashamed	1	2	3	4	5	☐
inspired	1	2	3	4	5	☐
nervous	1	2	3	4	5	☐
determined	1	2	3	4	5	☐
attentive	1	2	3	4	5	☐
jittery	1	2	3	4	5	☐
active	1	2	3	4	5	☐
afraid	1	2	3	4	5	☐

These next questions are about how you feel, and how things have been with you over the last month. For each question, please circle a number for the one answer that comes closest to the way you have been feeling.

During the past month, how much of the time were you a happy person? ☐

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

How happy, satisfied, or pleased have you been with your personal life during the past month? ☐

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
extremely happy — extremely unhappy

How much of the time, during the past month, has your daily life been full of things that were interesting to you? ☐

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

How much of the time, during the past month, have you felt calm and peaceful? ☐

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

How much of the time, during the past month, have you felt cheerful, lighthearted?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

During the past month, how much of the time have you generally enjoyed the things you do?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

How much of the time, during the past month, did you feel relaxed and free of tension?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

During the past month, how much of the time has living been a wonderful adventure for you?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

When you got up in the morning, this last month, about how often did you expect to have an interesting day?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
always — never

How often, during the past month, have you been waking up feeling fresh and rested?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
always — never

During the past month, how much of the time have you felt that the future looks hopeful and promising?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

During the past month, how much of the time have you felt loved and wanted?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

How much of the time have you felt lonely during the past month?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

During the past month, how much of the time did you feel that your love relationships, loving and being loved, were full and complete?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7
all of the time — none of the time

The following questions ask about people who give you help or support. Each question has three parts.

Part one: list all the people you know, but not yourself, who you can count on for help or support in the way described. Give the person's initials. Do not write more than one person next to each of the numbers beneath the question, and do not list more than nine people per question. If you have no support for a question, tick in the space ( ) beside the words "no one".

Part two: to indicate if the people listed are connected with the military circle "M" for military connections or "C" (civilian) for others.

Part three: circle how satisfied you are with the overall support you have for each question area. Do this for all questions, even where you have ticked "no one".

Here is an example which we have completed:

Who do you know who you can trust with information that could get you into trouble?

0 No one ( ) Tick		5 _____	M/C
1 PT _____	M/(C)	6 _____	M/C
2 SL _____	M/(C)	7 _____	M/C
3 RN _____	(M)/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to take your mind off your worries when you feel under stress?

0 No one ( ) Tick		5 _____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to help you feel more relaxed when you are under pressure or tense?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who accepts you totally, including your worst and best points?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to care about you, regardless of what is happening to you?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Who can you really count on to help you feel better when you are feeling generally "down in the dumps"?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

☐☐☐

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

☐

Who can you count on to help you feel better when you are very upset?

0 No one ( ) Tick		5_____	M/C
1 _____	M/C	6 _____	M/C
2 _____	M/C	7 _____	M/C
3 _____	M/C	8 _____	M/C
4 _____	M/C	9 _____	M/C

☐☐☐

How satisfied are you with the support you receive?

1	2	3	4	5	6
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

☐

Below are a set of multiple choice statements. Circle the letter next to the <u>one</u> statement in each group which <u>best</u> describes the way you have been feeling over the <u>past week</u>, including today. Be sure to read all the statements in each group before making your choice.

A I do not feel sad.
B I feel sad.
C I am sad all the time and I can't snap out of it.
D I am so sad or unhappy that I can't stand it. ☐

A I am not particularly discouraged about the future.
B I feel discouraged about the future.
C I feel I have nothing to look forward to.
D I feel that the future is hopeless and that things cannot improve. ☐

A I do not feel like a failure.
B I feel I have failed more than the average person.
C As I look back on my life, all I can see is a lot of failures.
D I feel I am a complete failure as a person. ☐ 3

A I get as much satisfaction out of things as I used to.
B I don't enjoy things the way I used to.
C I don't get real satisfaction out of anything anymore.
D I am dissatisfied or bored with everything. ☐

A I don't feel particularly guilty.
B I feel guilty a good part of the time.
C I feel quite guilty most of the time.
D I feel guilty all of the time. ☐

A I don't feel I am being punished.
B I feel I may be punished.
C I expect to be punished.
D I feel I am being punished. ☐

A I don't feel disappointed in myself.
B I am disappointed in myself.
C I am disgusted with myself.
D I hate myself. ☐

A I don't feel I am any worse than anybody else.
B I am critical of myself for my weaknesses or mistakes.
C I blame myself all the time for my faults.
D I blame myself for everything bad that happens. ☐

A I don't have any thoughts of killing myself.
B I have thoughts of killing myself, but I would not carry them out.
C I would like to kill myself.
D I would kill myself if I had the chance. ☐

A I don't cry any more than usual.
B I cry more now than I used to.
C I cry all the time now.
D I used to be able to cry, but now I can't cry even though I want to. ☐

A I am no more irritated now than I ever am.
B I get annoyed or irritated more easily than I used to.
C I feel irritated all the time now.
D I don't get irritated at all by the things that used to irritate me. ☐

A I have not lost interest in other people.
B I am less interested in other people than I used to be.
C I have lost most of my interest in other people.
D I have lost all of my interest in other people. ☐ 13

A I make decisions about as well as I ever could.
B I put off making decisions more than I used to.
C I have greater difficulty in making decisions than before.
D I can't make decisions at all anymore. ☐

A I don't feel I look any worse than I used to.
B I am worried that I am looking old or unattractive.
C I feel that there are permanent changes in my appearance that make me look unattractive.
D I believe that I look ugly. ☐

A I can work about as well as before.
B It takes an extra effort to get started at doing something.
C I have to push myself very hard to do anything.
D I can't do any work at all. ☐

A I can sleep as well as usual.
B I don't sleep as well as I used to.
C I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
D I wake up several hours earlier than I used to and cannot get back to sleep. ☐

A I don't get more tired than usual.
B I get tired more easily than I used to.
C I get tired from doing almost anything.
D I am too tired to do anything. ☐

A My appetite is no worse than usual.
B My appetite is not as good as it used to be.
C My appetite is much worse now.
D I have no appetite at all anymore. ☐

A I haven't lost much weight, if any, lately.
B I have lost more than 2 kilos (5lbs).
C I have lost more than 4 kilos (10lbs).
D I have lost more than 6 kilos (15lbs). ☐

I am purposely trying to lose weight by eating less.

Yes ☐ No ☐ ☐

A I am no more worried about my health than usual.
B I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
C I am very worried about physical problems and it is hard to think of much else.
D I am so worried about my physical problems that I cannot think about anything else. ☐

A I have not noticed any recent change in my interest in sex.
B I am less interested in sex than I used to be.
C I am much less interested in sex now.
D I have lost interest in sex completely. ☐

A number of statements which people use to describe themselves are given below. Read each statement and then circle the one number which best indicates how you generally feel.

0 ---------- 1 ---------- 2 ---------- 3
almost never sometimes often almost always

I feel pleasant	0	1	2	3
I feel nervous and restless	0	1	2	3
I feel satisfied with myself	0	1	2	3
I wish I could be as happy as others seem to be	0	1	2	3
I feel like a failure	0	1	2	3
I feel rested	0	1	2	3
I am "cool, calm, and collected"	0	1	2	3
I feel that difficulties are piling up so that I cannot overcome them	0	1	2	3
I worry too much over something that really doesn't matter	0	1	2	3
I am happy	0	1	2	3
I have disturbing thoughts	0	1	2	3
I lack self-confidence	0	1	2	3
I feel secure	0	1	2	3
I make decisions easily	0	1	2	3
I feel inadequate	0	1	2	3
I am content	0	1	2	3
Some unimportant thought runs through my mind and bothers me	0	1	2	3
I take disappointments so badly that I can't put them out of my mind	0	1	2	3
I am a steady person	0	1	2	3
I get in a state of tension or turmoil as I think over my recent concerns and interests	0	1	2	3

Compared to the person in excellent health, how would you rate your health at the present time?

Terrible	1
Very poor	2
Poor	3
Fair	4
Good	5
Very good	6
Excellent	7

The next set of questions relates to some aspects of your military experience. These questions are only about service in the Regular force, please do not include information about service in the Territorial Force.

When did you enlist in the Regular Force in the New Zealand Army?

_____ / _____ / 19_____

What was your severance date from the Regular Force in the New Zealand Army?

_____ / _____ / 19_____

If you have had broken service, please give details of enlistment periods:

_____

_____

The next set of questions refer to your terminal posting.

What was your rank? _____

What was your trade? _____

What was your corps? _____

What was your unit? _____

At which camp or area were you last posted? _____

What were your reasons for leaving the Army? Please tick the reasons given below which are appropriate for you, and briefly explain in each case.

(tick)

☐ Career / Job Change
Specify _____

☐ Financial
Specify _____

☐ Personal / Family
Specify _____

☐ Health / Medical
Specify _____

☐ Other, specify _____

_____

What was your personal gross annual income for your last year in the Army?

$_____

The following set of questions relates to your transition from Army to civilian life.

How definite were your civilian career plans before discharge from the Army?

1 ---------- 2 ---------- 3
Very definite Vague

Did you begin looking for civilian employment before your discharge from the Army?

Yes ☐ No ☐

Did you participate in any training/education in preparation for a civilian career prior to leaving the Army?

Yes ☐ No ☐

If yes, please give details:

_____

_____

_____

On leaving the Army did you participate in any training/education in preparation for a civilian career?

Yes ☐ No ☐

If yes, please give details:

_____

_____

_____

Whilst in the Army, did you receive voluntary study assistance?

Yes ☐ No ☐

On leaving the Army, did you receive voluntary resettlement study leave?

Yes ☐ No ☐

Are you currently a member of the Territorial Forces?

Yes ☐ No ☐

How often do you make use of military facilities (eg sporting facilities, mess etc)?

1 ---------- 2 ---------- 3
Often Sometimes Never

IN CONFIDENCE

Did you attend a resettlement seminar before leaving the Army

Yes ☐ No ☐

If yes, please state which aspects of the seminar were:

a) most useful: _____

_____

a) least useful: _____

_____

c) how the seminar could be improved: _____

_____

The following questions relate to how you <u>now</u> view your army experience.

My job responsibilities in the Army were clearly defined.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How often in the Army did you feel unable to satisfy the conflicting demands of various people over you?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

Opportunities for independent thought and action on my job in the Army were:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent Outstanding

To what extent did your job in the Army challenge your abilities?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all To a considerable extent

My work in the Army made a meaningful contribution.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How often were you asked to do things in the Army for which you were not fully qualified?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Nearly all the time

To what extent were your supervisors attentive to what you said?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all To a very great extent

To what extent did your supervisors encourage people to give their best effort?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

To what extent did your supervisors encourage the people who worked for them to exchange ideas and opinions?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

How successful were your immediate supervisors in dealing with higher levels of command?

1 ------- 2 ------- 3 ------- 4 ------- 5
Below average — Outstanding

Verbal reports were **never** accepted as everything **had to be** in writing.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How much friction was there in your section?

1 ------- 2 ------- 3 ------- 4 ------- 5
A great deal — Very little

Most members of my section trusted each other.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How did your section compare to other sections in terms of productivity?

1 ------- 2 ------- 3 ------- 4 ------- 5
Most productive — Below average productivity

Most members of my section took pride in their jobs.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How often were the objectives, goals or policies of your unit changed?

1 ------- 2 ------- 3 ------- 4 ------- 5
Very often — Very rarely or never

How do you feel about recommending the Army to a prospective recruit?

1 ---------- 2 ---------- 3
I would not recommend the Army under any circumstances — I would recommend the Army to most recruits

I had more opportunities for growth and advancement in the Army than I do in civilian life.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Do you feel that people at command levels of your sub-unit and unit were aware of the problems and needs at lower levels?

1 ------- 2 ------- 3 ------- 4 ------- 5
No, quite unaware Yes, very aware

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Are you engaged in any paid employment?

No ☐	Tick the category which is most appropriate for you (tick only one option). ☐ Unemployed ☐ Retired ☐ Student ☐ Beneficiary (ACC / Sickness benefit etc) ☐ Other (please state) _____
That is all the questions that we have for you. Please finish the questionnaire here. Thank you for your time and effort.	

Yes ☐	Please continue with the questions below.

The next set of questions are about your current work situation and experience.

How many hours do you work each week (on average)?

_____ hours

If you have more than one job, please give details of the job you consider to be your main job.

What is your current job?

_____

How long have you been employed in your current job?

_____

How many people do you work with at your workplace?

approx _____

How many jobs have you had since leaving the Army?
(Please only include jobs of 20 hours or more a week)

_____

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Since leaving the Army, how many months, in total, have you been in paid employment? (Jobs of 20 hours or more a week).

_____ months

In general, how closely related is your current job to your Army training and past Army career?

1	2	3	4
No relationship	Some relationship	Closely related	Very closely related

Please indicate how satisfied or dissatisfied you are with the following aspects of your job using the following categories:

1 = I'm extremely dissatisfied
2 = I'm very dissatisfied
3 = I'm moderately dissatisfied
4 = I'm not sure
5 = I'm moderately satisfied
6 = I'm very satisfied
7 = I'm extremely satisfied

The physical work conditions	1 2 3 4 5 6 7
The freedom to choose your own work method	1 2 3 4 5 6 7
Your fellow workers	1 2 3 4 5 6 7
The recognition you get for good work	1 2 3 4 5 6 7
Your immediate supervisor	1 2 3 4 5 6 7
The amount of responsibility you are given	1 2 3 4 5 6 7
Your rate of pay	1 2 3 4 5 6 7
Your opportunity to use your abilities	1 2 3 4 5 6 7
Industrial relations between management and workers	1 2 3 4 5 6 7
Your chance of promotion	1 2 3 4 5 6 7
The way your firm is managed	1 2 3 4 5 6 7
The attention paid to suggestions you make	1 2 3 4 5 6 7
Your hours of work	1 2 3 4 5 6 7
The amount of variety in your job	1 2 3 4 5 6 7
Your job security	1 2 3 4 5 6 7

For each of the following items, circle the one number which best represents the way you see your <u>current</u> work situation and employing organisation.

How much **variety** is there in your job?

1 ---------- 2 ---------- 3
Very little Very much

How much opportunity do you have to do a number of different things on your job?

1 --------- 2 --------- 3 --------- 4
A minimum amount A maximum amount

How often do you have opportunities to work on different jobs?

1 ------- 2 ------- 3 ------ 4 ------ 5
Never Nearly all the time

Opportunities to do creative work on my job are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent Outstanding

Opportunities to make full use of my knowledge and skills on my job are:

1 ------- 2 ------- 3 ------ 4 ------ 5
Non-existent Outstanding

To what extent does your job challenge your abilities?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all To a considerable extent

How often do you work on difficult and challenging problems in your job?

1 ------- 2 ------- 3 ------ 4 ------- 5
Never Nearly all the time

To what extent does your job require a high level of skill and training?

1 ------- 2 ------- 3 ------ 4 ------ 5
Not at all To a considerable extent

How important is your work?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not very important Of vital importance

How many tasks do you perform on your job which you consider relatively unimportant or unnecessary?

1 ------- 2 ------- 3 ------- 4 ------- 5
Nearly all Practically none

My work makes a meaningful contribution.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How much autonomy (freedom) do you have on your job?

1 ---------- 2 ---------- 3
Very little Very much

I have the freedom to do pretty much what I want on my job.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

Opportunities for independent thought and action on my job are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent Outstanding

Excessive rules and regulations interfere with how well I am able to do my job.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How often do you feel that the amount of work you have to do interferes with how well it gets done?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

Opportunities to complete the work I start are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent Outstanding

How often do you feel that your job tends to interfere with your family life?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never Almost always

What type of organisation/firm do you work for? Please tick the most appropriate response, and specify the type in the space provided.

☐ Large international organisation
(eg IBM, Fletchers, ANZ)
specify _____

☐ Large national organisation
(eg NZ Post, Government Department, national chain store)
specify _____

☐ Large Local organisation
(eg Hospital, University, City Council)
specify _____

☐ Medium Local organisation
(eg School, Hotel, Retail store)
specify _____

Please continue with the questions on the following page

☐ Small Local Business or self employed
(eg Coffee bar, Sign writer, G.P.)
specify _____

That is all the questions we have for you. Thank you for your time and effort in completing the questionnaire.

IN CONFIDENCE

To what extent does a friendly atmosphere prevail among most of the members of your workgroup?

1 ------- 2 ------- 3 ------- 4 ------- 5
To a very small extent — To a considerable extent

☐ 35

Members of my workgroup trust each other.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

☐

Communication is good in my workgroup.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

☐

A spirit of cooperation is evident in my workgroup.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

☐

How much friction is there in your workgroup?

1 ------- 2 ------- 3 ------- 4 ------- 5
A great deal — Very little

☐

The people I work with cooperate to get the job done.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

☐

Assistance from my co-workers in carrying out difficult jobs is:

1 ------- 2 ------- 3 ------- 4 ------- 5
Non-existent — Outstanding

☐

The opportunities for promotion in my organisation compared to those in other organisations are:

1 ------- 2 ------- 3 ------- 4 ------- 5
Much lower — Much higher

☐

Does this organisation perform an important function?

1 ---------- 2 ---------- 3
Yes, for the most part — Uncertain — No, for the most part

☐

Most staff in my organisation are proud of it.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

☐

To what extent is employment in your organisation beneficial to your career?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a considerable extent

☐ 4.

I would rather stay in my organisation than move to another.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

Working conditions in my organisation are better than in other organisations.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How do you feel about recommending your organisation to prospective staff?

1 ---------- 2 ---------- 3
I would not recommend my organisation under any circumstances
I would recommend my organisation to most prospective staff

I have more opportunities for growth and advancement in my organisation than in other types of organisations.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

Most individuals see a good future for themselves in my organisation.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

I think my organisation has a good image to outsiders.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

In comparison with people in similar jobs in other organisations, I feel my pay is:

1 ------- 2 ------- 3 ------- 4 ------- 5
Much higher Much lower

Most of the staff in my section/department would **not** want to change to another section/department.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

Most of the senior staff in this organisation feel that my section/department is:

1 ------- 2 ------- 3 ------- 4 ------- 5
Somewhat below average
Outstanding

Most members of my workgroup take pride in their jobs.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

Most of the staff in my section/department think ours is the best in my organisation.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree Strongly disagree

How often are you kept informed about things you need to know about your work?

1 ------- 2 ------- 3 ------- 4 ------- 5
Almost always — Practically never

My job responsibilities are clearly defined.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

New staff get the on-the job training they need.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

It is **not often clear** who has the authority to make a decision regarding my job.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Do you understand how your job fits into the overall objectives of your organisation?

1 ------- 2 ------- 3 ------- 4 ------- 5
Always understand — Never understand

To what extent are you aware of the opportunities for promotion and advancement in your job?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a considerable extent

How does your workgroup compare to others in your organisation in terms of pressure to produce?

1 ------- 2 ------- 3 ------- 4 ------- 5
Much less pressure — Much more pressure

Hours of work are very irregular.

1 --------- 2 --------- 3 --------- 4
False — True

Is there a need for more staff in your section/department?

1 --------- 2 --------- 3 --------- 4
We are shorthanded — We have more workers than we need

In general, do you consider the deadlines that are established for output and completion of your work to be realistic?

1 --------- 2 --------- 3 --------- 4
Very unrealistic — Very realistic

The work load here is such that staff:

1 --------- 2 --------- 3 --------- 4
Very rarely show signs of strain — Very often show signs of strain

How often are you asked to do things for which you are not fully qualified?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never — Nearly all the time

How well does your supervisor recognise and reward good performance by his/her staff?

1 --------- 2 --------- 3 --------- 4
Not very well — Extremely well

In my workgroup, staff are almost always certain to hear about mistakes but seldom hears about their successes.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

To what extent is your supervisor willing to listen to your problems?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

To what extent is your supervisor friendly and easy to approach?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

To what extent is your supervisor attentive to what you say?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

Staff generally trust their immediate supervisor.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

The staff at my work place trust senior management.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

To what extent does your supervisor emphasise high standards of performance?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

To what extent does your supervisor set an example by working hard him/herself?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

To what extent does your supervisor encourage people to give their best effort?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

Staff are encouraged to work for promotion.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How often does your supervisor hold group meetings where he/she and the people who work for him/her really discuss things?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never the time — Nearly all

Generally, how are decisions made in your section?

1 ------- 2 ------- 3 ------- 4 ------- 5
By the supervisor alone — By the whole section equally

To what extent does your supervisor encourage the people who work for him/her to work as a team?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

To what extent does your supervisor encourage the people who work for him/her to exchange ideas and opinions?

1 ------- 2 ------- 3 ------- 4 ------- 5
Not at all — To a very great extent

How successful is the supervisor of your section/department in his/her dealings with higher levels of management?

1 ------- 2 ------- 3 ------- 4 ------- 5
Below average — Outstanding

How successful is your immediate supervisor in dealing with higher levels of management?

1 ------- 2 ------- 3 ------- 4 ------- 5
Outstandingly successful — Below average success

Individual judgement is not trusted.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Verbal reports are **never** accepted as everything **has to be** in writing.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

People act as though everyone must be watched or they will slack off.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

In my organisation people are treated with respect.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

To what extent do things in your organisation have to be done by the book?

1 ------- 2 ------- 3 ------- 4 ------- 5
Everything is done by the book — Practically **nothing** is done by the book

How does your workgroup compare to other workgroups in terms of productivity?

1 ------- 2 ------- 3 ------- 4 ------- 5
Most productive productivity — Below average

How would you rate the quality of work produced in your workgroup?

1 ------- 2 ------- 3 ------- 4 ------- 5
Very poor — Very good

How does your section/department compare to all other sections/departments in your organisation in terms of productivity?

1 ------- 2 ------- 3 ------- 4 ------- 5
Most productive — Below average productivity

Generally there are friendly and cooperative relationships between the different sections/departments of my organisation.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

There is poor communication between the sections/departments of my organisation.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

To what extent do you feel there is conflict (rivalry and hostility) between your section/department and other sections/departments in your organisation.

1 ------- 2 ------- 3 ------- 4 ------- 5
To a very great extent — To a very small extent

Things in my organisation seem to happen contrary to rules and regulations.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Things are planned so that everyone is getting in each others way.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How often are the objectives, goals or policies or your organisation changed?

1 ------- 2 ------- 3 ------- 4 ------- 5
Very often — Very rarely or never

How often are the objectives, goals, or policies of section/department in conflict with those of the organisation?

1 ------- 2 ------- 3 ------- 4 ------- 5
Often — Never

The things that are seen as most important in my section/department are **not** related to overall organisational effectiveness.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Supervisors generally know what is going on in their areas.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Do you feel that supervisors and managers are aware of the problems and needs at lower levels of your organisation?

1 ------- 2 ------- 3 ------- 4 ------- 5
No, quite unaware — Yes, very aware

Management keep well informed about the needs and problems of the staff.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

My job is meaningfully related to other jobs in my organisation.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

Responsibility is assigned so that staff have authority within their own areas.

1 ------- 2 ------- 3 ------- 4 ------- 5
Strongly agree — Strongly disagree

How often do you feel that you have too little authority to carry out the responsibilities assigned to you?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never — Almost always

How often do you feel unable to satisfy the conflicting demands of various people over you?

1 ------- 2 ------- 3 ------- 4 ------- 5
Never — Almost always

The following are a series of statements that <u>may or may not</u> be true of your job and your workplace. Circle the one number which best describes how true you feel each item is as it applies to you and your workplace, using the following categories.

1 Definitely false — 2 More false than true — 3 More true than false — 4 Definitely true

There can be little action taken at my workplace until a supervisor approves a decision 1 2 3 4

A person who wants to make his/her own decisions would be quickly discouraged 1 2 3 4

Even small matters have to be referred to someone higher up for a final answer 1 2 3 4

1 Definitely false --- 2 More false than true --- 3 More true than false --- 4 Definitely true

I have to ask my supervisor before I do almost anything ..... 1 2 3 4 ☐ 4

Any decision I make has to have my supervisor's approval ..... 1 2 3 4 ☐

The following are a series of statements that may apply to your job, please indicate your answer by circling one of the following responses:

1 Never --- 2 Seldom --- 3 Sometimes --- 4 Often --- 5 Always

How frequently do you usually participate in the decision to hire new staff? ..... 1 2 3 4 5 ☐

How frequently do you usually participate in decisions on the promotion of any staff? ..... 1 2 3 4 5 ☐

How frequently do you participate in decisions on the adoption of new workplace policies? ..... 1 2 3 4 5 ☐

How frequently do you participate in the decisions on the adoption of new workplace programs? ..... 1 2 3 4 5 ☐

The following are a series of statements that may or may not be true of your job and your workplace. Circle the one number which best describes how true you feel each item is as it applies to you and your workplace, using the following categories.

1 Definitely false --- 2 More false than true --- 3 More true than false --- 4 Definitely true

I feel that I am my own boss in most matters ..... 1 2 3 4 ☐

A person can make their own decisions without checking with anybody else ..... 1 2 3 4 ☐

How things are done here is left pretty much up to the person doing the work ..... 1 2 3 4 ☐

People here are allowed to do almost as they please ..... 1 2 3 4 ☐

Most people here make their own rules on the job ..... 1 2 3 4 ☐

The people here are constantly being checked on for rule violations ..... 1 2 3 4 ☐

People here feel as though they are constantly being watched to see that they obey all the rules ..... 1 2 3 4 ☐

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That is all the questions we have for you.

Thank you for your time and effort in completing the questionnaire.