Principals, Deputy Principals and Work Stress: The Role of Coping and Leisure.

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Abstract

It is now well established that stress in the workplace can adversely affect productivity, absenteeism, worker turnover and employee health and well-being. Nowhere in New Zealand does this appear to be more apparent than in the educational sector, a sector that has undergone enormous legislative and organisational change during the last eight years. Research has been carried out on teachers but little research has been concerned with principals and deputy principals, the implementors of this change. Even less research has explored how they cope with or manage the stress they experience in the face of increasing work demands. Studies have investigated a range of activities but have, within the context of work and stress, largely ignored the area of leisure and its role as a coping strategy. Within the context of transformation and change, the aims of the present study were to identify the sources of stress for principals and deputy principals, their coping behaviours, and the importance of leisure as a means of coping, and then to systematically examine the relationship between these variables. A questionnaire was developed and sent to 1042 principals and deputy principals of secondary schools throughout New Zealand. Because a number of reviews of work stress and coping have highlighted the issue of measurement as one of particular concern, the measures used in this study were rigorously evaluated before their relationships with different outcome variables were explored. The evaluations produced a robust, replicable and reliable two factor structure for both the coping and leisure measures using the FACTOREP procedure. These results also suggested that the constructs of coping and leisure are best measured in terms of problem and emotion focused coping and active and passive leisure. The implications of these findings for measurement practices were discussed. The results of the regression analyses that followed showed that emotion focused and problem focused coping, as well as having main effects, moderated the relationships between different stressors and stress outcomes. For emotion focused coping the relationship between different stressors and their outcomes became more pronounced for individuals making less use of emotion focused coping than for individuals making frequent use of emotion focused coping. For problem focused coping the effect was such that the relation between stressors and outcomes became generally more pronounced for individuals making frequent use of

problem focused coping than for individuals making less use of problem focused coping. Passive recuperative leisure needs were associated directly with stress reactions, such that the more serious the distress the greater the perceived importance of passive leisure. However the importance of passive recuperative leisure was not found to moderate the relationship between stressors and stress reactions. Active challenging leisure needs had no effect on stress reactions either independently or interactively with work stressors. The implications of these findings were discussed and some directions for future research were indicated.

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Chapter 1 - An Overview of the Scope of the Study

Many people outside the teaching profession express surprise at claims made that stress is a prevalent and pervasive part of a teacher's life (McLeod, 1992). The teacher's working conditions have always been a source of discussion. Comments made about teachers' working conditions which include three months holiday a year, short working days, children being captive consumers, little or no need to face the challenges of competition or uncertain employment have all now been given as reasons for regarding teachers as a privileged group in a comfortable position, fighting to protect what they have and not doing too badly compared with the general work force (McLeod, 1992). However for many years it has been recognised by educators and researchers that secondary schools are virtual "hotbeds" of stress, (Williamson & Campbell, 1987; Borg, 1990; Lyons, 1990) and it can be argued that the working life of a principal has never been easy (Savery & Detiuk, 1986). Recent publicity about the stress that secondary teachers, particularly principals and deputy principals have been experiencing ("Tomorrow's Schools", 1991; Boyd, 1993; Cooney, 1993; "Retiring High School Principal", 1993; Woods, 1994; "Conflict Increases", 1995; "Principals' Exodus", 1996) would suggest that the problem is getting worse and that the reality of the situation for teachers and their leaders is anything but that perceived by outsiders.

The recent and continuous reporting of increasing stress and greater demands on the time and expertise of secondary school principals has coincided with, and largely been attributed to, the implementation of a new system of educational administration introduced in New Zealand in 1988 with the report of the Taskforce to Review Education Administration, (*Picot Report*). Radical changes introduced in education administration from that time have required school principals to accept new roles that have become increasingly harder to cope with, reducing their ability to provide effective educational and professional leadership (Williams, 1995a). It is against this background that this exploratory study was conducted. It examines the sources of work stress that principals and deputy principals, the managers of the new system in schools, perceived as taxing or exceeding their resources, and thus endangering their well-being. The study also draws attention to the idea of coping and of how principals and deputy principals cope with the demands placed upon them. As a particular focus of interest, it also explores the importance of leisure as a method of coping with work stress.

The study came into being because of the informal murmurings of personal friends who were secondary school principals and deputy principals. These people complained of the personal strains that they were experiencing, which were attributed to the changes in education policy which they were obliged to implement. They were the new teaching executives who, as foreshadowed by the Picot Report (Taskforce to Review Education Administration, 1988), were required to shift from positions of organisational and professional responsibility for educating pupils, to the broader, more comprehensive, and commercial role of managing their schools as quasi-business enterprises. The shift led many of them personally and collectively to make public statements of concern about the sweeping changes confronting them, the speed of their implementation, and the consequent harmful effects on their own health and well-being (e.g. "Tomorrows Schools", 1991). Such effects have already been described as occupational stress and burnout (Cooper & Marshall, 1976; McConnell, 1982; Conaway & Coleman, 1984), and they were known to have had wider repercussions both within organisational structures and outside in personal relationships (Hurley, 1988, p.29).

While a few researchers have reported change as a potent stressor in the workplace (Hurley, 1988; Lewis, 1990; Callan & Dickson, 1992), to date few have focused on the effects of change in education administration and even fewer have focused on the kinds of strategies which principals and deputy principals - i.e. the implementors of organisational change - use to deal with the resulting stress. In fact as Ashford (1988) noted, the literature on change generally is curiously silent on the specific ways in which individuals cope with major organisational change, and it says very little about the value they place on specific approaches to dealing with any resulting work stress. In particular, previous research does not appear to have addressed the question of the leisure and recreational pursuits that individuals might use outside the work environment to counter any effects of work stress. Further, Borg, (1990) in a specific review of teacher stress, noted that the majority of studies that had been conducted, were either somewhat dated or based on small samples of subjects, but in any case he thought that the recent widespread administrative changes that were imposed upon them might have altered the picture, particularly as it affected head teachers.

The remainder of this chapter will introduce the specific components of the study under consideration, each of which will be detailed more fully in subsequent chapters.

It will do this first by setting the organisational changes in education in a political and ideological context. After that it will raise the issue of occupational stress as a result of the changes, particularly in relation to the changing role of the principal and deputy principal. It will then consider coping as part of the stress process, and it will conclude by paying particular attention to the use of leisure in coping with stress at work.

Subsequently, the distillation from each of the following chapters on stress, coping and leisure will be carried into chapters on the research design, questionnaire development, survey procedures, and data analysis. The results will then be presented and discussed and the study drawn to a conclusion, with recommendations that might alleviate the practical situation of those under stress as well as raising theoretical questions for further consideration.

The Context of Educational Reform in New Zealand

Trite as it might seem, it has to be recorded that New Zealand is part of a changing world, and because of this it could not avoid many of the internal social and economic changes that have occurred in the western world recently. During the 1980s most advanced industrial societies have witnessed a strong resurgence of economic and political liberalism. This movement began in western capitalist countries to subordinate government intervention to the operation of market forces, both as a more effective way of promoting economic growth and as a more efficient means of allocating and using scarce resources (King, 1987). Commentators such as Codd (1993a) claim the movement set out to maximise individual choice within a deregulated social environment, and to minimise state imposed responsibilities, duties and obligations. It gave property rights priority over social citizenship or welfare rights, and gave economic efficiency priority over human need in the allocation of resources (Codd, 1993b). According to Barry (1986) this "new" market liberalism was a rival of classical liberalism with its doctrines of individual freedom, public choice and minimal government. The resurgence of market liberalism was accompanied by adherence to monetarist economic policies, and as with the United States of America under the Reagan administration, and Britain under the Thatcher government, the Lange-Douglas government began to roll back the state (deregulation, privatisation), to foster a climate

of competition ("enterprise culture") and to set aside most of the traditional concerns for social justice in the political reform agenda (Codd , 1993a).

By 1987 the new doctrines of economic rationalism had begun to influence education policy, and they came not only to change the fundamental structure of the New Zealand education system, but to transform the practice of educational administration in two major ways (Codd, 1993a). First, a managerial ideology was imposed on all schools in such matters as bulk funding, individual employment contracts, and merit pay. Second, under the influence of market liberalism, educational administrators were forced to surrender their traditional commitment to the values of universal educational opportunity and social justice, and to pursue the alternative goals of competition and individual choice.

Consequently, school principals had their functions and their lines of accountability redefined. As they had to take on new managerial responsibilities, the perception of many was that they had been diverted from their professional leadership roles to be transformed into managers. These issues will be considered in more detail in chapter two, but within this changing context it seems timely to promote an extensive study of the occupational stress of principals and deputy principals and its effect on their well-being.

Stress

To many people, organisational change poses problems, and from reports in the media of the early retirements and high stress levels of principals of secondary schools ("Retiring High School Principal", 1991; "Stress at Crisis Point", 1993; Williams, 1995a, 1995b; "System too Frustrating", 1996; "Principals Exodus", 1996), it is clear that organisational change is made at a considerable cost to both individuals and organisations (McGee, Keown & Oliver, 1993). Stress brings anxiety and uncertainty, which although well known as a natural and inevitable response to the often competing and complex demands of personal and professional life, can also significantly affect job performance, personal health and organisational well-being (Kearns, 1986 cited in Cox, 1993; Moos, 1988).

What is not clear and has not been so well studied, is the measurement of specific stressors in the workplace in the light of current social and economic change (Dewe, 1991a). For too long researchers have relied on general measures of stress which are relevant neither to the specific populations being studied (Shirom, 1988) nor to current social and economic changes (Glowinkowski & Cooper, 1985; Brief & Ateih, 1987). To remedy this, researchers need to investigate the demands which workers themselves perceive as stressful in their specific work environment (Dewe, 1991a). However, almost inevitably, articles on stress begin by pointing to disputes over the definition of stress, the best way it is to be measured, and how the results are to be explained (Vingerhoets & Marcelissen, 1988), - such issues of definitions, models and measurement of stress will be addressed in chapter three.

Coping

Coping is defined in terms of the response to work or work-related encounters that tax individual abilities and resources (Dewe, Cox & Ferguson, 1993). It follows that an understanding of how people cope with work related stress should facilitate a better understanding of work stress, and enable timely interventions to be made to prevent serious problems arising. The concept, however, is still poorly understood and has received a less than complete treatment in terms of its role in the stress process (Parasuraman & Cleek, 1984; Newton & Keenan, 1985; Dewe & Guest, 1990). Specifically, the bulk of research into stress in educational settings has failed to address the role of coping in stressful encounters (Hiebert & Mendaglio, 1988). Instead, researchers have been content to ask school principals just how stressful they found situations, without trying to identify the demands they faced, or to elicit their perceived coping behaviours. Here in this overview, it is sufficient to mention that in gaining a better understanding of the strategies individuals use to cope with stressors, it may be useful to consider their use of leisure.

Leisure

While many work stress researchers have investigated strategies that people

employ outside work to cope with work related stress, such as social networks (Cohen & Syme, 1985; Karasek & Theorell, 1990) most of them concentrated on job related coping behaviours and very few explored the use of leisure or recreation as a coping strategy. This omission is regrettable because it can be argued that today, rather than work being the prime source of life satisfaction and leisure playing a residual role, leisure is set to act as the main outlet for self expression, with work providing the essential backcloth for daily existence (Cushman, 1991). In support of that contention is the common observation that because of changing employment conditions a major shift has occurred towards the use of free time - particularly for those who are unemployed. Therefore while work remains a necessity for most people, for increasing numbers of New Zealanders it is not the central feature of life. Some are increasingly identifying leisure as more significant in their quality of life than work, as expressed by the comment that "I hate working hard, but love playing hard" (Cushman, 1991). Others are tending to focus more on their quality of life away from their work than their experience of it at work. Their rewards are a level of high social interaction and entertainment, and a low level of physical exertion (Wilson, Russell & Paulin, 1990).

Thus leisure has been shown to be an important determinant of general life satisfaction, fairly free of the constraints imposed by work demands such as responsibility, work efficiency, time structure, and job status (Kirkcaldy & Furnham, 1990). Therefore it is to leisure that this thesis turns and in particular to the role of leisure in the coping process. It may be as Hayes, Brightwell and Antozzi suggested back in 1984, that we are living or existing in a tension epidemic and it may be that people either do, or perhaps could, manage their work stress levels better through their leisure. For that reason the present thesis seeks to discover how important leisure is perceived to be in coping with stressful work situations, and to explore whether the use of leisure moderates the stress they experience.

It is possible that the reduction of work stress through leisure might not be along the preferred path of dealing directly with the stressors (problem focused), as venerated by western values (Lazarus, 1993), but rather along that of dealing indirectly with their effects (emotion focused). Hence it could be that the emotion focused actions, once considered second best and maladaptive (Roskies & Lazarus, 1980) might indeed prove to be the better course for people to adopt in coping with their stressors in the

workplace, given the ample evidence that under certain conditions - particularly those in which little can be done to change stressful situations - rational problem solving efforts can be counter productive, and even likely to result in chronic distress when they fail (Collins, Baum, & Singer, cited in Lazarus, 1993).

Purpose of the Present Study

The thesis, in exploring the role of coping and leisure in dealing with work-related stress, does so in two stages. First it considers a range of measurement and psychometric issues surrounding the measurement of stressors, coping and leisure. Second it uses the measures derived to consider the role of coping and leisure in the stressor-health relationship. In particular it identifies:

a) those situations which principals and deputy principals perceive as causes of their strain.
b) the coping strategies they say they use to deal with these situations, and how important they perceive leisure to be as a means of coping with their work-related stress.
c) the psychometric characteristics of the measures of stress, coping and leisure developed.
d) the relationships between the presence of work stressors and general indicators of psychological health.
e) the direct and moderating effects of coping and leisure within the context of the stressor-health relationship.

Theoretical issues underlying each construct presented in this introductory chapter will of necessity be given detailed attention, as will the methods of measurement associated with them. To put the research into its context, the next chapter will detail the environmental climate, both ideological and applied, in which the group of subjects under consideration were working.

Chapter 2 - The Context of Educational Reform in New Zealand

This chapter will review the recent changes that have been brought about in education in New Zealand, and will attempt to identify the forces which drive them. In doing this it will detail the plight expressed by some principals and their deputies, reveal the ideological issues to which some scholars have given attention that might constitute a new form of stressor, and identify and document the relevant changes in the education administration system which politicians have introduced to New Zealand. The chapter will then consider the few research studies that have previously addressed the topic of head teachers' stress, before leading into the subsequent chapter which will deal with the specifics of stress and work stress as emerging phenomena of concern.

Organisational Change

From discussions with principals and deputy principals, from press reports, and from research conducted in New Zealand (McGee, Keown & Oliver, 1993), it is clear that for many teachers, the traditional aspects of their work which still cause distress - e.g. the motivation and behaviour of students, role overload, workload/time pressures, lack of support, negative community attitudes (McLeod, 1987) - appear to be far outweighed by the distress from educational reforms which they have been obliged to implement at the behest of successive governments. Other factors which have emerged, relate to the rapidity with which the reforms have been implemented and the inadequate training that has been given for the task (McGee, Keown & Oliver, 1993).

Yet it has to be conceded that while education organisations have undergone enormous legislative and organisational change recently, they are but one segment of society that has been subject to change. In fact it has been said that many organisations are in such virtual turmoil that organisational change in them has been unparalleled in attempts to overcome problems of debt, inefficiency and competitiveness (Callan & Dickson, 1992). Burke (1988) was among the first of the researchers to describe such changes as "occupational stressors", when he detailed those brought about by mergers and acquisitions, organisational retrenchment and decline, job ambiguity and insecurity. However the political rationale is that organisational change is the *sine qua non* of

economic survival - i.e. it is the only way to reduce inflation and massive overseas debt, to restore efficiency of operation, to maximise the use of plant, and to ensure the return of competitive ability in a free market economy.

But it is not the purpose of this thesis to debate the new economic and political liberalism, although it is necessary to outline the contesting political, ideological and educational principles surrounding educational reform in order to set this study in context, especially because conflicts emanating from the process of implementation of the reforms might constitute a series of novel if substantial contemporary stressors.

Early Retirements

One way to illustrate the stress principals and deputy principals are under as a result of changes in the New Zealand educational system, would be to look for changes in their health. However, because the relevant facts and figures on the health status and early retirement of school managers are not available, attention has to be paid to anecdotal evidence in the form of news media reports. Thus, Brian Clark, the principal of Hutt Valley Memorial High School, cited workload as the main reason for his stepping down at the early age of 50, and said that he knew many other principals who were thinking of doing the same (Boyd, 1993). He said that it was not so much an increase in his working hours that caused his problem, because he had always worked long hours, but it was the increasingly difficult nature of his workload. In particular he cited such tasks as meeting the new requirements of the *Public Finance Act (1989)*, the *Health and Safety in Employment Act (1992),* and the *Privacy Act (1993)*, as obliging him to spend much time on operational matters, as distinct from the professional leadership and teaching components of the job for which he had been selected and trained. Similarly, David Baird, ("Retiring High School Principal", 1993) the principal of Golden Bay High School, spoke out on his early retirement at the age of 50, but for him it was the reforms of *Tomorrow's Schools* (Minister of Education, 1988) that had undermined his role by placing too much power for the control of schools in the hands of lay people as distinct from the trained and experienced educational administrators who had exercised this control previously.

For its part, the professional association of school principals - the Post Primary

Teachers Principals Association (PPTPA) - viewed the early retirements and resignations with concern, and it conducted a survey sampling 319 eligible schools (Williams, 1995a). The results showed that no less than 87 had lost principals in the previous year through early retirements and 82 through resignations - and in both instances the shifts were attributed to stress, ill-health, burn out, and conflict with boards. In a subsequent poll of a larger sample of 1245 primary and secondary schools, about half of the maximum eligible, the (PPTA) discovered that serious conflict had occurred in 38%, and that the situation was deteriorating ("Conflict Increases in Schools", 1995). Two further secondary school principals cited the frustration of battling the new education bureaucracy as the reason for their early retirements (Williams, 1996). Thus the issues that initiated the present study in 1992 remain unabated in 1996.

The Monitoring of Educational Reforms

Moving away from the anecdotal and professional association reporting, Waikato University researchers in conjunction with the New Zealand Centre for Educational Research (McGee, Keown & Oliver, 1993) undertook a representative survey of secondary school staff to ascertain their perception of the new educational reforms. They approached principals, teachers, trustees, parents and students in 48 schools, and of particular relevance for the present study was their finding that principals expressed concerns about the reduction of support systems for schools, about their high workloads, and their increasing stress. In fact some 83% of principals reported having an increase in their *general* workload, and in qualifying it 40% of them reported it as a *significant* increase. It was also interesting that none reported having had a workload decrease. But in attending to specific detail of the workload, 40% of the principals rated the increase in their *administrative* workload as *significant*, and many of them reported a corresponding increase in their levels of stress.

Yet while many principals saw the changes and the pace of change as a source of stress, with three quarters of them considering the pace of change as itself causing an increase in their workload and their levels of distress, some also saw benefits arising out of some of the educational reforms. For example, they thought that the new boards of trustees would give parents and community members more reason to be interested and

involved with their schools and school communities than before, and make them aware not only of the strengths of schools but also of the difficulties under which the staff worked.

In fact all boards were given real power, and as a result some schools did profit from the greater involvement of parents ("Tomorrow's Schools", 1991). For a start the board of trustees were required to produce a charter that made them and their communities think about the aims of their schools for the children they served. They were able to make decisions about school life more appropriately and immediately at a local level, instead of having them delayed and remotely controlled by central government. They were given responsibility for their own operational budgets, and both they and the staff became more aware of the cost of their requisitions, and more accountable for the care and maintenance of facilities and equipment.

It can be seen that a number of benefits were to be derived from the application of the business ethic to the management of educational institutions, and from some of the ideas, strategies and terms borrowed from business theory. But the application was not entirely successful, and essentially a conflict arose between the instrumental values of economic management and the intrinsic values of educational practice. The emerging conflict will be taken up later in the chapter, but here it is important to note that in spite of some identified benefits, certain principals and social commentators said that the reforms represented a serious attack on education and on teachers, and that they produced some extraordinary disasters which would flow on through to affect the education which children received (Codd, 1991; Williams, 1995b).

In particular, problems were said to have developed with regard to the implementation of the *Employment Contracts Act* (1991), the new School Certificate system, the new school zoning for pupils, the new bulk funding of teachers salaries, and in services for special education, because the government had failed to consult with the people who had to implement the policies. In such matters the principals and their boards were not united - in fact the controversy between principals and their boards had become so manifest that Lloyds of London was reported to have discontinued the insurance of some 300 New Zealand secondary principals because of the growing costs of their legal disputes with trustees (Brown, 1994). It was also said that one principal

was leaving the teaching profession each week, partly due to disharmony with boards of trustees ("Principals Leaving", 1993).

One particularly contentious issue with the removal of formal administrative structures from the local and district level was that it produced a situation in which schools were encouraged to compete for students and for resources. But at the same time the Ministry of Education exercised centralised control through legal contracts, through institutional charters, and through regular review and auditing processes. In this way the government was able to control educational expenditure by way of bulk grants, while shifting responsibility for the way the funds are spent from the state to the Boards of Trustees (Codd, 1993a).

The policy of bulk funding was undoubtedly the most strongly contested feature of the new policy of school self management. Within the new structure, individual schools received annual operational grants from the Ministry of Education that were based on a complex formula to cover such areas as school maintenance, teaching, resources, in service training and relief teaching. Although schools were able to supplement these grants with local fund-raising, their capacity to do so varied widely, with resultant inequalities of provision (Wylie, 1992).

One board of trustees Annual Report (Toothill, 1994) gave official confirmation to some of the negative features associated with the advent of educational reforms. It referred in particular to the amount of paper work that schools had to undertake because of continual changes in legislation, and of the higher reporting standards required by the Ministry as it tightened accountability. What was not widely known was that the financial reporting requirements of every school were similar to those of every government department, and they were said to be even more detailed than those of an average company in business.

Despite these difficulties, teachers at one time were generally thought to be in support of the changes imposed on them, and as has been mentioned previously, some came to acknowledge that constant and rapid change was a fact of life (Cooney, 1993). However teachers called for the changes to be better co-ordinated and managed, and for principals and boards not to be bombarded with unscheduled reforms. The latter created

special problems because school principals were required to keep abreast of the rapid changes, and to be in a position to advise their boards of trustees on their implications. In other words, not only were principals required to preserve their roles of teachers and educational leaders, but they also had to market and promote their schools as well.

Having considered some of the anecdotal evidence of the reality of the stress reactions principals and deputy principals said they were experiencing as a result of educational reform, this chapter will now turn to explore the philosophy behind the reforms. As previously mentioned, it was thought that any conflict identified there might constitute a new source of stress arising in the workplace.

The Political Context of Restructuring

The changes in education in New Zealand have their counterparts elsewhere in the world, with differences only in scale, sequence and significance. Essentially they are an outcome of the interplay of economic forces which are evident in society at large (Taylor, 1990; Green, 1996). However, according to Shirley (1990) the reform programme referred to as economic liberalisation was a misnomer for "New Right" policies and the restructuring of economic and social relations. This philosophy of the New Right stemmed from Hayek, a leading European political philosopher of the 1940s, and Milton Friedman, a contemporary American economist. Subsequently the seeds were planted in Britain, Canada and Australia, and they were introduced in New Zealand by the fourth labour government when taking office in 1984. They became known as "Rogernomics" after Roger Douglas, MP, the Minister of Finance in that Labour Government and their chief proponent, and they were buttressed by a powerful business, financial and Treasury cabal which argued that decisions in the economic realm should be shifted from Parliament to the market-place. The philosophy took hold and wrought substantial changes to the social and economic fabric of the country in terms of greater efficiency, consumer choice, and *user-pays*, but they involved a restrictive monetary policy, financial deregulation, and the dismantling of state social services (Shirley, 1990).

The elevation of the importance of the market met little opposition when the

government changed from Labour in 1990. Instead, the incoming National party applied virtually the same economic policy with an even stronger will than its predecessor at the other political extreme. It transformed the state sector, and as a result, to use Shirley's (1990) adjective, society was "convulsed". Education was among the first of the social service departments to be decentralised, restructured, and reorganised along quasi-consumer directed lines - attention later was given to the housing, health, welfare and justice portfolios. The emphasis switched from centralised community concern and sharing, to local individual perception and choice, and again in Shirley's (1990) words, its effect was to create a society which became both spatially and socially divided.

It was in this ideological milieu that the principals and deputy principals of secondary schools were obliged to try to strike a balance between the old and the new, the known and the unknown. For them, the process of reform simply added to their existing work because they found themselves designated as educational managers rather than simply as head teachers.

The new philosophical concern was further borne out by the remarks of the Hon David Lange, Prime Minister and Minister of Education in the 1987-1990 labour government, when he spoke about the necessity for schools to be controlled by "good managers" who preferably were not teachers! ("Trainee Teachers", 1987). Evidently, his intention was consistent with that of the Picot Committee (see p.16 below) to have school managers train their "consumers", i.e. students, exclusively for the job market - and this at a time of rising unemployment. Incidentally, the speed with which the Picot Report (Taskforce to Review Education Administration, 1988) was implemented was justified earlier as an imperative strategy by Roger Douglas in his address to the Australian National Press Club in Canberra, where he said that the momentum of change had to be maintained ("No Wavering", 1987).

But the changing of content of the curriculum as well as the speed of its introduction became an issue. The call to have students train exclusively for the job market was called the "myth of the skills crisis" in New Zealand (Snook, 1994). Like Shirley (1990) Snook declared that the Treasury was firmly committed to the doctrine of a skills crisis to justify the introduction of sweeping educational changes that ranged from the transfer of knowledge through the educational system to its method of delivery

to consumers. He claimed that the purpose of Treasury was to give legitimacy to the campaign of the business community to gain more control over educational practice, and to harness education more securely to business interests. Now a few years later the ideological campaign is far advanced, with curriculum changes in place, and a national qualifications framework set up to accredit progressive units of attainment that lead towards certain qualifications sanctioned by industry.

While much of the rhetoric surrounding the educational reforms has involved such concepts as partnership, collaboration, participation and professional leadership, the political forces behind the restructuring have been strongly identified with an ideology of hierarchical managerialism (Codd, 1993a). These forces have come indirectly from the large corporations, through the *Business Round Table* - a voluntary association of leading business magnates - and more directly from the control agencies of government, namely the Treasury and the State Services Commission (the central advisory body for controlling the work of all state sector employees).

The managerialist agenda first appeared in the 1984 Treasury brief to the incoming labour government with a description of what was called "the ideal management system" for organisations operating within a competitive market. This managerial ideology was to become a central feature of state sector restructuring, including the corporatisation of state departments and the establishment of what are now called *State Owned Enterprises*, and moves were made to impose these sorts of views when reforming the educational system (Codd, 1993a).

Educational Reforms

The reforms in educational administration in New Zealand were heralded by the *Report of the Taskforce to Review Education Administration* (Picot Report) released on 10 May 1988, with proposals for an extensive restructuring of the education system. The review was in response to calls from Treasury (1987) about the pressures from the business community on the state system, not for more and better education of the same kind as before, but for different types of education and, in some respects, a different kind of education structure. Given these pressures within a context of severe fiscal

constraints, the monetarist agenda adopted by Treasury called for policies that would effectively reduce educational expenditure and fragment existing structures and patterns of interest (Codd, 1993a).

Such a policy did indeed follow the publication of the Picot Report on the 7 August 1988, when after only 6-7 weeks given for submissions, a White Paper entitled *Tomorrow's Schools* was presented by the Minister of Education with an announcement that it would be implemented by 1 October 1988. The Minister declared that *Tomorrow's Schools* had been adopted as Government policy, and he referred to it specifically as an affirmation of the Picot proposals (1988, p.iv). However, *Tomorrow's Schools* omitted much of the Picot account of collaborative management and leadership (Codd, 1993a). Instead, all the clauses which defined the role of the school principals, emphasised their managerial functions as opposed to those of professional leadership and working in a collaborative relationship with staff (*Tomorrow's Schools*, 1988, pp.10-11). Its thrust was markedly towards an industrial model of management that was consistent with the economic rationalism of both Treasury and the State Services Commission. In particular, as board members, principals were to be the legal employers of staff, and as such to be involved in the appraisal, salary determinations and decisions relating to their conditions of employment. In particular, they were to be responsible for the "allocation of duties and detailed objectives amongst staff", and for the "development of performance objectives and measures to assess that performance" (*Tomorrow's Schools,* 1988, p.11).

Then in 1990, in a further move to impose the managerial ideology upon the education system the government appointed a Committee to Review the Education Reform Implementation Process. Its report, *Today's Schools* (1990), was produced after only token consultation with schools, and became known as the *Lough Report* (1990) after its chairperson. The report addressed several aspects of the administrative reforms, but again hardly mentioned education in the process. Instead, it focused almost exclusively on management, and it proposed that schools should implement administrative systems which incorporated "objective setting, planning, effective management, internal monitoring and reporting and external reporting" (1990, p.19). It reduced the quality of education to one of a number of *key performance indicators* which covered education, personnel, property, and financial management. It reduced the

concept of partnership that was once all important merely to constant and extensive reporting. It diminished staff commitment and collaboration to personnel management that included pay flexibility and incentive schemes. It sought to provide educational leadership by having a plan established for the school that was to be communicated to all staff and students (1990, p.23). Thus according to Codd (1993a), the Lough Report defined a culture of managerialism in which ends were separated from means, and where people were valued only for what they produced. It involved the importation to education of the instrumental values of economic rationalism, of the ideological influence of market liberalism, and the promise of greater efficiency.

But while the substance and the implementation of the reforms seem to have become a source of stress for principals and deputies, it is a paradox that the very policies introduced to overcome problems of inefficiency and inequity, seem to have done otherwise. They were legitimated by a rhetoric that proclaimed individual freedom, parent power, and consumer choice, but that itself was reported as causing considerable conflict and stress for the new managers of schools. In rhetorical terms the educational reforms were concerned with parent participation in education, with providing clear and specific objectives for all learning institutions, with promoting learner achievement, increasing the productivity of teachers, and with ensuring that learning institutions were responsive and flexible to changing demands.

In practical terms, as noted previously there has been a positive side, in sharpening administrative responsibilities and financial accountability, but in reality the reforms fostered a climate of harmful competition amongst schools (Adler & Raab, 1988; Codd, 1993b; Lauder, Hughes, Waslander, Thrupp, McGlinn, Newton & Dupuis, 1994). They promoted parental choice that exacerbated inequalities between communities, and promoted disparities in resources available for pupils with special needs and for teacher support. They transferred the economic ideology of the marketplace to the schools, in the hope that competition and individual choice might reign supreme, enhance the employability of pupils, and lead to greater efficiencies in the use of resources.

In retrospect it can be said that since 1984 the New Zealand school system has undergone the most radical restructuring in its entire history. The main thrust of the

restructuring has been to reduce the size of the central bureaucracy, to abolish regional education boards, and to convert each learning institution into a self managing unit with its own elected board of trustees. Thus the new educational structure entails a devolution of decision-making in a wide range of areas, including resource allocation, staff appointments, support services and staff development. Although boards of trustees are given some discretion in these areas, control is firmly vested in central state agencies, including the Ministry of Education, the Educational Review Office, and the New Zealand Qualifications Authority. This control is maintained through tightly circumscribed limits on local autonomy and contractual forms of accountability. The new structure effectively removes most of the institutional routes by which claims once could be made on central government for qualitative improvements in education. Teacher organisations, for example, can no longer press for smaller classes, more professional support, curriculum resources, or in service training. Instead the responsibility for these matters resides with the board of trustees in each institution, and it has considerable implications for the managers of the school - namely the principals and deputy principals.

Put simply, successive governments from both sides of the political spectrum, assumed a powerful profile in establishing educational expectations, goals, priorities, standards and frameworks for accountability, and these organisational changes brought profound changes to the roles of principal and deputy principals. Back in the 1970s, principals worked in a highly centralised system with a stable and centrally determined curriculum in which hierarchical patterns of authority predominated, and parents were excluded from the decision making process. They did not handle finance - i.e. monies were handled centrally, and none at school level had opportunities for influencing the way resources were allocated. In those circumstances there was little need for principals to plan ahead, and their tasks although varied and time-consuming, were relatively straight forward. They had little need for managerial training and professional development, and little was offered to them in either their initial or subsequent refresher courses. By contrast today, principals are obliged to work in a highly decentralised but paradoxically more sharply and centrally determined framework.

The contrast has had a great impact on principals and deputy principals, all of whom are trying to cope with the profound changes and who are not in a strong position

to respond to those who dismiss their views merely as myths about the crisis in education. Even the Hon David Lange has himself lamented the turn that the educational reforms his government introduced have taken when he said:

> It was always envisaged that the new system would be a mixture of central authority and the maximum devolution of local management. Fundamental to the model was the assertion by the centre of the requirements of curriculum, teaching standards, the assessment of the quality of education and the evaluation of the achievement of individual students. It was never expected that the central agencies would stand back and let all hell break loose ..... The partnership at the core of the system and the reciprocity explicit in the charter arrangements have been violated by the unilateral withdrawal of one of the parties. It is irresponsible. It is the cause of immense frustration. We have directionless principals, distraught boards and distressed parents.
>
> (Lange, 1994)

It was not surprising that in such a climate of ideological conflict, administrative change, and educational disruption, senior professional teachers were reporting distress, and it is to research on this subject that the chapter now turns.

Previous Research on the Topic of Head Teacher Stress

A recent literature search across several databases disclosed more than 500 articles on various aspects of occupational stress among teachers (see Kyriacou, 1987; Borg, 1990 for reviews). Most studies focused mainly on teachers in the classroom front-line and documented the *normal* stress in teaching across Britain, the United States, Canada, Finland, Israel, New Zealand and Australia (Hiebert & Farber, 1984, Milstein & Golaszweski, 1985; Dewe, 1986; Tunnecliffe, Leach & Tunnecliffe, 1986; Kyriacou, 1987; Kinnunen, 1988; Manthei & Solomon, 1988; Burke & Greenglass, 1989).

Fewer studies focused on stress among principals and deputy principals. Some past research has focused on the prevalence of self reported stress and job satisfaction

(Knutton & Mycroft, 1986; Savery & Detiuk, 1986; Downton, 1987), and revealed that principals and deputy principals found their role as administrators particularly stressful. Other researchers have investigated the sources of stress for principals and deputy principals (Galloway, Panckhurst, Boswell, Boswell & Green, 1987; Williamson & Campbell, 1987; Roberson & Matthews, 1988; Borg & Riding, 1993). Most of the sources of stress identified in these studies would figure among the major stressors identified by Cooper and Kelly (1993) and would include work overload, handling staff relationships, resources management, the local education authority and dealing with staff performance. Cooper and Kelly's (1993) survey of head teachers and principals of further education institutions was carried out during the passing of an education bill through parliament. While the respondents in that survey knew of the projected changes, such as the introduction of a national curriculum, the local management of schools, a national assessment programme and structural changes to local educational services, they had to anticipate the effect the changes would have on their work. Consequently the trends which emerged from the research reviewed tended to reflect the more traditional sources of stress that already prevailed. The author is unaware of any large scale study that has been conducted examining occupational stress and coping among principals and deputy principals at the time of major educational change.

Despite the volume of research highlighting the occurrence and consequences of stress amongst teachers there is relatively little empirical research relating to the coping with or managing of stress in the teaching profession. The few studies that have been conducted have evaluated a variety of interventions ranging from specific coping skills, (Guzicki, Coates & Goodwin, 1980) to stress inoculation, (Forman, 1982) behavioural consultation, (Tunnecliffe, Leach & Tunnecliffe, 1986) experiential learning sessions and co-worker support groups (Cecil & Forman, 1990). One of the few studies that examined the relationship between demands, perceived coping effectiveness and stress effects, (Hiebert & Mendaglio, 1988) revealed a positive relationship between demand and stress and a negative relationship between stress and perceived coping effectiveness suggesting that people who perceived themselves as coping effectively with the demands they were facing were not very stressed (Hiebert & Mendaglio, 1988). Roberson and Matthews (1988) found that principals had a narrow range of coping strategies and in a study of Swedish teachers Brenner, Sorbom and Wallius, (1985) found that a coping strategy labelled "direct action" appeared to mitigate work related stress. However as

a large number of coping strategies in the study had no effect on work related distress it was felt the results might reflect a type I error (Schonfeld, 1990).

The results in the studies found have not always been consistent. A variety of different methodologies have been employed, with a variety of different coping measures, often without psychometric evaluation of scale properties all of which make comparisons across studies difficult to make and conclusions difficult to draw. Hence the challenge for the present study is to investigate the psychological distress perceived by principals and deputy principals, to explore the sources of their distress, the way in which they coped and more specifically to discover the way in which they used their leisure outside work to cope with stress at work. But the next step is to explore the concept of stress in both its development and conceptual complexity and this will be taken up in the next chapter.

Chapter 3 - The Concept of Stress

> "Stress like relativity, is a scientific concept which has suffered from the mixed blessing of being too well known and too little understood".
>
> (Selye, 1980, p.7)

Recent reviews of occupational stress research consistently identify the issues that need to be addressed in stress research. They include:

- the need to clarify the meaning of stress, since how it is defined influences how it is researched and thus how results are explained;
- the need to consider the nature and relevance of work stressors;
- the need to explicitly recognise the role of coping and the development of measures that capture what individuals think and do;
- the need to consider the major methodologies used for investigating work stress (Bhagat & Beehr, 1985; Glowinkowski & Cooper, 1985; Brief & Atieh, 1987, Dewe, 1989; Newton, 1989).

These themes are used as the context for considering a number of issues in this chapter and the next. Work stressor measurement is not without its difficulties, and Dewe (1992) suggests that the issue is best understood when set alongside two other issues i.e. first, the confusion (Newton, 1989) and apparent lack of agreement (Vingerhoets & Marcelisson, 1988) surrounding the definition of stress, and second, the constraint on empirical development imposed by what many have described as a "ritualised" reliance on quantitative methodology (Van Maanen, 1979; Payne, Jick & Burke, 1982; Kasl, 1987).

It is appropriate now to discuss the development of stress historically and to explore the strengths and weaknesses of the various definitions offered. In short, the definitions will be seen to emphasise either the stimulus, or the response, or the stimulus-response interaction. The first directs attention towards external events, the second to internal reactions, and the third to the interaction between the two (Duckworth, 1986). But a fourth definition has emerged which seems to be closer to the reality of the phenomenon, as the outline will show.

The History of Stress

The word stress has its origins in the Latin words, *strictest,* meaning tight or narrow, and *stringere,* the verb meaning to tighten (Paterson & Neufeld, 1991). These root words reflect the internal feelings of tightness and constriction of the muscles and breathing that many people under stress report. However even in its early usage the term more frequently referred to difficult environmental situations that individuals faced rather than to the individual reactions per se (Cox, 1978). Today the different emphases are reflected in 10 columns of small print of the Oxford English Dictionary (1989, Vol XVI, p.885-888) which cover the various definitions of the term, and they range from the imposition of pressure, to the hardship which might result.

The term seems first to have been applied in engineering in the early 1800s. In this context, *stress* was construed as the load or force acting upon an object, divided by the area over which it acted (expressed for example in pounds per square inch), and *strain* to the effects of the force on the object, including weakening and changes in shape. In the late nineteenth century, the word stress was occasionally used in a similar manner in medicine to denote the entire range of pressures and challenges to health (Paterson & Neufeld, 1991). However the origins of the psychological construction which is the focus of the present study are difficult to trace further back than the middle of the nineteenth century (Ivancevich & Matteson, 1980) to the time when the French physiologist Claude Bernard suggested that external changes in the environment could disrupt the organism.

In the 1920s, the American physiologist Walter Cannon introduced the term *homeostasis* to designate the maintenance of the internal milieu (Cannon, 1922). While his research focus was on specific reactions that are critical in maintaining internal balance during emergencies such as nervous irritation, he was clearly dealing with the concept of stress as it has evolved today (Ivancevich & Matteson, 1980). In his later work he adopted the term stress and spoke of *critical stress levels-* which he defined as those which could bring about a collapse of homeostatic mechanisms, and he even used the term in relation to social and industrial organisation (Cannon, 1935;1939). About the same time the clinician Wolff (1953) was influential in shaping the course of stress research particularly in relation to the effect of *life stress* on disease - and he defined

stress as a state which resulted from the interaction of the organism with noxious stimuli or circumstances.

In the 1930s, the endocrinologist Hans Selye began his notable studies of stress that provided much of the impetus for current psychological investigation and led others to regard him as the "father of stress" (Rice, 1987). He was among the first to notice that many medical conditions had common elements. Whereas previously the primary aim of diagnosis had been to identify unique symptoms and their related clusters or syndromes, Selye turned in the opposite direction and began to study the commonalities of illness. That is, while accepting that each disorder had unique symptoms, he postulated that all disorders had symptoms in common. Then finding confirmatory evidence, he defined stress as "the non-specific (that is, common) result of any demand upon the body, be the effect mental or somatic" (Selye, 1982, p.7). His response-based definition was the natural outcome of both his clinical work and his animal experimentation, and he was therefore consistent in giving the name stress to the unified response rather than to the multifarious stimuli that might have produced it. Later, he shifted his definition by suggesting that these stimuli, or evocative agents be referred to as stressors, and thus he set the stage for much of the current terminology.

Whereas virtually all of the original stress researchers were medical doctors who focused on physical stimuli and their physiological consequences (Ivancevich & Matteson, 1980), in the past two to three decades the research has broadened and has been influenced largely by behavioural scientists. Consequently a shift of orientation has occurred in research away from physical stressors such as mechanical trauma (i.e. injuries), toward psychological stressors such as role conflict and the impact of psycho-social influences upon the organism. But as in medicine, it was observed repeatedly that responses to any given psychosocial stimulus may vary widely from one individual to another, or from one time to another in the same individual (Mason, 1975). It has been found further that such responses become increasingly predictable only when other intervening factors, such as previous experiential history, coping style, or the idiosyncratic factors in threat perception, are taken into consideration for each individual subject (Lazarus, 1966; Payne, 1988; Cox & Fergusson, 1991). This recognition of the complexity of the interacting factors which determine behavioural and physiological responses to psychosocial stimuli, led subsequent stress researchers to adopt a broad,

many-sided perspective, and to avoid simplistic, unilateral definitions that were based either on input or output parameters alone (cf. Ursin & Olff, 1993). But the domination of behavioural rather than medical researchers increased the controversy as to the nature of stress and how it should be defined, and it is to give closer attention to these approaches that this chapter now turns.

Definitions of Stress

It is clear that theory and research on stress are plagued by a lack of agreement regarding basic terminology - particularly, as has already been said, regarding the definition of stress itself (Cox, Kuk, & Leiter, 1993). Quite early Mandler (1962) remarked that the word was in common usage, and as such was among those like emotion, morality or consciousness which most people found difficulty in defining despite an intuitive sense that they understood them. However, although stress as a concept is now becoming more accepted as relational in nature, involving some sort of transaction between the individual and the environment, it continues to be defined in several fundamentally different ways - each of which have implications for the way it is measured and the way in which results are explained. For example, the recent exchanges between Lazarus (1990) and some of the commentators (e.g. Ben-Porath & Tellegen, 1990; Breznitz, 1990; Brown, 1990; Costa & McCrae, 1990; Krohne, 1990; Moos & Swindle, 1990) clearly demonstrate the many unresolved issues as to whether stress is to be construed as either a stimulus, a response, or some complex transactional term or process. They also raise questions as to whether stress is necessarily a subjective or an objective phenomenon, and whether there should be specific criteria for defining it either as a stimulus, as a response, as an interaction.

These issues will shortly be addressed in a way that shows the development of the different approaches to the definition and measurement of stress. It will lead to the generally accepted view that stress involves a transaction between individuals and their environment, in which they appraise the situation as exceeding their resources and endangering their well-being.

Principal Approaches to the Definitions of Stress

While stress has been conceptualised in several fundamentally different ways (Cooper, 1983; Duckworth, 1986) most definitions fall into one of three categories (Cox & Fergusson, 1991). The first category, the *response-based* or medico-physiological approach treats stress as the dependent variable for study describing it in terms of the response of an individual to challenging or disturbing demands or events (McGrath, 1970; Cox, 1978). Clearly the level of analysis of this approach has been concerned primarily with disturbances of biological systems (e.g. Canon, 1929).

The second category is the *stimulus-based* or engineering approach (e.g. Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). This usually treats stress as an independent variable for study, and describes it in terms of the stimulus characteristics of an event or situation outside individuals that places demands on them. Stress so defined, produces a strain reaction (Cox & Ferguson, 1991). This approach has been applied mainly by ergonomists and at the sociological level of analysis, with sociologists turning their attention to social structure, in which groups rather than individuals are the focus of concern, (Dodge & Martin, 1970) as the predominant source of stress. Of particular importance to the present study, occupational stress is treated as a property of the work environment which lends itself to objective measurement (Cox, 1993).

The third category clearly reflects a psychological orientation or level of analysis, with most models categorised as *interactional* in nature, emphasising a stimulus-response combination between persons and their environment (French, Rodgers & Cobb, 1974; McGrath, 1976, or as *transactional* in nature, where the emphasis is on the processes of appraisal and coping that operate between the person and the environment (Cox, 1978; Lazarus & Launier, 1978). This transactional approach specifies the mediating psychological processes that determine when stressors from any combination of internal or external sources result in stress reactions on the part of a given individual (Lazarus, 1966, p.424): it conceptualises work stress in terms of the dynamic interaction between individuals and their work environment.

It is necessary now to go further into some detail with each definition, to understand how the field has developed.

The Response Based Definition.

According to McGrath (1970) the most basic element of a stress definition involves the specification of a class or classes of response which will be taken as evidence that the organism is or recently has been under stress. Therefore, if a response definition is to be used to operationalise stress, the psychological, and physiological response outcomes such as anxiety, anger, headaches, blood pressure, and cortisol levels might be used as measures.

The physiological approach to the definition and study of stress received its initial impetus from the work of Selye (1950, 1956). His definition that stress, was the non-specific response of the body to any demand made upon it gave much of the early momentum to stress research. He worked primarily with rats, and observed a pattern of physiological responses linked with stress to which he gave the name General Adaptation Syndrome (GAS). He called the syndrome *general* to describe the consequence of stressors on several areas of the body, and he used the word *adaptation* because the stressors aroused defences which he thought were designed to help the body either to adjust or to deal with them. He used the word *syndrome* to indicate that certain reactions tended to occur more or less together and yet were also somewhat interdependent.

Selye also delineated three distinct phases of the GAS, as *alarm, resistance,* and *exhaustion.* During the first phase, the *alarm* reaction, the body shows changes characteristic of initial exposure to a stressor, and at the same time reduces its level of response. In the second phase, that of *resistance,* certain adaptive responses take over, but should the appropriate reduction of alarm not occur, the third and final stage of *exhaustion* will arise. As the long-term exposure to the stressor depletes the organism's reserves of energy, the so-called diseases of adaptation may occur, involving either tissue damage, or cardiovascular, gustatory and hormonal dysfunction, and ultimately the organism collapses and dies.

However, as influential as Selye's theory was as an explanatory model to account for the range of manifestations of stress, it has certain shortcomings and might not now be quite so comprehensive as was at first thought. For example Lacey (1967) argued that

the low correlations observed among different physiological components of the stress response were not consistent with the notion of an identifiable response syndrome. Mason (1971) showed that some noxious physical conditions such as exercise, fasting, and high body temperature did not produce the general adaptation syndrome or stress response in its entirety. Fisher (1986) reported difficulty in distinguishing between those physiological changes which represented stress and those which did not, particularly as the former may be dissociated in time from a given stressor.

As early as 1953, Grinker and his associates, with their experience of combat stress veterans, criticised existing response models in medicine for their detachment from environmental factors. Accordingly they attempted to construct an alternative transactional model based on the assumption "that the human organism is part of and in equilibrium with its environment, that its psychological processes assist in maintaining an internal equilibrium and that the psychological functioning of the organism is sensitive to both internal and external conditions" (Grinker, 1953, p.152). Inevitably the lack of a straightforward correlation between the various responses across individuals or situations, prompted studies of the stimuli which were associated with its occurrence. Thus, the focus shifted to exploring those situations or aspects of a situation (i.e. stimulus) that might cause stress.

The Stimulus Based Definition.

As its name implies, the stimulus-based definition of stress views stress as a stimulus, i.e. an event or an object that impinges on the individual, and it adopts the engineering approach by treating stress as a stimulus characteristic of the environment. Cox (1978) described this engineering analogy as comparable to *Hooke's Law of Elasticity*, and suggested that, just as physical objects have a limit to the stress they can carry, so do human beings. According to that Law, if the stress placed on an object falls within the limits of elasticity of the material of which it is made, the material will remain unaffected when the stress is removed. Likewise, if the material were a human being, and the stress were to fall within the individual's coping limits, no damage would result when the stress were removed. Therefore, a stimulus definition would describe stress as the force or stimulus acting upon the individual that results in a response of strain, where strain is pressure or, in a physical sense, deformation

(Ivancevich & Matteson, 1980).

As previously suggested, this stimulus approach was adopted by sociologists who viewed stress not from the point of view of the individuals but in terms of the social context in which it occurs (Reeder, Shrama & Dirkin 1973, p.574), Hence they came to focus on the disruptive social and cultural processes that have some relationship to problems of health and disease (Mechanic, 1978). Other researchers used alternative sociological concepts such as social status, regulatory inconsistency, alienation, anomie, relative deprivation, cultural change, and sociocultural mobility as causes of stress (Graham & Reeder, 1972, p.90).

According to Starr (1977) all such sociological stimulus based definitions of stress are concerned with the identification of specific elements of a stressful situation which exclude some individuals from the prevailing pattern of norms and values. From this it follows that if a stimulus definition were chosen from a sociological perspective to operationalise work stress, then variables such as quantitative overload and role conflict might be useful for measuring it.

However the sociological approach is not without criticism. For example Totman (1979) claims that many sociological theories are more descriptive than explanatory, and in particular that they fail to consider the way in which social experiences come to have an impact on the individual. This criticism echoes the earlier complaint of Lazarus (1966) that sociological theories take no account of how the individual perceives the situation, and they ignore the important processes which might mediate between initial social strain and the subsequent stress reactions.

As was to be expected, the stimulus based model came to have a psychological perspective, more particularly from researchers with a bias in behavioural psychology. Here the focus is either on the stimulus - situational characteristics that are new, intense, rapidly changing, sudden, or unexpected, rather than familiar, stable, structural and enduring, or alternatively on stimulus deficit, the absence of expected stimulation, and to settings that produce both fatigue and boredom. There are also the stimulus factors of cognitive misperception, susceptibility to hallucination, ambiguity and conflict to be considered, all of which have at some time actually been used as an operational means

for identifying stress (Appley & Trumbull, 1967)

However, despite the obvious appeal of simplicity, the stimulus model is also not without limitations. One is that stimulus/situational characteristics alone may be quite insufficient for predicting an individual's response. Thus two individuals subjected to the same stimulus may show quite different levels of strain, or may show strain at different times. Another is that in practice the response must first be recognised before the search can begin for the stimulus which preceded it, and the stimulus definition makes no mention of any intervening process that might exist (Ivancevich & Matteson, 1980). Finally as Cox (1978) points out, the stimulus definition assumes that an undemanding (stress-free) situation is the ideal, but it ignores the stressful features of undemanding situations. Why, is it he asks, that most individuals find forced periods of inactivity or boredom so uncomfortable?

In short, and despite a popular appeal, the stimulus-based model of stress fails to take account of individual differences, and it ignores the perceptual cognitive processes which underpin such differences (Cox & Fergusson, 1991).

Shortcomings of Response and Stimulus Approaches

It can be seen that both the physiological and engineering approaches of stress are set conceptually within a relatively simple stimulus - response paradigm, and that they largely ignore individual differences in the psychological nature and the perceptual and cognitive processes which might underpin them (Cox, 1990; Sutherland & Cooper, 1990, cited in Cox, 1993).

The physiological and engineering approaches then have shortcomings, both empirically and conceptually, and they do not adequately account for the existing data. With the physiological model, some noxious physical stimuli do not produce the stress response in its entirety, and the stimulus which produces a stress response in one person does not for someone else. Similarly in relation to the engineering model any situation may or may not be stressful, depending on the characteristics of the individual and the personal meaning of a given situation. Thus Scott and Howard (1970) wrote that certain stimuli, by virtue of their unique meaning to particular individuals, may prove problems

only to them; other stimuli, by virtue of their commonly shared meaning, are likely to prove problems to a larger number of persons. Their statement implied the mediation of strong cognitive as well as situational (context) factors in the overall stress process.

Moss (1973) suggested that the assignment of stress either to a stimulus or to a response model, deflected attention away from the stress process itself, and Mechanic (1976) argued that it is difficult to predict the effect or the process if only one dimension of the problem is known. In short, definitions of stress as either a stimulus or a response largely ignore the interactions between persons and their various environments, and with particular regard to the present study they would ignore the psychological and organisational contexts of work stress. Therefore it is to this third approach to defining stress that attention must now turn, because its development has been to some extent, an attempt to overcome the limitations of the earlier approaches.

Psychological Definitions

The third approach conceptualises stress in terms of the dynamic interaction between the person and their environment (which for this study includes the non physical aspects of the work environment). This approach has been termed psychological because it takes into account the cognitive processes and emotional reactions which underpin those interactions. Contemporary stress theory provides two variants - i.e. the interactional and the transactional.

The Definition of Stress as an Interaction.

McGrath, (1976), construed stress as an interaction between the individual and the environment, where some environmental stimulus presented the individual with either a demand, a constraint or an opportunity for behaviour. However, his model still retained the mechanistic nature of each of the two contributing approaches, and continued to regard the person as essentially passive in the process. It still excluded the intervening psychological processes, and consequently still dealt inadequately with individual differences that affect any outcome.

Here it might be appropriate to indicate that the early stress researchers focused

on the simple relationship between stressful life events and various physical and psychiatric health outcomes. In doing so according to Martin, (1991) they adopted two general strategies: one was to obtain data from surveys of normal populations and to correlate scores obtained on life events measures with indices of health impairment, either by obtaining both measures retrospectively (e.g., Rahe, 1972; Holmes & Masuda, 1974), or using a prospective design with health outcome data obtained some time after the collection of life events data (e.g., Rubin, Gunderson & Arthur, 1971). Other researchers included massive and sudden disruptive events such as tornadoes, earthquakes or fires (Birnbaum, Coplan & Scharff, 1976) as well as more chronic or extenuating circumstances such as imprisonment, military service (Bourne, 1969), within this framework. The second strategy, was to use the retrospective case-control method and to focus on a specific target disorder such as multiple sclerosis (Antonovsky & Katz, 1967), or myocardial infarction (Theorell & Rahe, 1971).

In its turn, the approach of simply correlating the stimulus and response was criticised on both conceptual and methodological grounds. In particular Rabkin and Struening (1976) pointed out that although the correlations that had been obtained both retrospectively and prospectively between life events and illness were reliable, they were generally quite weak, with values ranging from .20 to .30. They therefore suggested that predictive accuracy might be improved by examining variables that moderated or mediated the relationship between stress and illness. Others took up the challenge, and subsequently the consideration of moderator variables became so popular as to represent something almost of a *paradigm shift*. Among them were the researchers who began to examine a number of potential moderating - stress variables such as social support and personality. One group addressed the moderating effect of social support (Dean & Lin, 1977; Liem & Leim, 1979; Haggerty, 1980; Thoits, 1982; Turner, 1983; Wallston, Alagna, De Vellis & De Vellis, 1983). Another group did the same with personality variables such as locus of control and perceived control (Johnson & Sarason, 1978; Lefcourt, Miller, Ware & Sherk, 1981) sensation seeking (Smith, Johnson & Sarason, 1978) and sense of humour (Martin & Lefcourt, 1983). But the outcome was so unpromising that Lazarus and Folkman (1984) went so far as to say that research into personality measures as moderators should be abandoned.

However some observations of measurement issues associated with moderator

variables should be noted. Firstly, researchers need to ensure that they are not adopting a "shotgun" approach by targeting personality variables for which there is no theoretical basis for assuming stress-moderating effects (Martin, 1991). Secondly they need to select well-validated personality measures which are both specific to their preferred conceptual definitions, and are not confounded with the independent and dependent factors under investigation. Thirdly, researchers need to give more attention to the processes involved in person-environment transactions, and not only provide inferred information regarding potential intervention strategies. Finally, Lazarus and Launier (1978) commented that the stimulus-response based interactive research usually followed a strictly deterministic path rather than one which was dynamic and process-oriented. As such it dealt with static or structural variables, and adopted correspondingly simple measures of the presumed stable properties of personality and the environment. If subsequently a statistical interaction happened to be found, it was inferred that the result was attributable to a transactional process. In other words, although researchers often defined stress as a transaction between the individual and the environment, empirically they continued to research it in an interactional way. Thus it is to the transactional definitions that this chapter now turns.

Transactional Definitions of Stress.

Transactional approaches represent a development of the interactional approaches and are largely consistent with them. As mentioned above, while interactional approaches focus on the structural features of the person's interaction with their environment, transactional approaches are more concerned with the psychological mechanisms of cognitive appraisal and coping that underpin interactions.

What distinguishes the transactional approach from the others is its emphasis on the process of appraisal, on the meaning and the significance that individuals attribute to a particular social situation (primary appraisal) and on the availability of coping resources (secondary appraisal). It makes explicit its treatment of stress as a psychological state, i.e. the internal representation of a particular and problematic transaction between the person and the environment involving aspects of both cognition and emotion. But again it has to be said that this state is effectively an instant "snapshot" of a wider and dynamic "stress process" which involves an ongoing sequence

of person-environment transactions (Cox 1978, 1985, 1990; Lazarus & Folkman, 1984).

From a transactional perspective the experience of stress is defined first by the realisation of individuals that something is at stake, and second by the demands of the situation that threaten their well-being and exceed their ability to cope. This approach according to Cox (1993) allows a clear distinction to be made between the effects of lack of ability or performance and those of stress. It is the realisation by individuals that their coping resources are exceeded by the demands of a task and that their experience creates a *stress* scenario. Stress is therefore not just a factor of the individual or the environment, but it is embedded in an on-going process which involves individuals transacting with their environment, making appraisals of that interaction, and attempting to cope, and at times failing to cope with the problems that arise. Thus according to the transactional definitions stress is a dynamic cognitive state, (Burke & Weir, 1980; Holroyd & Lazarus, 1982; Schuler, 1984; Newton, 1989). It is a disruption in *homeostasis* or *imbalance* which gives rise to a requirement for resolution of that imbalance or restoration of homeostasis (Dewe, Cox & Fergusson, 1993).

To reiterate, the psychological transactional approach emphasises the process of adjustment and coping as central elements in stress research. It suggests that what is important is not just the various elements of the process but the adaptive process itself. Previous definitions had tended either to emphasise only one aspect of that process i.e. the stimulus or the response, or to focus on the interaction of the two. These approaches therefore failed to recognise the potential of the appraisal process, and to make clear that it is this process, by which individuals both give meaning to events (primary appraisal), and evaluate their own coping strategies, (secondary appraisal) that binds together the individual and the environment, requiring stress to be redefined in terms that capture this transactional perspective.

Transaction implies that stress is neither in the person nor in the environment but in the relationship between the two (Lazarus and Launier, 1978). Stress arises when the demands of a particular transaction are appraised by the individual as about to tax or exceed the resources available and thereby to pose a threat to well-being (Lazarus 1991). The appraisal process is the mechanism which brings together the elements of any stressful encounter - the person and the environment, and it is this evaluation that

provides a direction for a better understanding and definition of stress and the stress process than was provided by the more traditional interactional approaches (Dewe 1992).

Work Stress

The impact of work and the work environment on individual well-being is widely documented in the psychological literature (e.g. Adelmann, 1987; Warr, 1984, 1987). Major reviews have highlighted the relationships between organisational characteristics and such outcomes as job satisfaction (Locke, 1976), job stress (Cooper & Marshall, 1980; Parker & De Cotiis, 1983; Sutherland & Cooper, 1988), physical and mental ill health (Cooper & Marshall, 1976; House, 1980) as well as positive approaches to mental health (Warr, 1987). An equally extensive body of research has found work stress to be involved with psychosomatic outcomes such as heart disease, high blood pressure and related psychiatric disorders (Cooper & Marshall, 1976; Cox & McKay, 1982; Kasl, 1983; Fletcher, 1988). From all of these studies the overriding conclusion was that organisational characteristics influence both physical and psychological well-being of workers.

Other studies have linked work stress to impaired performance in the workplace, general health problems, absenteeism, turnover, industrial accidents, the use of drugs and alcohol on the job, counterproductive behaviours such as spreading rumours, poor quality control, stealing, damaging property and equipment, and various kinds of white collar crimes (Beehr & Newman, 1978; Holt, 1982; Steffy & Jones, 1988). Moreover the phenomenon is rapidly emerging as an issue for workers compensation (Ivancevich, Matteson & Richards, 1985). In the United States some employees have sued employers for stress-induced psychological disorders, and since 1980 such claims in California are said to have increased 47 times faster than overall claims for other disabling injuries.

Aside from litigation and its effects on individuals, work-related stress is known to damage the effectiveness and efficiency of organisations, and it represents a substantial and rising cost in terms of lost productivity and the loss of valued employees. In the United States in the 1970s, stress was estimated to cost approximately $76 to $90 billion annually (Ivancevich & Matteson, 1980), and more recently Niehouse (1987)

reported that its annual cost to business in that country has risen to $100 billion - excluding the cost of poor job performance and the cost of replacing employees who died, who are ill or who quit (Hendrix, Steel, Leap & Summers, 1991). In Britain, (Nicholson-Lord, 1991), it is estimated that work stress alone could cost up to 10 per cent of gross national product - i.e. be equivalent to £40 billion (NZ $120 billion) a year. In New Zealand no one keeps any figures and most research carried out is on what is called "episodic" stress, the stress associated with a traumatic incident such as a plane crash (Sullivan, 1995). New Zealand was included in a 16 country survey of occupational stress which found office workers in New Zealand were among the most stressed in the world. Sixty five percent cited work as their current major cause of stress (Sullivan, 1995).

In New Zealand, unlike Sweden, there is no legislation that gives directions about stress control and the quality of working life, although the omission might ultimately be rectified by the effects of the *Health and Safety in Employment Act* (1992) which regards stress as a potential hazard for which every employer must try either to prevent or to reduce, or to minimise its effects (Occupational Safety and Health Service, 1992).

Stress is clearly a relevant issue in all types of jobs and occupations and the extent of the work stress problem may be greater than is frequently imagined. It has consequences for organisations at all levels, and detracts from the social and psychological well-being of employees. It follows that if people are constantly exposed to various kinds of stressors in their daily lives, then their responses to these stressors will determine the quality of their lives and their performance in various situations. The more knowledge that can be obtained on the causes and consequences of work stress and the strategies for coping the greater the opportunities for more effective stress management interventions at both the organisational and individual level.

However, before giving detailed consideration of models of work-stress, it is important to remind ourselves that work does not have only negative effects on health. It also has positive benefits, promoting psychological well-being (Baruch & Barnett, 1987) and physical health (Repetti, Matthews, & Waldon, 1989).

Work Related Models of Stress

Work stress research has now been described as having come of age (Newton, 1989). Although pioneering researchers such as French, Kahn and Mann (1962), McLean (1966), and French and Caplan (1972), began their programmes more than 30 years ago, it is only within the last 10-15 years that strong research groups have emerged (Cooper & Payne, 1978, 1980; Ivancevich & Matteson, 1980; Cox & McKay, 1981; Cooper, 1983; Quick & Quick, 1984; Beehr & Bhagat, 1985). Newman and Beehr (1979) noted that occupational stress first appeared as a key word in *Psychological Abstracts* in 1973, indicating that there was not enough published material prior to this time to warrant the heading, but within a decade it had become a central topic in the field of organisational behaviour (Staw, 1984). Today research in occupational stress is flourishing in many countries around the world, as seen from the contents of such publications as *Journal of Human Stress, Journal of Occupational Behaviour and Work & Stress.*

The traditional approach to work stress, bearing in mind the foregoing discussion of stress definitions, has been based on the commonly held view that job stress necessarily increases with job demands. It simply describes "all structurally determined job characteristics as job demands regardless of their drastically different effects on psychological functioning" (Karasek, 1979, p286). But contemporary definitions discussed earlier, have resulted in a move toward incorporating the appraisal process through the concept of homeostasis or equilibrium. This development came in two stages, with the first being the acceptance of the idea that work stress results from the interaction between individuals and their environment. The second stage was the extension of this model to incorporate the transactional process by which individuals give meaning to events and attempt to cope with the situation and the consequences.

Person - Environment Fit Model.

Following the historical definitions of stress previously outlined, the person-environment (P-E) fit approach to stress has been the most widely cited among organisational stress researchers (Eulberg, Weekly & Bhagat, 1988, Edwards & Cooper, 1990), and it forms the core of many current theories of organisational stress, such as

those presented by French, Rogers and Cobb (1974); McGrath (1976); Karasek (1979); Schuler (1980); French, Caplan and van Harrison (1982). This model proposes that a lack of fit between the characteristics of the person (e.g. abilities, values) and the environment (e.g. demands, supplies) can lead to unmet individual needs or unmet job demands which can lead to deleterious psychological, physiological and behavioural outcomes, which eventually result in increased morbidity and mortality.

French, Caplan and van Harrison (1982) provide the most comprehensive treatment of the P-E fit model, with three main features, a) the degree to which an employee's attitude and abilities meet the demands of the job, b) the extent to which the job environment meets the worker's needs, and c) the extent to which the individuals are permitted and encouraged to use their knowledge and skills in the job setting. According to Cox (1993), two clear distinctions are made in this theory. The first is between objective reality and subjective perceptions, and the second between environmental variables (E) and person variables (P). The main point is that *subjective* P-E misfit - i.e. how workers see their situation - will produce negative psychological, physiological and behavioural outcomes, collectively labelled *strain* (Edwards & Cooper, 1990).

Yet, as Edwards and Cooper (1990) have pointed out, other approaches implicitly incorporate concepts of P-E fit. For example, the correspondence between environmental demands and personal skills and abilities, is apparent in McGrath's (1976) model of stress, which includes a perceived environmental demand which threatens to exceed the person's capabilities and resources. Similarly Karasek's (1979) "job demands" model indicates that strain occurs when high job demands are combined with low decision latitude, i.e. there is a perceived inability to influence tasks and procedures at work. Cummings and Cooper (1979) produced a cybernetic framework to show that a disparity between an individual's preferred and actual state would result in strain, while Schuler (1980) conceptualised stress as a dynamic condition that potentially prevents individuals from being, having, or doing what they desire.

However, while the P-E fit model has popular appeal - capturing the common-sense notion that one person's pleasure is another person's pain, having a traditional basis in psychology as far back as Lewin (1938) and Murray (1938), and being an

alternative to the stimulus and response approaches, it is far from satisfactory. Not the least of its difficulties is that it has many versions, with the distinction between them being far from clear. There is also a confusion of different functional forms of fit, a poor measurement of components, an inappropriate analysis of their effects, and only a moderate correlation between misfit and various stress outcomes (Cooper, 1983).

General Work Stress Model

The general work stress model (Katz & Kahn, 1978, House, 1981; Tetrick & La Rocco, 1987) is an alternative that is widely used. It postulates that objective work conditions can lead to perceptions of stress which in turn may lead to a variety of job-related strains such as dissatisfaction, boredom and turnover, and to individual strains such as anxiety, depression and physical illness. In addition, according to Tetrick and La Rocco (1987) it hypothesises that internal characteristics (i.e. personal characteristics) and external conditions (i.e. situational characteristics) can not only have direct effects, but also interactive or moderating effects.

According to Tetrick and La Rocco (1987) this model has led to three types of research applications. First it has clarified the relationship between certain job conditions and adverse outcomes such as role ambiguity and role conflict leading to job dissatisfaction. Second it has demonstrated the direct effects on stress and strain of factors external to the workplace (e.g. social support lessens role conflict and depression) or internal to the individual (e.g. Type A behaviour pattern increases role conflict and anxiety levels). Third it has led to the demonstration of the moderating effect of different individual and situational variables. For example, social support may reduce the relationship between role conflict and depression.

However, while the first line of research has established a relationship between work role stressors and affective reactions, attempts to confirm the moderating effects of such variables as social support have met with only limited success. Cohen and Wills (1985) suggested that this limited success may be in part due to the lack of relevance to the work environment of some of the measures of social support, and despite the contradictory findings as far as moderating variables are concerned, Dewe (1991b), suggests that a focus on moderator research is preferable to that of simply focusing on

role ambiguity or role conflict. He went on to say that the three main issues there concerned 1) the meaning given to, and the way work stress is defined, 2) the adequacy and relevance of current approaches to work stressor measurement and 3) the role of coping in work stress research.

Transactional Models

Lazarus (1991) is foremost among the critics of the person-environment fit model and other interaction theories of stress discussed. While conceding that they represent an important advance, he points to their focus on stable relationships between the person and the workplace, rather than on a flux or process in which stress changes over time and varies with specific work related contexts. Also he argues that it is too simplistic to carry over from social psychology and sociology the idea that some environments generally result in dysfunctioning. He asserts that psychological stress and its damaging effects are quite an individual matter, and suggests that occupational stress research would benefit were it viewed within the context of a transaction.

Thus developed transactional models, which owe much to the work of Lazarus in the United States (for example, 1966, 1976), and to Cox and McKay in the United Kingdom (for example Cox, 1978; Cox & McKay, 1981; Cox, 1990). They focus on the cognitive processes and emotional reactions underpinning individuals' interactions with their environment rather than on the structural features of the person's interaction with their work environment.

Influenced by the work of Lazarus and his colleagues and also by McGrath (1970), Cox and McKay (1981) attempted to set appraisal mechanisms (outlined earlier, pages, 33-35) in the wider context of the stress process and with particular reference to occupational health. Originally Cox's transactional model of occupational stress was set within *General Systems Theory*, and was described in five stages (Cox, 1978). The first stage represents the sources of demand faced by the individual and is part of their environment. The second stage is the perception of these demands in relation to their ability to cope - i.e. effectively primary appraisal. Consistent with Lazarus and Folkman (Lazarus, 1966, Folkman and Lazarus, 1986) and French, Caplan and van Harrison (1982), stress was described as the psychological state which arose when there was a

personally significant imbalance or lack of fit between individuals' perceptions of the demands on them and their ability to cope with these demands. The third stage is represented by the psychological and physiological changes associated with the recognition of such a stress state and with methods of coping. The fourth stage is concerned with the consequences of coping. The fifth stage is the general feedback (and feed forward) which occurs in relation to all other stages of the model.

According to Cox (1993) the experience of stress through work is associated with the exposure to particular conditions of work, both physical and psychosocial, and of the workers' realisation that they are having difficulty in coping with aspects of their work situation. He suggests that stress is usually experienced through attempts to deal with the underlying problem (coping) and through changes in cognition, behaviour and physiological function, and that although probably adaptive in the short term, in the long term, such changes may threaten health.

A number of other, similar stress models have been developed by scholars working primarily on organisational issues that incorporate the transactional elements (see Marshall & Cooper, 1979; Ivancevich & Matteson, 1980; Jick & Payne, 1980; Levi, 1981; Payne, Jick & Burke, 1982, Beehr & Franz, 1987, Frankenhauser et al., 1989). Despite differences and not including all the concepts and relationships that interest organisational psychologists as a whole, the models all reflect the conceptualisation of stress as involving a process that includes the same basic sequence. This includes, (a) the imposition of a damaging or taxing stimulus, (b) a set of psychological responses triggered by that stimulus and (c) a more or less complex array of consequences in which the well-being of the individual is involved (Kahn & Byosiere, 1991).

However, while work-stress researchers have, by and large, accepted the transactional perspective at the conceptual level, at times elaborately modifying or extending it (Shirom, 1988), at the empirical level, work-related stress research still tends to emphasise the different components of the transaction rather than the dynamic transaction itself (Dewe, 1991a). Dewe (1991b) claims that progress towards a better understanding of the stressor-strain relationship can only be achieved by altering the way in which work stress is investigated. He suggests one strategy is to consider what it is we are measuring when we measure work stressors and what can be learned by

considering these measurement issues within a transactional context. Consequently this chapter concludes with an examination of two issues surrounding the measurement of work stressors before going on in the next chapter to consider the definition and measurement of coping and the potential role of leisure as a coping variable.

The Measurement of Work Stressors

Since the work of Kahn and his colleagues (1964), measures of role conflict, ambiguity and overload have been used to demonstrate that certain job conditions lead to adverse outcomes. Various authors have provided different categories of work stressors. For example Cooper and Marshall (1976) offered five clusters of work stressors: those intrinsic to the job, and those resulting from one's role in the organisation, career development, relationships with others and organisational structure and climate. Quick and Quick (1984) proposed four clusters of stressors: task demands, role demands, physical demands and interpersonal demands. Ivancevich and Matteson (1980) divided stressors into four categories: physical environment, individual level, group level and organisational level. Schuler (1982) identified seven categories of work stressors in organisations: job qualities, relationships, organisational structure, physical qualities, career development, change, and role in the organisation. Some authors also included extra-organisational stressors (e.g. family) as well in their models (Cooper & Marshall, 1976; Ivancevich & Matteson, 1980).

Obviously there is considerable overlap among the variables identified, both in terms of the categories themselves, and in the stressors included within each category. Other issues such as conflicting findings (Van Sell, Brief & Schuler, 1981), inconsistencies in the nature and strength of the relationship (Fisher & Gitelson, 1983), difficulties in interpretation (Fineman & Payne, 1981), and concern about whether the different measures provide adequate information on the stressors themselves (Parker & De Cotiis, 1983, Jackson & Schuler, 1985) have led a number of reviewers to suggest than old constructs should be reconsidered and alternative approaches to measurement should be developed (Crump, Cooper & Smith, 1980; Shaw & Riskind, 1983; Cox, 1985, Dougherty & Prichard, 1985). Out of these concerns two areas have emerged as important if stressor measurement is to reflect more adequately the different components to the stress process (Dewe, 1989). These are: the nature of the events being measured,

and the method of measurement.

The Nature of the Events.

Glowinkowski and Cooper (1985) point out that there has been considerable social and economic change since stressor measures were first developed, and that traditional measures by failing to take into account these changes, probably a) overemphasised the importance of some events, b) ignored the presence of others, (Fineman & Payne, 1981), and c) failed to consider the significance of such events in an individual's work life (Shirom, 1988).

Jackson and Schuler (1985) draw attention to the use of global or context specific measures which were not designed for identifying specific work stressors, and as Shirom (1988) points out, can be quite removed from actual work experiences. While global measures can provide a level of communality across studies, (Dougherty & Pritchard, 1985) the possibility remains that occupationally specific measures may be of greater practical advantage because they might identify specific stressors, offer greater predictive value, and capture the subtlety of different work practices (Dewe, 1989). In essence, what is being measured needs to be relevant to the population being considered and reflect the sorts of events that individuals actually experience as placing demands on them, rather than accepting as meaningful the a priori labelling of events as stressors (Brief & Aldag, 1989).

Method of Measurement.

The second area of importance for stressor measurement, concerns the techniques by which events are to be measured. Glowinkowski & Cooper, (1985) point out that many studies, whilst conceptualising work stress as related to demand, use rating scales in a way that only implies demand rather than measures it. This is because in general individuals when rating events were asked only whether the various events exist at work, and not whether the events place particular demands on them that may lead to work stress (Newton, 1989). However there are signs that some researchers are now considering the concept of demand and its meaning (Payne, Jabri & Pearson, 1988; Dewe, 1989).

For stressor measurement to reflect the different components to the stress process more adequately, measures must be relevant to the population being considered, sensitive to changes occurring in the environment, and reflect the events that do actually have meaning for individuals in terms of demands they place on them. Development of the stressor measure for the present study will attempt to take into account the above issues by ensuring that the events are relevant to and reflect the reality of principals and deputy principals, and that they are measured in a way that reflects the stressful nature of such events.

Summary

Having considered the development of the concept of stress and of its application to the study of work stress, it was decided to adopt a transactional framework to explore stressors, coping and the role of leisure as a means of coping with situations that individuals find demanding at work. It will provide a research context that emphasises the coping processes, will develop research instruments specifically for educational managers, which capture the nature of stressors which principals and deputy principals experience, and will explore the actual coping strategies they used. These new measures should meet the criticism that indices of work stressors more often imply demand than measure it. They should also address the criticism that work stress researchers have tried to measure the determinants and the effects of coping strategies before developing an understanding of the coping construct itself. However as indicated earlier, (p. 33) it has to be acknowledged that due to the cross-sectional nature of the present study the transactional perspective reflected in the proposed research design (see Chapter six) can only give a snap shot of a wider and more dynamic stress process.

When a transactional framework is adopted, it becomes apparent that issues surrounding coping and its measurement such as the concepts and methods of coping assessment, functions of coping, methodological problems and psychometric issues require consideration. These issues are the focus of the next chapter.

Chapter 4 - The Concept of Coping

Following on from the previous discussion of stress and work stress, the present chapter will review the concept of coping. In this study the term will be defined as the cognitions and behaviours, adopted by the individual following the recognition of a stressful encounter, that are in some way designed to deal with that encounter or its consequences (Dewe, Cox, & Fergusson, 1993). Because the emphasis in the present study is on work stress, coping is defined in terms of the response to work demands that tax or exceed a person's resources. The chapter will describe the major theoretical approaches, proceed to consider the functions of coping and cover the major studies of coping with stress at work. Finally it will also explore the measurement of coping. Here it can be said that much of the criticism that has been applied to the definition of stress can also be applied to that of coping, and perhaps it needs to be reiterated that the point of the criticism is to provide a context for the present study through which constructs like coping are reviewed, measures are developed, and their role in the stress process is explored.

By way of an introduction, Jacobson (1983) asserts that coping is the natural counterpart of stress, following stress as "butter" follows "bread". But as others have pointed out, (Parasuraman & Cleek, 1984; Newton & Keenan, 1985; Dewe & Guest, 1990) coping has received relatively little empirical attention in the work literature, and consequently less is known about it than about stressors. One possible reason for this neglect as was indicated in the previous chapter, is that many researchers define the construct of stress in terms of multiple components of a complex process, rather than in terms of the individual and environmental factors which combine to produce the cognitive state of stress and thus the context for coping. However, if stress were to be thought of as a relational process which involves a transaction between individuals and their environments, its affiliated concept of coping can be construed as a major factor in the overall process (Folkman & Lazarus, 1980; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Cox & Fergusson, 1991). Research would then reflect the increasing emphasis now being placed on cognitive appraisal and behaviour in the utilisation of personal and social resources to manage stress reactions.

Theoretical Approaches to the Study of Coping

As with stress, a number of different theoretical contributions have been made to the understanding of coping, and none has been entirely comprehensive. These include coping as a psychoanalytic process, as a personal trait, style or disposition, as a description of situationally-specific strategies, and as a process (Sjobak, 1973; Folkman, 1982; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Cohen, 1987; Edwards, 1988). Each of these will be considered in this chapter, together with three other approaches which can be regarded as complementary to the transactional model.

The Psychoanalytic Approach

For much of its history, coping was considered to be synonymous with the Freudian defence mechanisms which are said to occur unconsciously or at least intrapsychically (White, 1974). It was conceptualised primarily in terms of defensive ego processes that operate to reduce emotional tension, and it flowed from the theoretical convergence postulated between three developmental variables i.e. a) the psychosexual stage of childhood development at which trauma occurs; b) the primary impulses and conflicts of each particular stage - for example, oral dependency, anal-centred struggles over the social control of instinctual drives and phallic and oedipal conflicts - and c) the child's cognitive characteristics at each stage, which presumably shape the defensive style. But alternative hierarchical models of coping were derived from the same psychoanalytic origins (Menninger, 1954; Haan, 1969; Vaillant, 1977).

In particular Haan (1969) proposed a tripartite hierarchy, with coping as the most healthy and developmentally advanced process of adaptation, with defence as a neurotic process, and with ego-failure as the most severely regressed and perhaps psychotic adaptive process. Further hierarchical, developmental approaches tended to spawn a series of speculative trait measures of coping, such as the contrast between repression (avoidance or denial) - sensitisation (vigilance, isolation, or intellectualisation) that have yet to meet widespread acceptance. However, as Folkman (1982) points out, the psychoanalytic approach does not encourage a consideration of coping to manage the problem that is the source of stress, and often the process is confounded with the

adaptational outcome. She stresses that a process can be used to explain an outcome only when it is independent of the outcome.

For his part, Lazarus (1993) made the observation that the link between forms of psychopathology and specific defences was altogether too neat to be generally applicable, and he found that the close association between the developmental stage, the content of impulses, and cognitive characteristics did not show up clearly enough in observation to provide adequate support for it. Therefore in many quarters, psychosexual theory has given way to a greater emphasis on other cognitive - motivational processes such as the development of competence and control, and of course, defence.

The Personality Trait/Style Approach

The trait approach is concerned with personality dispositions that influence coping responses, and it dominated early research on coping processes. It has generated three major criticisms. Firstly, it assumes consistency of coping across situational contexts, although people have been found to respond to different situations in different ways (Cohen & Lazarus, 1973). As Folkman and her colleagues (1986, p.572-573) have noted, coping efforts across different types of situations were more variable than stable.

Secondly, several studies have demonstrated that coping traits and styles are poor predictors of actual coping processes. For example, Cohen and Lazarus (1973) found that a trait measure of repression-sensitisation, which reflects the tendency to search out information in reaction to a threat, did not predict the actual coping behaviour of patients in response to preparation for surgery. Lazarus and Folkman (1984) also argued that the trait style approach underestimated the variability and complexity of actual coping behaviour, because most measures of coping traits and styles are personality focused, and as such they are inappropriate for the accurate assessment of the multi-dimensional nature of the coping processes employed in relation to real life stressors.

Thus trait measures characterise an individual's typical responses to stressors, and lead to the assumption that people tend to use the same coping style or pattern in all situations. But despite the widespread use of such means as Byrne's (1964)

repression-sensitisation scale and Goldstein's (1959) incomplete sentence technique to classify people as *avoiders*, *copers* and *non specific defenders*, the assumption remains both limited and untested. Therefore many researchers prefer to study actual behaviour as it occurs in stressful situations, and then to infer or assume the coping processes associated with it (Lazarus, Averill & Opton, 1974; Monat & Lazarus, 1977). In short, trait measures are typically uni-dimensional and hence inadequate for capturing the multi-dimensional quality of actual coping processes, a problem they share with conceptualisations based on defence mechanisms. It is difficult to see how the unfolding nature of most stressful encounters and the concomitant changes in coping can adequately be described by measures of a presumably static disposition, although such a disposition may be a factor.

The Situation-Oriented Approach

The third major approach used to assess coping, is to describe how people react to the demands of specific situations, e.g. exams, illness, moving, etc. It is called the situation oriented approach (Folkman & Lazarus, 1980). It allows the description of complex coping processes that the other two approaches do not. For example, Mechanic (1962) describes how students managed the source of stress - the examination - by allocating time, choosing test areas and developing test-skills, and how they also regulated feelings states by using strategies such as comforting cognitions, favourable social comparisons, humour, and being a member of a supportive group. According to Folkman (1982), the major disadvantage of the situation-oriented approach is that the coping tasks and accompanying coping strategies are usually worded so that they refer to relatively unique aspects of a particular setting making cross-situational comparisons of coping difficult. Situation oriented research tends to be situation specific.

The Process Approach

The more common notion of stress as relational in nature, involving some sort of transaction between the individual and the environment, has dramatically changed the way in which coping is conceptualised. It assumes that coping is a major factor in the overall process (Folkman & Lazarus, 1980; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Cox & Fergusson, 1991) as opposed to simply being seen as

the explanatory expedient of stressor-health relationships that cannot be easily understood (Dewe, 1989). In these process terms, coping is defined as the process of managing external and/or internal demands that tax or exceed the resources of the person (Lazarus & Launier, 1978; Lazarus, 1981). The three key features of this definition are the emphasis it places on the process in contrast to the more traditional approaches, (Folkman et al, 1986; Cox, 1987; Edwards, 1988) the setting of coping in terms of the relationship between the person and the environment, (Folkman, 1982) and the link it provides with other components of the stress process.

Central to this type of definition is the concept of cognitive appraisal, defined by (Holroyd & Lazarus, 1982) as those mechanisms that imbue a stressful encounter with meaning for the person. This is not to say that cognition should necessarily be equated with consciousness or rationality, because the thought processes involved are often not in the immediate realm of awareness (Edwards, 1988). Rather two important interacting mechanisms are presumed to be involved in the appraisal process. The first, *primary appraisal* - refers to what is at stake (Folkman, 1982). It is the process by which individuals evaluate the stimulus characteristics of a possibly harmful situation by asking the question "Am I in danger? Do I need to cope?" If the answer is yes, the process of *secondary appraisal* is initiated. It refers to the selection of appropriate actions from the available coping resources and strategies.

The relationships between stress and coping are seen as reciprocal, in that actions taken by the person to cope with a problem also affect the appraisal of the problem and subsequent coping. There is certainly converging evidence that stressful events are interpreted and appraised for meaning and impact and that physiological and behavioural responses vary as a result (Folkman & Lazarus, 1980, Folkman, 1982; Lazarus & Folkman, 1984; Strauman, Lemieux & Coe, 1993; Roger & Rector, 1994). The cognitions add a crucial element to the transaction between individuals and their environments, and thus help to account for the individual differences and the element of choice in coping behaviour (Jacobson, 1983).

It should be emphasised here that this process is recursive and not linear or in sequential stages (Lazarus, 1991; Cox 1993). Coping efforts are made in response to stressful appraisals that signal harm or loss, threat or challenge, and they have the effect

of either altering the situation and/or changing the person's feelings about it. Such new appraisals, or reappraisals in turn engender new coping efforts, and so on (Folkman, 1982). Thus from a process point of view, coping has been more recently described as the ongoing cognitive and behavioural efforts in response to specific external and/or internal demands that are appraised as taxing or exceeding the resources of the individual (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986).

This definition and the definition given at the beginning of this chapter in relation to work stress, highlight the major elements of the coping process: i.e. the occurrence of an event which impinges upon the person, appraisal of that event as threatening to oneself, and manifestation of some cognitive or behavioural response to alleviate or remove the threat (O'Driscoll & Cooper, 1994). From a measurement and research standpoint, this type of formulation emphasises that the coping effort is a separate factor in the outcome, and therefore is capable of independent assessment (Folkman, 1982). It follows that:

- coping behaviours or processes are a more appropriate focus than coping styles, recognising that the target towards which coping is directed can be emotional (internal) as well as situational (external), and that these behaviours and processes include the identification of those aspects of the situation which individuals find taxing (Latack & Havlovic, 1992);
- coping applies to challenging as well as to harmful and threatening situations (Cox & Fergusson, 1991);

and

- coping is integrative in nature linking the other components of the stress process (Schuler, 1984; Cox & Fergusson, 1991).

Complementary Process Approaches To Coping

Although Lazarus' transactional views dominate current thinking about coping, others extend and clarify them. One is the personal-societal perspective on coping proposed by Mechanic (1970). He was concerned that the study of coping had focused on the individual person at the expense of the societal considerations, and hence he proposed a model to link coping mechanisms to the institutions and values of the societies in which individuals live. Thus although Lazarus' transactional model

acknowledges that groups, institutions and cultures do influence a person's perceptions of stress and choices of coping modes, Mechanic raised their profile by illuminating the nature of individuals' reciprocal ties to their social systems.

A second complementary perspective worth noting is Antonovsky's (1979) concept of generalised resistance resources (GRRs) to account for coping responses that might be effective in different situations. He was influenced by Selye's work with the commonalties of response to stress, and he developed the concept to describe any characteristic of a person, a group or an environment that could facilitate effective tension management. In his view the availability and coherence of such generalised resistance resources, involving physical, biochemical, cognitive, emotional, valuative-attitudinal, interpersonal-relational macrosociocultural characteristics, plays a decisive role in determining how a person copes with stress. He argued that a relatively strong sense of coherence mobilises generalised resistance resources to help the person avoid stressors, redefine stimuli as non stressors and to hold their own, or overcome the stressor.

A third perspective is Friedman and Rosenman's (1974) Type A personality pattern which is thought to be the primary personality characteristic related to coping with stress. A connection between this personality pattern and stress-related disease, particularly coronary heart disease, has been empirically established (Friedman & Rosenman, 1974). It was said to be an inherent behaviour pattern that gave mastery and control over threatening environment situations. The "take charge" person would be expected to cope with stress in a manner reflective of the aggressive Type A personality, and use proactive control strategies perhaps more than avoidance strategies. However, questions remain as to its validity as a central component in the coping process, particularly in relation to coping with stress at work other than that of the emergency services. At issue is the effectiveness of the coping process as a whole, as well as the identification of its component parts.

Functions of Coping

In order to evaluate coping, one must have an idea about what functions it serves (Folkman, 1982). These have been conceptualised in a number of different ways

depending on the theoretical context and/or concern with a particular level of stressor. For example when coping is conceptualised in terms of defence mechanisms, (e.g. Menninger, 1963) its major function is the reduction of tension and the restoration of equilibrium. If the concern is with illness, major coping functions include the reduction of harmful environmental conditions, the toleration of or adjustment to negative events and realities, the maintenance of a positive self-image, emotional equilibrium, and satisfying relationships with others (Cohen & Lazarus, 1979).

However, researchers in diverse areas have recognised two major, overriding functions, namely coping that is directed at managing or altering the source of stress, and coping that is directed at regulating the emotional response to the problem. These come from political science (George, 1974), sociology (Mechanic, 1962), industrial-social psychology (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964) and developmental psychology (Murphy, 1974). As Follkman (1982) notes, the same division is implicit in models suggested by Mechanic (1974), White (1974) and Pearlin and Schooler (1978). Folkman and Lazarus (1980) formulated these categories into problem focused coping, - i.e. coping that is directed at managing the problem, and emotion-focused coping, - i.e. coping that is directed at managing or reducing emotional distress.

Contemporary applications of this classification in the work stress setting include direct coping versus suppression (Parkes, 1990), adaptive versus maladaptive coping (Parasuraman & Cleek, 1984), engagement versus disengagement coping (Long, 1990) and approach versus avoidance coping (Cronkite & Moos, 1984). Latack (1986) suggested that problem focused behaviours which focus on the stressor are more appropriately labelled *action* - and emotion focused behaviours which focus on cognition of the situation, as - *cognitive reappraisal.*

The difficulty with many of the studies involving the two formulations, is that often the focus is on linking the categories to outcomes, with action responses being associated with positive outcomes more often than emotional control - reappraisal responses. This has led to a belief in concepts of *good* and *bad* coping without adequate regard given to the situational context. However Folkman (1982) claims that problem and emotion focused coping include both cognitive and behavioural strategies, and no strategy is considered inherently better or worse than any other. Emotion-focused

coping, for example, includes strategies such as looking on the bright side of things as well as behavioural strategies such as seeking emotional support or having a drink. The amount of effort that is put into either type of coping depends on how an event is appraised (Lazarus, 1966). If the event is appraised as providing opportunity for taking control, problem focused coping might be expected to be more frequently used. On the other hand if an event is appraised as offering little or no opportunity for change, increased amounts of emotion focused coping would be expected (Shinn, Rosario, Morch & Chestnut, 1984, Long, 1993).

Problem and emotion focused coping and the variants, as broad coping functions are not without their critics. For example, Dewe, Cox and Fergusson (1993) consider them too broad, not well supported as they stand and with only weak predictive power. Cox and Fergusson (1991) suggest that descriptions of coping need to include, but go beyond a simple problem-emotion-focused dichotomy, with at least the two additional dimensions of reappraisal and avoidance. They themselves propose that coping serves one overall function, that of dealing with the emotional correlates of a stressful transaction to create a sense of control. Beyond this they say coping strategies have three functions: 1) problem solving, 2) reappraisal and 3) avoidance.

While there continues to be disagreement over the exact nature of the functional dimensions of coping, it is agreed that coping forms part of the overall stress process (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Dewe, Cox & Fergusson, 1993). The disagreement over the functions and consequences of coping persists largely because of the multitude of diverse methods used to study how people cope with stress (Cohen, 1987; Latack & Havlovic, 1992; Cox & Fergusson, 1993). This has produced a proliferation of coping strategies and measures with little consideration being given to their psychometric properties (Latack, 1986). The problems of methodology and measurement will be addressed below in greater detail but for now it remains for this chapter to move from a general psychological approach to coping to explore the measurement of coping in a work setting and to deal with issues of methodology, classification and utility.

Coping With Work-Related Stress

In their 1979 review, Newman and Beehr noted that there had been little rigorous evaluative research on coping strategies. Seventeen years later despite the fact that research into coping strategies has gained considerable momentum (Edwards, 1988), with numerous efforts made to investigate coping (Latack, 1986; Dewe & Guest, 1990; Edwards, 1992; Schwartz & Stone, 1993) and widespread agreement on the importance of coping as an explanatory construct (Edwards, 1988), researchers are still left despairing at the apparent lack of consensus surrounding how coping should be measured (Cohen, 1987).

Research Frameworks

The most common approach to the study of coping in a work setting appears to be *taxonomic* (Cox, 1987; Puffer & Brakefield, 1989) where researchers describe and categorise coping behaviours that are broadly applicable to all work situations. This, as Latack and Havlovic (1992, p 491) suggest involves both the focus of coping, the target towards which the coping behaviour is directed, and the mode of coping, the variety of different methods used.

One approach has been to formulate and select strategies on an a priori or theoretical basis. For example, Stone and Neale (1984) developed a coping assessment questionnaire that was based on extant coping inventories and the empirical literature on the strategies of coping with surgery, illness and natural disasters. They distributed 55 items among eight categories including distraction, situation redefinition, direct action, catharsis, acceptance, seeking social support, relaxation and religion. They let existing theory guide the development of their scales of coping, beginning with a set of hypothetical categories and testing them in terms of their apparent applicability to particular stressful encounters. Another example is the work of Latack (1986). She was specifically concerned to demonstrate the validity of three predetermined dimensions of coping; control, escape and symptom management, and she generated coping strategies from either open-ended or pooled data and then imposed on the items some existing or predetermined classification system.

In contrast to theoretically driven studies, researchers such as Dewe & Guest (1990), Newton and Keenan (1985) and Pearlin and Schooler (1978) for example, used an inductive approach to classifying coping. They attempted to understand the coping construct by examining, describing and developing a typology of coping based on the strategies individuals reported using. They had a major advantage over others in that they made no assumptions about how individuals might respond in specific situations, and they also placed no restrictions on the types of behaviours in which individuals might engage during stressful transactions (O'Driscoll & Cooper, 1994). Variations on this theme have produced a wide range of work related coping strategies. Alas, both the inductive and deductive approaches have problems and limitations.

Some research into coping in a work setting has also been concerned with the context within which coping takes place, with the hope that investigating those factors might account for variations in coping behaviour, e.g. the Puffer and Brakefield (1989) study to examine task complexity as a moderator of the stress and coping process. But this type of research still appears to be constrained by disagreement as to the conceptualisation and measurement of coping strategies (Aldwin & Revenson, 1987) and by the lack of consensus about which dimensions are most useful and the level of generality required (Cohen, 1987).

Other researchers have examined:

a) the influence of personality, gender and race on the use of different coping strategies (Greenglass, 1988; Greenglass, Burke & Ontrack, 1990, Stroman & Seltzer, 1991; Strutton & Lumpkin, 1992; Walsh & Jackson, 1995);

b) the strategies used when coping with specific stressful situations (Burke & Belcourt, 1974; Feldman & Brett, 1983; Leana & Feldman, 1990), chronic work stress (Nelson & Sutton, 1990), and common work stressors like role conflict and role ambiguity (Havlovic & Keenan, 1991);

c) the relationship between either the coping process and adaptational outcomes (Kuhlman, 1990) or individual responses to work stress and burnout (Thornton, 1992);

d) the effectiveness of different coping strategies (Howard, Rechnitzer & Cunningham, 1975; Bhagat, Allie & Ford, 1991);

and

e) the nature of the relationship between specific styles of coping and different outcomes (Parasuraman & Cleek, 1984; Leiter, 1990; Koeske, Kirk & Koeske, 1993; Long, 1993).

As has been noted, a number of different conceptual frameworks have been developed for classifying coping strategies in an occupational setting. But no consistent pattern has emerged from these studies which might lead to an empirically based classification (Dewe & Guest, 1990). However the problem focused/emotion focused classification remains popular with researchers, perhaps because it offers the least amount of ambiguity (Fleishman, 1984). To reiterate, many researchers suggest that their studies can either be broadly grouped according to these categories (Dewe & Guest, 1990), or described in ways that reflect either a problem-focused ("direct action": Menaghan & Merves, 1984) or an emotion-focused ("positive comparisons": Pearlin & Schooler, 1978) orientation. However the range and variety of different coping measures that have been used, often without psychometric evaluation of scale properties or attention to the broader issue of construct validity are matters that must now be given some attention.

Issues in the Measurement of Coping

Four issues have been identified that are particularly important and relevant to the present study. The first is the need to distinguish between coping style and coping behaviour in relation to the instructions used in the measurement scales (Dewe, Cox & Fergusson, 1993). Following Folkman and Lazarus (1986), coping styles refer to the consistent and stable preferences described somewhat independently of the stressful situation. Coping behaviours by contrast, refer to the responses which individuals make (or say they make) in particular stressful transactions.

Folkman and Lazarus (1980, 1986) argued that coping styles can be too broad and are unrelated to the context in which coping occurs. Other researchers have found little correspondence between preferred styles and actual coping responses (Cohen 1987; Edwards, 1988; Carver, Scheier & Weintraub, 1989). Newton (1989) suggests that the distinction between coping styles and coping behaviour is often reflected simply in the

type of instructions accompanying coping measures that are given to subjects. For example, those that ask individuals to say how they cope with stress at work, (Howard, Rechnitzer & Cunningham, 1975; Dewe, 1989) may elicit responses that resemble a style of coping; whereas those instructing individuals to focus on a particular event and then to describe how they coped with it, are more likely to provide examples of their actual behaviour in a specific encounter (West & Savage, 1988; Firth-Cozens & Morrison 1989). Another distinction with regard this issue of specificity is the clarity with which the dimensions tap *coping* rather than coping effectiveness (Latack & Havlovic, 1992). Measures which are specific do not include effectiveness criteria. Such divergent foci according to O'Driscoll and Cooper (1994) may make a substantial difference to the coping responses reported by individuals (Stone, Greenberg, Kennedy-Moore & Newman, 1991).

A second issue concerns having to decide between occupationally specific or more general measures of coping. According to Dewe, Cox and Ferguson (1993) occupationally specific measures have the advantage of capturing the unique subtlties of a particular work situation but make cross-situational comparisons difficult (Folkman, 1982). More general measures enable cross-situation and cross-group comparisons, but may only weakly relate to the behaviour of any one occupational group. Latack and Havlovic (1992) suggest a middle range approach of identifying categories of specific job stress situations, such as restructuring, that are sufficiently common to be a useful specific focus, and serve as the fabric for the specific content of coping measures.

Developing coping measures raises the third issue, the decision to be made as to the comprehensiveness of the instrument or scale. Latack and Havlovic (1992) suggest that comprehensiveness includes two coping dimensions: *Focus of coping* - the target toward which the coping behaviour is directed - the problem or the individual emotional reactions; and *Method of coping* - the mechanism or mode the person uses during the coping process - cognitive versus behavioural, control versus escape. While empirical data is supportive of the two global distinctions of problem-or emotion-focused coping, (Mitchell, Cronkite & Moos, 1983; Moos, Cronkite, Billings & Finney, 1983) others (Newton & Keenan, 1985; Dewe & Guest, 1990; Cox & Ferguson, 1991; Latack & Havlovic, 1992) have queried whether those categories adequately capture the range of potential coping responses. Latack and Havlovic (1992) suggest that only by

considering the comprehensiveness and specificity of coping responses will valid coping measures be able to be developed with which coping can be rigorously measured.

Fourthly, an issue raised in relation to the measurement of work stressors in the previous chapter also needs mentioning here in relation to coping. It is the meaning individuals give to events, and the ways that meaning might be measured. (Dewe, 1991a). There are two aspects to this. The first aspect concerns those factors that make events stressful, because traditionally the presence of a powerful stressor, equates with an individual being under stress. But if, as Duckworth (1986) suggests, events should no longer be thought of as having some intrinsically negative power, the meaning individuals give to them may be a more powerful predictor of affect than the events themselves (Dewe, 1989).

The second aspect concerns whether the conventional measures of work stressors are prone to what Glowkinowski and Cooper (1985) describe as an "inherent bias". A number of job-related stress studies (Khan et al, 1964; Rizzo, House & Lirtzman, 1970; Burke & Belcourt, 1974; Van Sell, Brief & Schuler, 1981) have solicited respondents' perceptions of the impact of a predetermined set of stressors, such as role demands, role conflict, human resources management practices, and they may not have captured recent events that entered the scene such as economic and social change. Consequently, if the scales used do not include events that respondents themselves have identified as being important, research may unwittingly be asking individuals to respond to events which are neither important nor relevant to them and their situation.

Although several of the more recent studies (e.g. Newton & Keenan, 1985; Carver, Scheier & Weintraub, 1989; Dewe & Guest, 1990; Holahan & Moos, 1990; Schwartz & Stone, 1993) have addressed the question of importance and relevance by asking respondents themselves to identify stressful experiences which have confronted them, few have focused specifically on those which have occurred in the workplace (Newton & Keenan, 1985; Dewe, 1991b). Compared with an a priori selection of stressors, O'Driscoll and Cooper (1994) point out that this more specific approach enables respondents to report events or encounters which are important to themselves, again enhancing ecological validity (Newton, 1989).

Finally, there is the overall recognition that the virtually exclusive reliance on quantitative methods may simply not be appropriate for the study of coping in work settings (Nelson & Sutton, 1990). While increasingly qualitative methods are being introduced into research designs at various stages, quantitative methods such as factor analysis are still used to model coping strategies. In contrast, Erera-Wetherley (1996) employed a wholly qualitative inductive methodology to link coping behaviour with specific stress stimuli. That particular study, in accordance with Lazarus and Folkman's (1984) recommendation that coping is best tested indirectly, asked no direct questions about coping mechanisms. Instead it assessed coping on the basis of information offered in response to questions about ambiguity and conflict experienced by the respondents (Erera-Weatherly, 1996). Although this is an example of work related research which adopted an alternative method to the theory driven and empirical designs reviewed thus far, interestingly all but one of the coping mechanisms derived from the data had been identified previously in the literature, all could be clearly categorised as either problem-focused or emotion-focused, and all were distinct in terms of the sources of stress which evoked them, the target to whom they were carried, and the specific coping mechanisms that were adopted. The need to consider the strengths of the qualitative approach to measuring coping strategies is clearly established in the review and discussion by O'Driscoll and Cooper (1994).

Psychometric Issues

Having reviewed examples of the different methods which have been utilised to assess coping strategies, attention must now be paid to four particular problems of a quantitative nature that have been identified with extant coping measures (Cohen, 1987; Edwards, 1988; Latack & Havlovic, 1992; O'Driscoll & Cooper, 1994).

The first issue concerns the internal consistency of the measures. Coping research frequently reports reliability coefficients that are lower than desirable for establishing the adequacy of the coping scales. In addition, the low internal consistency also raises serious questions about the validity of the instruments that were used. Substantial variations are shown in the internal reliabilities of general coping skills, with an average alpha coefficient of .71 found across 15 studies (Latack & Havlovic, 1992). The most frequently utilised coping instrument, Lazarus and Folkman's *Ways of Coping Checklist*,

has produced internal reliability estimates which range from .35 to .85 (McCrae, 1984; Folkman & Lazarus, 1986; Edwards & Baglioni, 1993). The modified version of a coping questionnaire originally developed by Moos, Cronkite, Billings and Finney (1983) yielded an alpha range from .62 to .73 respectively across the resulting four coping strategies (Bar-Tal & Spitzer, 1994). A work-related coping instrument that has, with the possible exception of two subscales (O'Driscoll and Cooper, 1994) shown better reliability with ranges from .66 to .81 is that of Dewe and Guest (1990). Coping measures designed to focus on specific forms of stress, have fared no better psychometrically than general coping instruments. For example, in Schonfeld's (1990) assessment of five types of coping strategy used by teachers, the alpha coefficients range from .61 to .76.

The second problem concerns the overlap between some modes of coping which theoretically should be empirically distinct, as well as a lack of relationship between coping dimensions with similar names (O'Driscoll & Cooper, 1994). The matter is complicated, because the functions served by different coping mechanisms may overlap in some contexts, and hence produce significant correlations between strategies (Amirkhan, 1990). Also, similar dimensions from different instruments sometimes bear little relationship to each other, and so suggest that either they tap into separate domains or that substantial measurement unreliability exists (Cohen, 1987).

Thirdly, despite the importance of having robust psychometric instruments, few attempts have been made to confirm the factor structures of coping measures (Edwards, 1988). Those that have attempted to replicate the original factor structure of the Ways of Coping Checklist have produced not only differing numbers of factors, but also the have made different assignments of coping behaviours to the different factors (Aldwin & Revenson, 1987; Cohen, 1987; Latack & Havlovic, 1992).

Fourthly, as has been mentioned above, few studies have paid attention to the validation of coping behaviours, especially to those that are relevant and important for the changing circumstances in the workplace. Thus overlaps between factors, the absence of any relationship between similarly described factors and the range of behaviours included, further confound validity (O'Driscoll & Cooper, 1994).

It has to be said that there are no simple answers as to which approach is best, but what is clear is that techniques and methodologies must be used that capture and describe what individuals think and do (Holroyd & Lazarus, 1982). As Van Sell, Latack and Schuler (cited in Latack, 1986) suggest, if coping data is to be replicated, then coping dimensions are needed that generalise across samples.

Clearly an agreed, clear cut classification of coping strategies has yet to be achieved, and this target must be kept in sight. Towards that end, coping may be seen conceptually as a functional attempt to manage demands, by either changing them, redefining them (reappraisal) or adapting to them. The styles and strategies used need to be relevant and applicable to the situation at hand, The choice and use of these responses will be determined by both the nature of the situation, by the personal and social resources available, and by the type of causal reasoning adopted in the appraisal process.

Coping as a Moderator of the Stress-Health Relationship

The low correlation between life events and illness reported in the literature (Rabkin & Streuning, 1976) with life event stress accounting typically for about 10% of illness severity variance and even the better of the work stress studies only predicting 15-25% of the variance between work stress and illness (Cooper & Baglioni, 1988), indicates that certain variables may well be protecting individuals from the adverse effects of such events. Some persons exposed to stressful events of severe magnitude demonstrate few symptoms, while others who experience events of smaller magnitude manifest stress reactions out of all proportion to the event. The explanation for this paradox would seem to lie in the coping resources and behaviours available to the individual.

Such individual differences have been investigated as either components or mediators of stress appraisal or as moderators of the stress-outcome relationship (Cox & Fergusson, 1991). Hence, researchers have asked, for example to what extent the experience of stress depends on the match between the person's attitudes, knowledge and skills and the demands made on them by their work. Consequently many individual difference variables have been explored as possible mediators or moderators in relation

to the stress process. These include: hardiness (Kobasa, Maddi & Kahn, 1982; Kobasa & Puccetti, 1983; Gallen & Blaney, 1984), locus of control (Anderson, 1977; Brownell, 1982; Spector 1982; McIntyre, 1984; Jackson 1987; Solomon, Mikulincer & Avitzer, 1988; Solomon, Mikulincer & Benbenishty, 1989; Heaven, 1990), social support, (Gore, 1981; Belle, 1982; Lim, 1996) and coping behaviour (Hamburg, 1974; Gal & Lazarus, 1975, Pearlin & Schooler, 1978; Dewe, 1991b).

Unlike many of their predecessors, Cox and Fergusson (1991) map the distinction between mediators and moderators of stress-outcome by using the transactional model. They suggest that first, individual differences may exist in relation to the person's perceptions of job demands and pressures (primary appraisal); that second, people will vary in their ability to cope with demands, and in their perceptions of those abilities; third, that people may vary in the amount of control they can exercise over any situation; and finally that people may vary in their need for social support. They go on to say that the stress-outcome relationship is moderated by individual differences, not only in secondary appraisal and related decision-making and in coping, but also in emotional and physiological response tendencies, latencies and patterns. They argue that moderating variables are not only useful as explanatory concepts for linkages between sociodemographics and illness, but also for understanding why illness does not always result when stressful conditions are present.

Coping is a variable on which individuals may differ, and according to Cox and Fergusson (1991) individual differences are also implicit in the repertoire of coping resources available to the person, in the person's decisions on combining options into strategies, in the functions that these strategies are designed to fulfil, and in the way they are fitted to particular person-environment transactions. However, once again, the findings on individual differences in coping have not been totally consistent across studies, nor have coping behaviours always been shown to moderate the stressor-strain relationship (Billings & Moos, 1984; Parasuraman & Cleek, 1984; Aldwin & Revenson, 1987).

One of the reasons for the mixed results could stem from the confusion over whether coping should be treated as a mediating link between stressors and psychological strain, or as a moderator of the stressor-strain relationship (Cox &

Fergusson, 1991). Baron and Kenny (1986) make a clear distinction between a *mediator* variable, i.e. one that is responsible for the transaction of an effect, and a *moderator* variable whose presence or level alters the direction or strength of the relationship between two other variables. The conceptual difference between the two needs to be made explicit, and requires that different statistical procedures be adopted when they are studied.

Moderators pertaining to an individual's lifestyle (such as leisure) have received little attention in the work stress literature (Kirkcaldy & Cooper, 1993). Justification for including leisure as a possible moderating variable in the work stress-illness relationship comes from historical as well as contemporary viewpoints equating leisure with well-being, and will be discussed in more detail in the next chapter. Theoretical perspectives such as those of Patrick (1916), Menninger (1948), Haun (1973) and Neulinger (1982) which advocate leisure for well-being, argue that leisure has an independent effect on health. Following on from this, leisure theory would implicitly if not explicitly suggest that when stressful events were present at work, leisure would exert a buffering effect. Some empirical, studies have indeed shown leisure participation as an independent variable to buffer the impact of more severe life crises (Reich & Zautra, 1981; Wheeler & Frank, 1988, Caltabiano, 1994), but the results, as will be seen below, are not so conclusive when work stress is the dependent variable.

From a coping perspective, if the problem focused/emotion focused distinction is accepted (Lazarus, 1966; Folkman, 1982), leisure may be seen as a form of emotion-focused coping - i.e. (remembering that emotion-focused coping involves thoughts or actions designed to relieve the emotional impact of stress) - and as such it may have direct effects on stressor-strain relationships as well as in moderating their effects. Indeed Pearlin and Schooler (1978) examined the moderating effects of coping resources and coping responses on life strains, and found that the regression coefficients between stress and strain were substantially reduced by the use of avoidance/emotion focused coping procedures. If emotion focused coping moderates the stressor-stress relationship as suggested by these results then leisure as an emotion focused coping behaviour might also be expected to exert a buffering role in the presence of stressful events.

Researchers however, are divided on the effectiveness of problem focused versus

emotion focused coping, and contrary to the findings above other researchers such as Cronkite and Moos (1984), Brenner, Sorbom & Wallius (1985), Latack (1986), and Ashford (1988) found that the relationship between stressors and illness in their studies was strengthened as a result of using emotion/avoidance coping. There is also a tendency for researchers to report more engagement in emotion focused coping as stress increases (Latack, 1986; Long, 1993).

Summary

Coping is now recognised as an important part of the overall stress process. This chapter has set out the two main approaches to coping, one that emphasises style - i.e. personality characteristics - and the other that emphasises process - i.e. efforts to manage stress as adaptational change to a situational context. The process approach has been outlined, coping has been defined, and its functions have been described. Studies of coping with stress at work were reviewed, and the methodological issues emanating from these studies were discussed. It was found that coping has been investigated as having both main and moderator effects on the stressor-strain relationship. This discussion of coping paves the way for the next chapter, a review of the final component in the present study - leisure, an individual difference and potential coping resource that might conceivably directly affect or moderate the work stressor-strain relationship.

Chapter 5 -The Concept of Leisure

As noted previously, the past two decades have seen an upsurge of interest in the nature, causes and effects of stress in both work and non work settings (Cooper & Payne, 1978, 1980; Cooper & Marshall, 1980; Bhagat & Beehr, 1985; Cooper & Smith, 1986). Increasingly, attention has been given to the nature of coping strategies employed by people to deal with stress (Pearlin & Schooler, 1978; Dewe & Guest, 1990). Nowhere is this attention more important than in the work setting, which for millions of workers is a centre for much life activity and the source of many of the mental health problems experienced by workers today (Creed, 1993). While a number of coping mechanisms and strategies such as social support, (Kessler, Price & Wortman, 1985) psychological stress management programmes, (Murphy, 1984) and increased participation in decision making, (Jackson, 1983) have been investigated, one area of coping behaviour that has seen little research is that of leisure behaviour.

The lack of research is strange, as leisure is an important determinant of general life satisfaction that is "fairly free of the constraints imposed by work demands such as responsibility, work efficiency, time structure, and job status" (Kirkcaldy & Furnham, 1990). It's primary functions have been defined frequently as recuperation and relaxation (Dumazedier, 1967; Kelly, 1972; Driver & Tocher, 1975) and there is empirical research to affirm the importance that people attach to these functions (Kelly, 1978; Beard & Ragheb, 1980; Pierce. 1980; Kabanoff, 1982; Buchanan, 1983; Shaw, 1985). It is surprising therefore that little research has examined the extent to which stress is a factor in shaping people's leisure needs and preferences. It is even more surprising that research has not been extended to including examination of the traditional hypotheses about whether the work/leisure relationship spills over, generalises or compensates for stress, although more attention has been given recently to the whole area of leisure and health (Iso Ahola & Weissinger, 1984; Coleman, 1993; Caltabiano, 1994).

This chapter will begin by reviewing the concept of leisure through a discussion of its historical antecedents. This discussion will highlight changes in the meaning of the concept over time, before presenting and evaluating the main definitions of leisure that have been proposed. It will consider the many dimensions or functions of leisure

because leisure has been shown to be a multi-dimensional concept. It will go on to examine the link between work and leisure by (a) exploring how the changing nature of work has led to a "tension epidemic" (Hayes, Brightwell & Antozzi, 1984) and to changes in leisure experience, far removed from the Greek ideal, and the implications these have for stress/leisure relationships, and (b) by relating these implications to the more traditional hypotheses about how work and leisure are related. Finally the chapter will explore the reasons for considering leisure as a variable in the stress process, and examines the evidence supporting claims for leisure related health benefits.

The History of Leisure

Leisure is an elusive concept whose origins are attributed to the ancient Greeks, among whom Aristotle features prominently (Yoshioka & Simpson, 1989). What Westerners think of as science also had its origins with the ancient Greeks, but while after a thousand years dormancy science reappeared during the middle ages and matured into the most viable, if not the most empirical source of knowledge, leisure returned only very recently, and in a form which would be unrecognisable to the Greeks. What Aristotle had perceived as the most human of endeavours and the goal of life, had become defined as the period of time left over after the important things in life had been completed. The Greeks and to a lesser extent the Romans, took leisure seriously enough for their philosophers to identify it as the basis of culture. It represented the quintessence of individual and city state development and reflected the highest of ideals that still underpin but are often unrecognised in western civilisation. These societies also gave a system of reasoning, of politics, government, and of education, - and approximately ten percent of the English language, including much of our nomenclature associated with leisure (Arnold, 1991).

In classical Greece, leisure was not the time remaining after work had been done, nor was it a means to an end outside and apart from itself. It would have been incomprehensible in the time of Aristotle for a person to state, "Now I have leisure for some activity" (Arnold, 1991). In those days leisure was not considered the opposite of work, because the early Greek culture developed an avowed distaste for work and labour because those activities represented something less than the good life, something

that was inherently demeaning to the human spirit. The word work was erg (εργο), the root meaning for output of energy, or for a system for measuring the expenditure of energy in which slaves indulged. Although we cling passionately to the idea of freedom, our modern lives centre around work and in attempts to integrate the two - freedom and work-create a dichotomy of semantic complexity which contributes to misunderstanding and inconsistency (Arnold, 1991). The founding fathers of the American Constitution, many of whom were scholars of Greek, held that the pursuit of happiness was the American ideal but they made it difficult to conceive of a highly advanced civilisation where work was not the centre of life. They did not anticipate that their successors would become slaves to technology rather than vice versa.

According to Yoshioka and Simpson (1989), Aristotle noted that the potential for leisure depended upon certain economic and political conditions within City States. These conditions can be subsumed by three categories, the first of which was peace, i.e. it was declared that leisure was impossible of attainment so long as citizens were constantly on guard for their lives and for the sovereignty of the nation. The second condition was prosperity, i.e. that freedom from the worries of poverty was a necessity for leisure to occur. Therefore in ancient Greek and Rome, leisure depended on there being a sufficiency of slaves, women and a lower class to maintain a flourishing economy for a few privileged and free males. Third there needed to be an understanding of the proper use of leisure, because, in the words of De Grazia (1962, p.12) "legislators are to blame if they do not educate citizens to other virtues needed for the proper use of leisure ..... a citizenry unprepared for leisure will degenerate ..." In *The Republic*, Plato called for a life of relative simplicity. What he witnessed was the fall of Athens from greed and excessive pride (Plato, 1984). At the same time in Sparta the likelihood of leisure was slight because the masters there were constantly on guard against possible revolt from their servants who far outnumbered them.

Rome became influenced by the Greek idea of leisure largely through the writings of Seneca. The Latin word for leisure, *otium*, signified rest or recreation, and it was contrasted with *negotium* or work. To the Romans, work was drudgery, while leisure was regarded as the preserve of the rich, allowing the exercise of the mind and spirit. According to Seneca, leisure was philosophising. Cicero however conceived of leisure as rest after a long life of work or negotium. He believed the individual should

work so as later to have leisure. Pliny advocated that Roman citizens should alternate their work with leisure, and take their leisure away from the crowded city to the countryside, lake or sea. Much to the chagrin of Aristotle who blamed the decline of Rome on its disregard of the leisure ethic, Rome did not view the life of leisure as the only fit life to live and the eventual goal of society.

But there were other differences between the Greeks and the Romans. For example the dominance of Rome over Greece was military and economic rather than intellectual. While the Greeks were profoundly aesthetic and idealistic for the most part, the Romans above all else were pragmatic (Arnold, 1991). At the early stages of the era of the Roman Empire, leisure was a serious business; people participated vigorously in games and sports to be able to fight for the state. Besides these utilitarian reasons, many forms of leisure sports and games were carried on for religious purposes. But with increasing military power Roman citizens began changing their active leisure habits, and they became more passive than active. The factor of social entertainment found its climax in AD 354 when the Roman year included 200 public holidays of which 175 days were devoted to various games (Iso Ahola, 1980). Kraus (1971), following Aristotle thought that these wild and corrupt *Roman holidays* reflected an inability to deal with leisure and were the chief reason for the downfall of Rome. On the same point Iso Ahola (1980) inferred that extrinsic sanctions and rewards of the new holidays were detrimental to intrinsic motivation, He echoed Deci (1975) in saying that proper leisure meets the needs of individuals to feel competent and self determined, and that human behaviour is goal oriented, with people in an ongoing process of seeking and conquering challenges that leisure provides.

As discussed earlier, the Greeks engaged in a variety of physical, mental and social activities for continual self development. For them leisure was not time available to be employed, nor was it a means to an end outside and apart from itself. While they pursued physical and spiritual strength in order to defend the State, such a goal was never established as an explicit/extrinsic reason for leisure behaviour. Rather, their philosophers encouraged them to seek and conquer challenges through activities such as music and contemplation, to lead to feelings of competence and self determination - i.e. to become intrinsically motivated people through certain leisure activities that were considered both physically and psychologically beneficial to citizens.

The Romans in contrast were extrinsically sanctioned and rewarded, as inducements to participate in both physical (e.g., sports) and intellectual (music, theatre) activities. The sole purpose of participating in varied leisure activities was to build strong individuals who were able to vigorously fight for their state. The Romans were denied opportunities to seek and conquer challenges and to feel competent and self determined in their leisure.

During the last decade or so, social psychologists (e.g. Lepper, Greene & Nisbett, 1973; Deci, 1975) have demonstrated that once external rewards and sanctions are removed from activities (which were originally intrinsically motivated), people lose interest in them. Thus as the Romans had finally overcome their enemies, they decided that people no longer had to participate in those activities that were needed to prepare citizens for warfare. The Romans had only one option left, to turn to Roman holidays and thus to self destruction. Somewhat prophetically Iso Ahola (1980) points out that today, because universally, work has once again become the end and leisure a means to that end, the era will be characterised by the excesses of the *American holiday*.

An important consequence of the Roman experience according to Kraus, (1971) was that the early Christian church became increasingly critical of the Roman way of life. During the Dark and Middle Ages, which covered a total period of almost a thousand years until the beginning of the renaissance, many aspects of Roman life were forbidden. While shows and games were reported to have been carried on for a period of time in the eastern empire after the fall of Rome, the spectacles and organised shows of imperial Rome were at an end. They were replaced by a new morality which had its roots in the monasteries that were founded in the fourth through the sixth centuries in Egypt and the Near East and then spread to Europe. Leisure was strictly controlled within monastic life and monasteries became the centres of learning and industry. The doctrine of work became a means for purification of the spirit (Arnold, 1991). The idea that labour and toil should be glorified and that play and idleness were evil was the beginning of what was later to become known as the Protestant work ethic (Kraus, 1971). This countervailing reaction to the Roman life-style continued for centuries and according to Iso Ahola (1980) the period between the fall of Rome and the industrial revolution was characterised psychologically by two dominant features.

First, work became the central life interest, and this for extrinsic reasons. Whatever free time was available was used for recuperating from work so that one could continue to labour the next day. Second, marked social class differences arose with respect to the amount of free time and the types of leisure available to people. The problem was unchanged until the industrial revolution eventually made it possible for people from the lower classes to have some free time. Qualitative differences between people's free time pursuits were not eliminated though, and the Protestant work ethic was strengthened rather than weakened.

The accumulation of wealth by merchants led to a division to which the economist Veblen (1899) attached the notion of free time and the description of *leisure class*, the newly wealthy industrial capitalists. From that time leisure became synonymous with free time and unproductivity, i.e. freedom from the necessity to work, even perhaps an unwillingness to work, and laziness. Many became disdainful and envious of the wealthy who had freedom from toil, and who used leisure for display and consumption (Kraus, 1971). Veblen influenced writers in the field of recreation and leisure and led them to the common definition of leisure still being published in Fairchild's Dictionary of Sociology (1975) describing leisure as the time remaining after the necessities of life have been attended to. It introduces the notion that leisure is time, that can be quantitatively determined, time set aside as *leisure time* and *free time*, and a commodity to be used, bought or sold (Kelly, 1991). Therefore time available after work becomes the central issue in the definition of leisure, and not the opportunity for the contemplative development of the person as was originally proposed in Ancient Greek times.

While modern societies remain distinctly different from Ancient Greece and conspicuously similar to Ancient Rome it is important to note that the theme of the present study, of leisure and health, had its historical antecedents in ancient Greece and Rome. At different times in humankind's history there has been a recognition of the benefits of a life of individual development through leisure, and according to Arnold (1991) it is highly instructive to note that both leisure and play in the Greek and Roman sense were linked closely to education or learning. It can be said that, paradoxically we are living in an age of leisure rivalled only by the early Greek Civilisation. People are spending billions of dollars on the continuing pursuit of happiness through leisure

involvement, but according to Hayes, Brightwell and Antozzi (1984) this pursuit of leisure has spawned an *Age of Boredom*, full of anxiety and its bedfellows of tension and stress. Modern definitions and experiences of leisure have diverged from the Aristotelian, and it is to a consideration of these definitions this chapter now turns.

Definitions of Leisure

Definitions of leisure abound. A range of authors from philosophers to scientists have studied leisure as time, activity, state of mind and experience (Arnold, 1991). Researchers in the 1950s and 1960s typically defined leisure as time off work, and they directed their efforts to the nature of behaviour during the non work phase of the daily life cycle. Examples of definitions that typify this perspective include:

> "Leisure then, is a block of unoccupied time, spare time, or free time when we are free to rest or do what we choose"
>
> (Brightbill, 1960, p.4).

> "... leisure refers to free time, that is, from the need to be concerned about maintenance".
>
> (Gross, 1963, p.41)

By the 1970s attention had shifted to the psychological motives and benefits, derived from participating in different leisure activities. Leisure was defined as freely chosen activity - a time without obligations, a vessel, a space which can be filled by numerous activities that provide satisfactions for the individual. Examples of this type of definition include:

> "Leisure is activity - apart from the obligations of work, family and society ..."
>
> (Dumazedier, 1974, p.133)

> "..... an activity which involves pursuit of truth and self understanding".
>
> (Gray, 1974, p.42)

These definitions were based in the main on time and budget activity analysis, but they did not say why certain leisure activities were undertaken, nor did they describe the benefits gained from participation in such activities. As a result the 1970s and

1980s saw an increased research interest in exploring the subjective and qualitative dimensions of leisure (Harper, 1981). Dimensions that received attention included, for example, perceptions of freedom, intrinsic - extrinsic motivations for leisure, leisure attitudes, the psychological structure of leisure satisfactions and leisure attributes. Examples of this type of definition include:

> "Leisure is concerned primarily as a condition sometimes referred to as a state of being, and attitude of mind or a quality of experience...."
>
> (Cushman & Laidler, 1990, p.1)

> "Leisure then ... is experience with a variety of components that can be identified and analysed".
>
> (Kelly, 1987, p.49)

Neulinger (1974), on the other hand, continued the distinction between *subjective* (or psychological) conceptualisations of leisure as a state of mind, and *objective* (or residual or sociological) conceptualisations of leisure as free time or non work activity. He argued that because leisure is only a subjective state of mind, it was possible for work also to be leisure i.e. what is play for some represents work for others, and vice versa. He also suggested that activities did not have to be freely chosen to be experienced as leisure. Iso Ahola (1976) however suggested that leisure could be defined in *either* objective or subjective terms i.e. objectively, leisure defined as time left over after work, and subjectively leisure as a subjective state of mind - the personal perception and inference of quality, quantity and participation in imagined or actual activity. Iso Ahola (1980) went on to argue that it is misleading and self defeating not to accept the difference between work and non work. The fact that work and free time might have common elements (e.g. both perhaps intrinsically motivated) does not, according to Iso Ahola, mean that individuals do not make a distinction in their minds between the job and free time. If a person sees work and leisure time as equally satisfying, there is no reason to assume that the two things have become one and the same. Thus Iso Ahola (1980) concludes that both objectivity and subjectivity have to be taken into account in any definition of leisure. Without free time a person cannot have leisure. Free time then, refers, according to Iso Ahola, to the quantitative aspects of time left over after work, and leisure to the qualitative aspects of free time and activities performed during it. Even Neulinger appears to accept this idea, agreeing that no matter

what leisure conceptualisation one adopts, free time is always a necessary, although not necessarily sufficient, condition for leisure (Neulinger, 1974) - and there is much research evidence to confirm that leisure is present in a work-oriented, time oriented society (Parker, 1971; Neulinger, 1974, 1982; Iso Ahola, 1976, 1979).

In attempting to understand individual subjective preconditions and/or components of leisure, research has focused on the perceptions of the individual, not on the activity per se (Csikzentmihalyi, 1975; Iso Ahola, 1980; Mannell, 1980; Neulinger, 1981; Unger, 1984; Shaw, 1985; Tinsley & Tinsley, 1986; Ingham, 1986). But the situation or context remains salient to perceptions of leisure and the meanings and interpretations associated with it - i.e. time and the opportunity presented with it can occur in any time space (Howe & Rancourt, 1990). Consequently while some may conclude that it is inappropriate to equate perceived free time with leisure time and/or non work time, it is still in a framework of perceived free time that most people engage in personally meaningful activities and so experience leisure. As Shaw (1990) suggests, perceived free time is an important factor to consider when exploring the role of leisure in relation to work stress. Free time can be defined as the period when many, if not all, persons will feel their behavioural choices are least constrained and they are most likely to have the opportunity to experience leisure (Neulinger, 1984).

The intention of this review was not to cover the vast array of literature on defining leisure. It has been limited to identifying the major theoretical themes that have influenced contemporary approaches to the definitions of leisure. It has provided the context for developing a definition of leisure to be used in this study. To this end it has been necessary to limit its focus. Definitions of leisure as time, activity and as a state of mind have been outlined and research evidence presented for defining leisure both objectively and subjectively. The definition of leisure as that experience associated with self determined participation in any activity/experience that occurs in time away from work is the guiding definition of leisure adopted in this study. Such a definition takes into account; (a) the context of leisure, that is, free time away from obligated work, in this case, paid work; (b) the fact that leisure occurs through freely chosen activity or non activity, and (c) is what people experience.

Just as leisure can be defined in different ways, leisure can also vary in terms

of the functions it performs and it is to the multi-dimensional nature of leisure this chapter now turns.

Dimensions of Leisure

Leisure has been categorised in a variety of ways as active-passive, participant-spectator, solitary-social, indoor-outdoor, in the home outside the home, mobile-immobile, social, art, games and sport. In recent years there has been some considerable interest among leisure researchers to categorise leisure activities empirically in terms of factors, dimensions or clusters. Using a range of samples, and statistical procedures, this has resulted in the classifying of leisure activities according to participation rates (Bishop, 1970; Yu & Mendell, 1980; Gudykunst, Morra, Kantor & Parker, 1981); preferences (Nias, 1977; Mills & Bledsoe, 1981); attitudes toward leisure (Neulinger & Breit, 1969); leisure needs (London, Crandall & Fitzgibbon, 1977; Tinsley & Kass, 1979); and satisfactions derived from leisure (Hawes, 1979; Beard & Ragheb, 1980; Pierce, 1980). Others have addressed topics such as the psychological dimensions of leisure (Iso Ahola, 1979), factors affecting leisure definitions (Neulinger, 1974; Iso Ahola, 1979; Shaw, 1985) and factors contributing to the leisure experience (Mannell, 1980; Csiksentmihalyi, 1981; Kleiber, Carson & Csiksentimahalyi, 1986; Mannell & Bradley, 1986).

From these results, leisure emerges as a multi dimensional concept. Few attempts however have been made to integrate these findings, to search for common factors or to combine research methods. As a result it is difficult to generalise the findings across individuals or samples or to attempt to make cross factor comparisons. One of the aims of this thesis is therefore, to identify those dimensions of leisure that can be replicated across samples and that reflect the importance of leisure as a strategy for coping with work stress. For that purpose it would seem necessary to use a motivation - needs related framework to explore those dimensions identified by researchers. The remainder of this review will therefore be limited to exploring the different dimensions of leisure that emerge when a motivation - need related framework is adopted. It will review past research into leisure motivations including the related concepts of needs and satisfactions, and then it will use a motivational framework to

explore the use of leisure as a mechanism for coping with work stress.

Defining the Area

Researchers have adopted several different approaches when exploring leisure dimensions from a motivational perspective - these include classifications based on reasons why people do specific leisure activities; what personality needs might be fulfilled by leisure; what motivates leisure activities, and what satisfactions or enjoyment are actually derived from leisure. The different approaches however have much in common, because terms like needs, reasons, motivations and satisfactions have all been used interchangeably and are all apparently appropriate for use in this area of study (Crandall, 1980). Notwithstanding this, Driver (1976) has argued that the area should be more precisely defined by using psychological outcomes as the defining construct. In this way needs, reasons and motivations can then be looked at as factors that cause leisure to be sought, while satisfactions, need satisfaction and psychological outcomes can be classified separately because they result from leisure.

Motivational Approaches to Understanding Leisure

Lundberg, Komarovski and McInerney (1934) were the first researchers to ask people why they participated in or enjoyed leisure which can be classified in need related terms. They developed a list of eight reasons why their sample of 796 high school students enjoyed their favourite activity. Using a similar approach and a similar sample, Gump and Friesen (1962) found that the 176 respondents provided 857 reasons why they enjoyed a set of extracurricular activities. These could be grouped into 39 categories, the main ones of which were competence development, novelty and social contact. Olds (1964) followed the same approach, and with data from thousands of high school boys on why they liked their leisure, he established a list of 21 reasons including to be with a person of the opposite sex, to get away from people, to get physical exercise and to use the mind.

In their studies Donald and Havighurst (1959) and Havighurst (1961), found eight frequently mentioned explanations for the importance of leisure. These were, just for the pleasure of it; is a welcome change from work; brings into contact with friends;

provides a new experience; gives a chance to achieve something; gives a feeling of being creative; benefits society; and makes the time pass.

For all these studies the standard approach was to use content analysis to reduce the reasons given into a limited number of categories that best reflected the research question asked. Subsequently other researchers used factor analysis as a technique for exploring leisure dimensions but the studies using this technique were primarily concerned with leisure participation rather than leisure needs (London, Crandall & Fitzgibbons, 1977). The different approaches and different research objectives make the studies difficult to compare, but a number of themes can be identified. The first of these is that the factors that have been identified could be broadly described as having either active or passive qualities. For example, London, Crandall and Fitzgibbons (1977) in a factor analysis of 30 activities in relation to their need satisfying attributes, found three factors which were described as sports (active), cultural-passive, and productive-intellectual. However two methodological shortcomings limit the findings of this study - i.e. a) the sample size of 83 gave a low item-sample ratio and raised doubts about the stability of the factor solution, and b) the generalisability of the findings is also questionable because the sample was drawn from a mostly male population of university students.

Hawes (1979) used factor analysis on data from subjects who rated their favourite leisure time pursuits in terms of their importance in providing satisfaction, and found differences for males and females with five factors for females and four for males. For females, the factors were (a) newness and relating to people; (b) mental activity; (c) physical activity; (d) passive contemplation; (e) seeking the unknown and overcoming challenges. For males the factor structure to emerge stressed (a) active physical competence seeking; (b) a concern and desire for recognition; (c) contemplation; (d) living life to the utmost - overcoming challenges. The study however did not give much in the way of information on derivation and replication of the different factors. Another limitation was that while items within a factor indicated that the satisfactions were perceived as comparable in importance, the importance of any one single factor was not assessed.

Beard and Ragheb (1980) also used factor analytic techniques to investigate the

degree to which leisure activity satisfied a range of needs, and they found six factors i.e. psychological, educational, social, relaxational, physiological and aesthetic. But the researchers failed to report on the relative significance of the different factors. Pierce (1980) asked participants to rate the degree to which their favourite leisure activity was satisfying, and they found four satisfaction dimensions namely, intimacy, relaxation, achievement and power. But this study offered little insight into the overall extent to which any of the four factors could be derived from the respondent's leisure.

An attempt to integrate the area was held in 1977 at a conference at the University of Illinois where a list of 17 needs or groups of needs were generated which were deemed to be important to leisure and were felt to be fairly discrete and comprehensive. These categories included: enjoying nature, escaping civilisation; escape from routine and responsibility; physical exercise; creativity; relaxation; social contact; meeting new people; heterosexual contact; family contact; recognition; status; social power; altruism; stimulus seeking; self actualisation; achievement, challenge; killing time; avoiding boredom; intellectual aestheticism (Crandall, 1980). While research has continued into looking at the way some of the motives may be related for some populations, very little of it has been published.

Caltabiano (1994) reported the only study which has assessed leisure dimensions in terms of their stress-reducing properties. Respondents were given a "Less Stress Inventory" which required them to rate 83 leisure activities on a scale from 0-100 in terms of their usefulness in reducing stress, with the score of 100 representing an activity extremely useful for reducing stress. Activities were derived on a theoretical or an a priori basis, and factor analysis was used to explore whether any underlying structure was present in the data. Caltabiano (1994) obtained three factors. The first was characterised by outdoor active sport activities such as trail-bike riding and water-skiing; the second reflected an interpersonal theme, and was labelled social leisure, and the third was defined as cultural-hobbies leisure. Caltabiano (1994) claimed that a range of empirical and theoretical evidence exists to support the conceptual validity and importance of the first and the third of these factors (Ulrich & Simons, 1986; Gratton & Tice, 1989; Froelicher & Froelicher, 1991; Wankel & Berger, 1991). In support of the second social leisure factor, Caltabiano argues, is the empirical evidence from Bolger and Eckenrode (1991) and the theoretical perspective from Coleman and Iso Ahola

(1993) for accepting that it had stress reducing benefits. Bolger and Eckenrode (1991) found for example that discretionary forms of social contact through leisure were more beneficial in buffering stress than were obligatory contacts at work and school. Coleman and Iso Ahola (1993) on the other hand posited leisure-based social support as a possible mediating influence on the stress-health relationship.

However the usefulness of physical activity or social activity as the most appropriate means for coping with work-related stress is not at all clear. In a separate study, for example, Coleman (1993) found no support for the buffering effect of leisure based social support against the impact of stress on health. An earlier study (Kabanoff & O'Brien, 1986) found that high stress in demanding jobs was more likely to be associated with passive recuperative leisure attitudes and behaviours. Managers in high stress jobs may in fact not find trail bike riding, water skiing and jogging particularly stress reducing. Similarly their needs for sociability may be lower when associated with higher stress. These diverse findings suggest that stress/leisure relations are not, as Caltabiano infers, quite so universal but vary by different occupational groups and the sorts of stressors encountered.

However the research findings do show that leisure functions as a multi-dimensional construct and that the different dimensions reflect a number of different foci. It endorses leisure in terms of its ability to satisfy needs, as an important area of study. Recent research has focused on the dimensions of leisure that are perceived to satisfy one need - the need to reduce stress. The evidence that is available suggests a link between stress, and coping. But whatever the leisure contribution to health and well-being, further research is necessary to investigate and identify those leisure functions or dimensions that (a) have a stress-reducing capability and (b) can be replicated across samples. As this study is specifically dealing with work-related stress, it is appropriate at this point to consider the nature of the relationship between work and leisure, before moving to the next chapter which describes the methodology used to explore the role of leisure as a coping strategy.

Work and Leisure

Leisure and the Changing Nature of Work

The view that the relationship between work and leisure forms a major social and intellectual problem, is according to Wilensky (1960), largely a post-industrial phenomenon. Leisure as we know it today can be said to be a product of the industrial revolution when the nature of work radically changed. Industrialisation resulted in a major segmentation of roles between the economic, and the non economic and work became spatially distinct form other role systems of kinship, religion, politics and education (Kabanoff, 1980). Thus the previously highly integrated systems of personal roles became disrupted and led to the dualism of work and leisure. Work became more structured, occurring at the same time and place throughout the year. Work tasks became divided into smaller tasks and it became common for such work to be carried out in factories. The home was no longer the work environment, and as a consequence of this shift the notion of nonwork as opposed to work came into being. The reduction of working hours, increased economic opportunities and a longer life span gradually led to leisure as we now know it (Parker, 1976; Mercer, 1980).

As further changes in the nature of work occurred, such as increased automation and the demise of routine jobs, many authors subscribed to the view that the time allotted to leisure would increase and time allotted to work decrease (Ellul, 1964; Dumazedier, 1967; Kahn & Weiner, 1967; Caldwell, 1974). While this may have happened for some in one form or another, it is no longer fashionable to talk about the dawning of a leisure society, and writers who once acknowledged the possibility in the 1970s now take a very different view (Veal, 1987).

While societal conditions have potentially increased the opportunity for leisure as a means of human expression, a number of factors converge to stem such a development. Murphy (1974) identifies three such factors. The first is that many people have an inability to satiate their material desires and so spend more time working to sustain their lifestyle. Secondly coping with the increase and complexity of societal change has blunted the leisure potential. Thirdly, increasing demands on labour has seen the average number of hours at work rise (Stamp, 1991). In the United States (*Time*

International, 24 April, 1989) the amount of leisure time, that is time free from work and from other obligations, had shrunk by 37% since 1973. Over the same time the average working week including commuting time, had moved up from less than 41 hours to nearly 47 hours.

Corresponding changes have also occurred within employment systems. Organisations are being radically transformed to meet market and strategic demands (Callan, 1993). Organisational roles and lifestyles that are already hectic, demanding and stressful are destined to become even more hectic as a result of innovation and change (Mintzberg, 1973; Yukl, 1989). Job loss, relocation, increased workloads, upskilling and functional flexibility are all now part of organisational life. The promise of a leisure age and the vision of the post-industrial age, where life would be easier, has not been realised. For some sectors of society those changes have led to a "tension epidemic" (Hayes, Brightwell & Antozzi, 1984). It is likely that for many, cumulative stress in the workplace will affect mental health and productivity, reduce effectiveness, and in turn, the efficiency of the organisation within which they work (Callan, 1993).

Recently the American Psychiatric Association (APA) (1994) has legitimised the concept of stress related illness by including specific stress conditions in its classification system, *The Diagnostic and Statistical Manual of Mental Disorders.* Finally, sanction has been given in yet another way by the courts when dealing with workers compensation claims. In Japan there have been 20 successful cases against companies whose employees have been killed while working beyond the call of duty (Stamp, 1991). More recently in New Zealand, (Rivers, 1994) it was stated that under the *Health and Safety in Employment Act (1992)*, school boards might be liable for causing psychological stress if they do not act to reduce stress factors in schools.

Increasing tension, anxiety and stress brought about by a rapidly changing work environment has changed the way in which leisure time is used. The restorative values of the traditional weekend, and days off, are no longer there. People jam into that time an increasingly active social life planned to the nth degree (Stamp, 1991). When time-out *is* taken, it does not lead to restorative (ideal) leisure, but to an increase in maintenance time, i.e. time absorbed by personal hygiene, transport, household duties and care of children, and there is the feeling of being totally exhausted at the onset of

the working week (Stamp, 1991). Consequently increasing concern is being shown in organisations for the promotion of individual health and well-being through the management of stress. As individuals and corporates have become aware of the deleterious effects of this kind of lifestyle on both the individual and the organisation, more and more people and organisations are looking to leisure and wellness programmes. While it appears likely that work will retain a central role for some time to come, it is clear that for some sectors in society there is a lack of meaningful balance between work and leisure.

Work-Leisure Relations

One of the reasons for studying the relationships between work stress and leisure noted earlier in this chapter, stems from the fact that work and leisure have traditionally been viewed as related and as interacting in one of three different ways (Staines, 1980) i.e. spillover, compensation, and segmentation, each of which will now be examined further.

The Spillover Hypothesis.

The Spillover or generalisation hypothesis describes the situation where work attitudes transfer or spillover into other life experiences such as leisure. Positive correlations are predicted between work and leisure attitudes. The spillover hypothesis was first systematically tested in Kornhauser's (1965) classic study, *Mental Health of the Industrial Worker.* According to Kornhauser, workers in routine, repetitive jobs had narrow leisure interests, little concern with self expression and exhibited little interest in larger social issues. The more complex the job with respect to skill and associated attributes of variety, responsibility and pay, the better the average mental health. Kornhauser interpreted these findings as indicating a generalisation from work to leisure. More recently however, Kabanoff (1980) has warned that these results should be treated with caution because of a number of conceptual and methodological problems inherent in the study. Nevertheless a number of psychological mechanisms have been advanced to explain this spillover relationship. These include social learning processes, frustration - aggression (Seeman, 1971), and locus of control (Kabanoff & O'Brien, 1980). Kabanoff and O'Brien (1986) also suggest that stress may play a significant role as a

psychological mechanism that mediates the spillover relationship. Kleiber (1980) found for example that people in routine, repetitive jobs reported higher levels of stress-related symptoms such as psychological fatigue and depression, and that these symptoms were found to be associated with a higher frequency of passive, solitary activities.

The Compensation Hypothesis.

The compensation hypothesis suggests that individuals gravitate towards off-work activities which are counterposed to work, to make up for the deficits in their work. It predicts negative correlations between work and leisure attitudes, suggesting that leisure offers a reaction or compensation for work which is stressful monotonous or unsatisfying. Stress associated with under-utilisation at work is therefore held to energise people's non work behaviour and direct it toward leisure activities that supplement restricted opportunities for self expression and involvement at work (Kabanoff & O'Brien, 1986).

More contemporary versions of the compensation hypothesis have been developed to include what Kabanoff and O'Brien (1986) describe as reactive compensation. The reactive compensation theory suggests that where stress is an outcome of overload or over-utilisation as is more likely in managerial jobs, there will be a tendency for those individuals to prefer passive, recuperative leisure activities in reaction to the extremely demanding nature of their jobs. Kabanoff and O'Brien (1986) did in fact find that higher stress in demanding jobs is associated with passive recuperative leisure attitudes and activities suggesting a reactive-compensatory relationship. Another study of the interaction between aspects of physical leisure and work stress across the United Kingdom and Germany (Kirkcaldy & Cooper, 1993) found that German managers exhibited clear positive relationships between psychological and physical health and avoidance of potentially aggressive (competitive and combative) sporting pursuits.

However, the relationship is not always that simple. Among professionals, stress it seems, is associated with a leisure pattern where escape from routine is sought, but so also are sociability, variety, and stimulation. That is, there seems to be a mixed active-reactive pattern. Again it is Kabanoff and O'Brien (1986) who propose that

stress might only produce a tendency towards passivity, recuperation, or withdrawal leisure patterns when quantitative overload or qualitative overload are the main stressors involved. Professional jobs may not of course have as consistent or as high levels of overload as is encountered in managerial jobs, thereby reducing the tendency toward a reactive - compensatory leisure pattern.

Other factors will also influence the nature of the stress/work/leisure patterns. These would include different job characteristics producing different kinds of stressors and stress symptoms (Parker & De Cotiis, 1983; Shaw & Riskind, 1983); different stressors and their associated symptoms may evoke different coping responses, which in turn, result in different leisure attitudes and activities (Cherry, 1978; Kabanoff & O'Brien, 1982) and psychological and sociological factors that affect a person's vocational and non work patterns of behaviour (Kabanoff & O'Brien, 1986). Nevertheless the research paves the way for exploring stress - leisure relationships and the links necessary to investigate the role of leisure as a significant coping behaviour.

Segmentation Hypothesis.

The segmentation hypothesis suggests that leisure and work represent independent, unrelated or 'neutral' areas. It predicts no association between work and leisure particularly in instances where job commitment is low and the deleterious effects of work are absent. Recent research lends support to this theory (Bacon, 1975; London, Crandall & Seals, 1977; Kabanoff & O'Brien, 1980). But again the relationship appears to be more complex, and cultural factors might need also to be invoked to explain differences. For example, Kirkcaldy and Cooper (1993) found that for their sample of British Managers, leisure style was unrelated to mental and physical health (segmentalism), and that there was some evidence of a preference for competitive and combative sporting activities as job pressures increased (spillover). German managers however exhibited clear positive relationships between psychological and physical health and avoidance of potentially aggressive (competitive and combative) sporting pursuits, a finding that supports the theory of "compensation" and indicates that the relationship between work and leisure style may also be moderated by culture.

It is clear that no unequivocal support exists for any one of the three hypotheses,

and this can be accounted for in part by methodological, conceptual and measurement difficulties (Iso Ahola, 1980). Kando and Summers (1971) called attention to the fact that because of the multi dimensional nature of leisure, the same person can experience spillover, compensation, and segmented relationships between work and leisure under different conditions. Kabanoff and O'Brien (1980), Iso Ahola (1980) and others have also stressed the fact that effects of the work situation on leisure participation and vice versa may well be moderated by cognitive processes or personality characteristics. They suggest that controlling for occupation and obtaining information about subjects' own reasons for their leisure participation may help to determine whether compensatory or spillover patterns are present for those facing the deleterious effects of work.

Leisure and Work

Although much has been written about the influence of work on leisure, relatively little attention has been devoted to the other side of this relationship - i.e. the effect of leisure on work. In nearly all the studies that have investigated the relationship between work and leisure it has been implicitly assumed that if these two areas of life are related it is because work exercises an influence upon the way in which people spend their free time (Prestonjee & Muncherji, 1989). But Anderson (1961) argues that it is leisure that imparts a meaning to work for the bulk of the industrial population; i.e. that people work in order to be able to do desirable things in leisure time, and it is this instrumental role which has come to give work a meaning in leisure-based lives. Dumazdier (1967) developed this line of argument still further in France, when he alleged that in recent times rather than their leisure being determined by the types of jobs that they do, people choose a job that would enable them to enjoy the type of leisure that they want. He asserted that in some places leisure is so central in the life of individuals in modern society, that industry is being obliged to adopt its own structure to accommodate leisure values.

There is some tentative evidence to indicate a person's leisure environment does affect their job satisfaction and performance (Iso Ahola, 1980). Specifically, very satisfactory leisure environments seem to be conducive to job satisfaction, and perhaps also to improved job performance. It appears that if a company provides recreation

services to its employees, their job satisfaction and performance increase (Hulin, 1969). Thus workers' satisfaction with recreational opportunities in a community and a company's interest in workers' leisure life are important determinants of job satisfaction and performance.

It is well established in the literature that job performance or productivity is positively (though moderately) related to job satisfaction (Argyle, 1972; Vroom, 1964). A long list of variables assumed to affect job satisfaction have been subjected to empirical research (see Argyle, 1972; Warr & Wall, 1975 and Locke, 1976 for a review). These variables as determinants of job satisfaction for the most part have been assumed to reside in the job only. In this approach to job satisfaction, researchers have totally overlooked the contribution of the "off the job" and leisure related factors. It is not uncommon to find people who say that they are able to put up with their "lousy" job because of off the job and leisure opportunities (Iso Ahola, 1980). Although they may dislike their work, the leisure opportunities offered them in the community may compensate for their low job satisfaction.

Many authors assert that leisure must now be viewed as one of the more critical components of overall well-being (London, Crandall & Fitzgibbon, 1977; Flanagan, 1978; Ragheb & Griffith, 1982; Caldwell & Smith, 1988; Stamp, 1991; Coleman, 1993). Clearly widespread societal change is radically altering the traditional face and place of work in the Western World and creating pressure and consequent strains on the job that induce stress-related illnesses (Hall & Slavery, 1986). Workers are now taking legal action against organisations for worker's compensation in cases of job-induced stress (Ivancevich, Matteson & Richards, 1985). Employers are investing large sums of money on physical fitness and wellness programmes in an effort to manage the effects of stress in the workplace. However, their value in reducing stress and increasing productivity have yet to be firmly established, (Falkenberg, 1987) particularly as the evidence shows, high stress managers are shown to prefer passive recuperative leisure.

If our understanding of work stress is to advance, then leisure is an area that should be given the empirical attention it deserves. The use of leisure as a strategy for coping with work related stress and its role in the work-stress relationship can only contribute to our understanding of the stress process and provide an opportunity to

explore the explanatory potential of such an approach. However, it must be shown that leisure can in fact provide real health benefits if it is to be realistically seen as an option for reducing stress. It is with consideration of the claimed health benefits of leisure and the functions which leisure is believed to provide as a means of coping with stress that this chapter now concludes.

Leisure and Health

The connection between stress and health has been known for some time (Theorell, 1974; Cohen & Hoberman, 1983; Hamilton Smith, 1992). It has also long been assumed and shown through research that leisure plays a role in well-being and in providing a range of health benefits (Patrick, 1945; Kornhauser, 1965; Brooks & Elliot, 1971; DeCarlo, 1974; Langer & Rodin, 1976; Iso Ahola & Weissinger, 1984; Caldwell & Smith, 1988; Chalip, Thomas & Voyle, 1992). One way in which leisure is believed to make a contribution to people's well-being, is by helping them to maintain or improve their physical and mental health by reducing tension and stress (Patrick, 1916; Menninger, 1948; Haun, 1973; Driver, 1975; Iso Ahola 1980). It is implied and argued in the literature that leisure produces mechanisms for coping with tension and stressful events (Driver & Knopf, 1976; Reich & Zautra, 1981; Weissinger & Iso Ahola, 1984; Gunther, 1987; Driver, Tinsley & Manfredo, 1991; Ulrich, Dimberg & Driver, 1991; Coleman, 1993; Caltabiano, 1994). Now is the time to explore the theoretical and empirical evidence to support the belief that leisure contributes to health by providing strategies for coping with stress.

Definitions of Health

Health according to Iso Ahola (1988) is as elusive a concept as leisure. It has been defined both narrowly or objectively and broadly or subjectively. The narrower definition is consistent with the biomedical view that conceptualises health as the degree to which people are not suffering from illness. In a broader holistic sense, health refers to a state of well-being or wellness which encompasses emotional, physical, social and spiritual factors (Headley, Holtstrom & Wearing, 1985; Caldwell & Smith, 1988). Such a definition is consistent with the four corner stones of Maori health that Durie (1985)

articulated i.e. te taha tinana (physical health), te taha hinengaro (psychological health), te taha wairua (spiritual health) and te taha whanau (community health). The World Health Organisation's (WHO) established definition of Health defines it as the complete state of physical, mental and social well-being and not merely the absence of disease (Downie, Fyfe, Tannahill, 1991, p2).

In the field of leisure, researchers have tended to focus primarily on the relationship between physical leisure activities and physical health - probably because physical health is relatively easy to define and measure, whereas mental health and social well-being are more abstract, difficult to operationalise and rely to a large extent on self report techniques. But the present study intends to focus on the psychological aspects of leisure and health. Although it is important to analyse relationships between leisure and broader conceptualisations of health, this study will as a matter of convenience, adopt the narrower definition of health. Like many of the studies of social influences (including leisure) on health it will adopt the illness symptomatology approach (Cohen & Hoberman, 1983).

Theoretical and Research Perspectives about Leisure, Health and Stress

Kornhauser (1965), De Carlo (1974) and Langer and Rodin (1976) all found that active leisure participation in recreational activities contributed to mental health and successful ageing. Patrick (1945), Brooks and Elliot (1971), and Yoesting and Christenson (1978) found that satisfactory leisure experiences in childhood were associated with psychological adjustment later in life. Iso Ahola (1988) continued this theme by arguing that a disposition toward intrinsically motivated leisure, is acquired through exposure to a variety of leisure experiences at a formative age. Neulinger (1982) proposed that leisure is essential to an individual's psychological health and he argued for a psychologically perceived state of leisure where individuals achieved a sense of meaning in life and increased well being, to combat the technological advances of society. He even went so far as to say that "leisure lack", i.e. the chronic contemporary absence of leisure" was equated with a state of diminished well-being (Neulinger, 1982, p58). Iso Ahola and Weissinger (1984) and Weissinger and Iso Ahola (1984) have argued that leisure as intrinsically motivated behaviour can optimise health, and Tinsley and Tinsley (1986) theorised that satisfaction of an individual's

psychological needs through leisure has an effect on physical health, mental health and consequently life satisfaction and personal growth. Altogether these theoretical perspectives and research findings point to a leisure association with increased well-being.

The potential of leisure to reduce stress has also been a common theme in the literature. Patrick (1916) used humankind's earlier evolution to substantiate his view that laughter, play, sport, profanity, alcohol and war were means of achieving relaxation because they relieved the stress and tension of life. According to Patrick that which is common to all these phenomena is the relief from the tension of modern strenuous life by means of a return to nature or a return to early and elemental forms of behaviour which offer rest or release. Menninger (1948) similarly identified recreation as an important mechanism for preventing mental and emotional illness by relieving life's stresses. Menninger found many forms of recreation, such as tennis, golf, badminton, bowling, chess, bridge and poker proved beneficial to the treatment of the mentally ill. Wilensky's (1960) work suggested that leisure could compensate for job boredom and dissatisfaction, thus eliminating the stress associated with the job. Like Menninger, Haun (1973) believed leisure was good because it released one from drudgery and allowed for creativity and happiness and was considered to promote good health in order to better cope with stress. Dumazedier (1967) also postulated that leisure could restore and relax the individual by creating a diversion from life's stresses.

Evidence from leisure motivation studies also points to leisure having a stress-reducing function. Outdoor recreation for example, has been offered as a leisure outlet for escaping the stressful conditions of urban living, notably crowding, noise and pollution (Driver, 1972; Knopp, 1972; Hollender, 1977; Wellman, 1979). A desire to escape from frustrating and stifling work were expressed as important motivations for hunting (Copp, 1975) and Spreitzer and Synder (1974) found that leisure acted as a medium for self identification and a compensation for ungratifying work experiences. Driver and Tocher (1975) proposed the motivation to escape as underlying the restorative aspects of the recreation behavioural continuum. Similarly, Iso Ahola (1989) has incorporated escape dimensions as stress reducers in his theory of leisure motivation, This theory, building on his earlier work on the psychological benefits of outdoor recreation, argues that individuals are motivated to seek intrinsic rewards on the one

hand and on the other to escape everyday problems and routines. Buchanan (1983) earlier reported a relaxation/stress reduction dimension to leisure which included physical pressures. Similarly the need for relaxation, associated with the need to reduce stress was also found to be satisfied by leisure (Beard & Ragheb, 1980; Pierce, 1980).

The notion of leisure as a means of escape from the pressures of work appears to be a popular theme promoted by a number of authors. According to Ulrich, Dimberg and Driver (1991) escape gives a sense of control to people who find themselves in stressful situations. The escape may be of a passive recuperative nature or an active challenging one, depending on the level of stress or arousal. At the one end leisure can be used to increase the arousal levels of those who lead unexciting or undemanding lives and at the other end it can provide a decrease in levels for those who lead hectic and busy lives. Thus many people seek relaxation during their leisure time (Gunther , 1987; Driver, Tinsley & Manfredo, 1991). There is considerable evidence then that leisure has the capacity to provide spontaneous relief from stress through escaping stressful situations. This capacity to escape is also linked to levels of arousal and enjoyment (Coleman, 1993). This process of escape has a psychological parallel in the coping literature. As noted in chapter four, in the general coping strategies identified by Folkman and Lazarus (1984), an effective coping strategy called escapism was included under the rubric of emotion focused coping. Escapism occurred when people diverted their thoughts away from the source of the stress to good times or fantasies (Folkman & Lazarus, 1984). On this basis leisure can be conceived of as an emotion focused strategy the individual engages in to reduce stress. If Lazarus's (1966) theory of coping is accepted, then leisure can be regarded as a form of emotion focused coping, associated with, for example, stressful life events such as work stress (see chapter four).

In addition to the literature advocating the direct effects of leisure as a coping behaviour and its overall influence on health, increased leisure participation has also been shown to buffer or moderate against more severe life crises (Wheeler & Frank, 1988; Caltabiano, 1994) and daily hassles (Reich & Zautra, 1981) on illness symptoms and depression. Results are somewhat less clear on the moderating effects of leisure when work stress is the dependent variable.

Few studies have explicitly looked at the relationship between leisure and work

stress. Where they have, the primary focus of these studies has been on the relationship between work stress and exercise or physical leisure (Sutherland & Cooper, 1990; Furnham, 1990). Stress management and health promotion programmes and exercise regimes have become popular mechanisms for reducing corporate health care costs and improving employee morale and productivity (Callan, 1993). Physical exercise as a component of leisure and as a treatment for health problems offers, "unique prophylactic, rehabilitative, and restorative properties", (Kirkcaldy, 1989, p.166-167). Listed among the supposedly psychological benefits of physical activity are: (a) positive mood states (Folkins & Sime, 1981; Morgan, 1985; Rodin & Plante, 1989 cited in Gronningsaeter, Christensen, Larsen & Ursin, 1991); (b) less anxiety and depression (Fasting & Gronningsaeter, 1986; Martinsen, 1990); (c) improved self concept (Hughes, 1984); (d) the facilitation of cognitive and perceptual processing (Kirkcaldy, 1989; Tomporowski & Ellis, 1986); (e) reduced cardiovascular morbidity and mortality (Oberman, 1985) and lowered blood pressure (Blair, Goodyear, Gibbons & Cooper, 1984).

However, Kirkcaldy and Siefen (1991) found that mental health professionals who exercised regularly did not reveal any significant differences on job satisfaction or work stress compared to non exercisers. Kirkcaldy, Cooper and Shepherd (1992) in a separate study reported that although male exercisers did not differ from non exercisers in their work attitudes, women exercisers did differ from non exercisers in terms of their being more competitive at work, and scoring higher on achievement motivation, work ethic, and mastery. Jex, Spector, Guadanowski, and Newman's (1991) research investigated the relationship between exercise and employee responses to work stressors. They found that exercise was positively associated with physical symptoms. However this may be attributed to injuries resulting from the exercise itself. Using a sample of German and British managers and executive personnel, Kirkcaldy and Cooper (1993) investigated the relationship between work stress and physical leisure. They found no evidence to suggest that the amount of time invested in recreational activities was associated with job satisfaction or health outcomes. Nor was there any indication that exercisers were better able to cope with job related sources of pressure. No direct or moderator effects of exercise on the health variables was found.

These results do not on the surface appear to support the claim that leisure

affects health and particularly that regular sport participation promotes health and ameliorates the potentially deleterious effects of work stress. However the authors (Kirkcaldy & Cooper, 1993) acknowledge some methodological shortcomings. Perhaps the most important of these was that items of leisure activity were limited to sport and games, hence, alternative stress-attenuating and stress-compensating recreational activities such as cultural-hobbies remain unconsidered. This is the case with most of the studies cited and very little has been done looking at the notion that more passive, recuperative reactive leisure strategies may be preferred when coping with the work stressor-strain relationship (Steffy, Jones & Wiggins Noe, 1990).

Research into work stress and more general leisure indicates that the type of leisure pursuit may be important to its success in relieving stress (Kirkcaldy, Cooper & Shepherd, 1992). Steffy, Jones and Wiggins Noe (1990) pointed out that it may be that reactive coping moderates or has a direct effect on the stressor-stress relationship. Life style and health habits it appears, may nullify the physical arousal and emotional tension that occurs in stressful situations, and may directly reduce anxiety, depression and psychosomatic distress.

In summary, the association between leisure and health has been alluded to for some time (Neulinger, 1982; Iso Ahola & Weissinger, 1984; Tinsley & Tinsley, 1986). One of the common themes arising from the literature has been the potential of leisure to reduce stress (Patrick, 1916; Menninger, 1948; Dumazedier, 1967; Driver, 1972; Haun, 1973; Iso Ahola, 1989) through short term process mechanisms incorporating escape, enjoyment and usually a reduction of the level of arousal (Gunther, 1987; Driver, Tinsley & Manfredo, 1991; Ulrich, Dimberg & Driver, 1991; Coleman, 1993). Researchers have shown that leisure is a behaviour that individuals appear to adopt to deal with the consequences of stressful events (Spreitzer & Synder, 1974; Copp, 1975; Hollender, 1977; Wellman, 1979) and as such it can be considered a coping behaviour. Furthermore, to the extent that escape is identified as a dimension of coping (Lazarus & Folkman, 1984) leisure may be seen as a form of emotion focused coping which may have both a direct effect and a moderating effect on the stress-health relationship (Patrick, 1916; Menninger, 1948; Haun, 1973; Reich & Zautra, 1981; Wheeler & Frank, 1988; Caltabiano, 1994). However the results are less clear on the moderating effects of leisure when work stress is the dependent variable. The nature of the relationship

between leisure and work stress is clearly identified as one that requires further empirical investigation.

Since the manner in which leisure is defined has implications for how it is researched, definitions of leisure have been presented and evaluated. These included leisure as residual, (time leftover after work and obligations are met), leisure as activity and leisure as a state of mind. It was argued that the subjective experiencing of leisure for most people is related to such contextual dimensions as time and activity and not just psychological perspectives (Shaw, 1984). Thus leisure was defined for the purposes of the present study as that experience that occurs through activity (active or non active) in time away from work.

The need to assess the dimensionality of leisure was also emphasised, and a motivational - need related framework was used to explore the dimensions identified in this area. Although different factors are derived to represent the dimensions of leisure, classification of motivations or needs or even activities tend to reflect either the passive or active nature of leisure in terms of their focus.

The history of leisure has also been presented, indicating that throughout history leisure has been valued for its relaxation and educational qualities. The changing nature of work and theories of work/leisure relations have indicated that stress may be a potentially important mechanism underlying the relationship between work and leisure.

The linkage between leisure and health present clear evidence for the health benefits of leisure, especially its potential to reduce stress. All these factors would suggest that to a greater or lesser extent, stress might be a factor in shaping people's leisure needs and preferences. Yet despite the increasing attention given to the nature of coping strategies employed by people to deal with stress, (Pearlin & Schooler, 1978; Dewe & Guest, 1990) leisure as a coping behaviour has received little attention. The role of leisure, its function as a coping strategy and its type of effect are all issues clearly identified in the literature as having explanatory potential. Leisure as a means of coping with work-related stress is therefore an important aspect of the stress process that needs further investigation.

Summary: From Literature Review to Research Directions

From the literature review above it is possible to derive expectations about the different relationships that are to be explored. The approach taken here is to identify broad research objectives and where possible associated predictions which the study may examine.

1) An assumption of the present study is that certain work stressors will reflect the current changes occurring in the education system. It is expected that factors similar to those found in Cooper and Kelly's (1993) study will emerge, that reflect traditional work stressors for head teachers such as work overload and dealing with staff and students, but that there will also be new stressors reflecting the changes introduced by the educational reforms.

2) The literature suggests that coping strategies can generally be classified as either problem focused or emotion focused. This research explores whether those classifications are present in these data and the context in which particular coping strategies are used. The literature is mixed about whether all coping strategies are functional (Parasuraman & Cleek, 1984) but there has been a suggestion in the literature over a period of time (Cooper & Marshall, 1976; Roskies & Lazarus, 1980; Menaghan & Merves, 1984; Aldwin & Revenson, 1987; Nowack, 1989) that adaptive behaviour (problem focused) is developmental and can lead to a sense of achievement and that maladaptive behaviour (emotion focused) in so far as it does not deal directly with the problem, is not likely to dissipate the individual's anxiety. However more recently evidence suggests that if there is nothing one can usefully do about the situation then one might as well conserve effort and direct attention elsewhere (Shinn, Rosario, Morch & Chestnut, 1984; Long, 1993). In this case emotion focused coping may be the most sensible choice. It is expected then, that particular kinds of workplace stressors may lead directly to particular ways of responding and that the study will allow some statement to be made regarding the role of coping behaviours and their relationship with particular work stressors and stress reactions.

3) Stress researchers have proposed and investigated a number of individual difference variables as moderators of individuals' responses to role stressors, (Cox & Ferguson, 1991; Burke & Greenglass, 1993) but very little attention has been focused on the relationship between work stress and leisure (Kirkcaldy & Cooper, 1993). Although no research has typically centred on the role of leisure in reducing certain types of stress, leisure motivation research provides some evidence for leisure fulfilling a stress reducing function (Driver, 1972; Knopp, 1972; Wellman, 1979; Iso Ahola, 1989). As a first step this research will explore the dimensions of leisure motivations that can be replicated in relation to coping with stress. The next step is then to explore the role these dimensions of leisure have in the relationship between stressors and stress reactions.

4) Views by Patrick (1916), Menninger (1948), Haun (1973), Iso Ahola and Weissinger (1984), Weissinger and Iso Ahola (1984), Coleman (1993) would predict that leisure will act as a stress moderator. Leisure could also be conceived of as a "coping behaviour" the individual engages in to reduce stress (Caltabiano, 1994). If, as Latack (1984) suggests, as stress increases individuals engage in more frequent use of emotion focused coping in an attempt to alleviate the symptoms rather than resolve the stressful situation, then it could be argued that as stress increases, leisure becomes more important as a form of emotion focused coping. From the literature it appears that leisure can potentially have both direct and moderating effects on the stressor-stress reaction relationship. Both these conditions will be tested to in order to identify the degree of support that may be found for the role of leisure as a coping strategy. Kabanoff and O'Brien, (1986) in a study of stress and the leisure needs and activities of different occupations, found that depending on the nature of the work stress, active and passive leisure had different functions. On the basis of their findings that managers preferred passive, solitary leisure, it is predicted that their result could be replicated here for the present managerial sample.

5) Caspi, Bolger and Eckenrode (1987) and Brief and George (1995) noted that certain stressors and coping strategies may have quite different relationships with different outcomes. By using a range of outcome measures, the present study aims to explore the above premise. By not measuring a range of outcomes, one

could conclude, somewhat erroneously, that a particular stressor has little effect, when in fact it may produce a very specific effect which has just not been measured (Dewe, 1991a). Newton (1989) makes the point that outcome measures traditionally narrowly conceptualise stress. The expectation here is that by using a range of outcomes, the relationships between particular stressors and outcomes can be more fully explored. Those relationships may then be moderated by different types of coping, with the literature suggesting that problem focused coping will be more likely to be associated with stressors where there is some likelihood of control, and emotion focused coping being associated with those where there is little control (Dewe & Guest, 1990). In chapter six the methodology chosen to collect the data and examine the issues raised in this chapter and in the previous chapters will be presented.

Chapter 6 - The Research Design

This study set out to investigate the degree of stress involved in the job of managing an educational institution in the nineties in New Zealand, during the implementation of major educational reforms. It sought to identify the sources of such stress, and the coping strategies adopted by the managers, (principals and deputy principals) of secondary schools who were being obliged to cope with changing demands made on them. More particularly the study set about investigating the role that leisure played in the lives of the managers in coping with the stress deriving from their work. The principals and deputy principals were surveyed, and the data derived from their responses were used to explore relationships between stressors, coping, leisure and stress.

The Research Method

The survey research method was the chief vehicle of this project. It involved the development of an extensive mail questionnaire through a three stage process. The first stage consisted of a series of focus group interviews with 27 state secondary school principals and deputy principals who represented a variety of institutions in terms of location and size. Sources of stress and stress effects were probed, ways of dealing with them were identified, and a limited amount of basic personal data was collected. Data derived from these interviews were used as a means of identifying relevant sources of stress and coping/leisure behaviours.

The second stage involved the development and trial of a five-section questionnaire with 18 subjects from a relevant pool. The sections in the questionnaire were developed from the data derived in the focus groups, from existing measures in the field of stress and coping, and from the general literature (Appendix 1). In totality the sections were designed to cover the three components of the transactional stress model (causes - coping - stress) previously discussed. Taken separately they represented demographic details of the respondents, a scale of potential stressors, a scale of coping strategies, measures of leisure lifestyle, and leisure use, and measures of stress effects. The entire series was balanced in format, and presented in such a way as to retain the

co-operation of the participants without adding to any existing burdens they might be carrying.

The third stage involved the main survey in which the questionnaire developed and modified through the first two stages was distributed to all secondary school principals and deputy principals in New Zealand.

Each of these stages will be described now in more detail.

Stage One - Focus Group Interviews

Access was made through a personal network to the pilot sample of 20 secondary school deputy principals who were all from one educational region in New Zealand attending their regular monthly meeting. They represented urban and suburban schools, a range of small, medium and large schools, and equal numbers of male and female staff. Seven principals were also interviewed separately. They consisted of five men and two women from different parts of the country.

The aims and objectives of the research were outlined in such a way as to encourage their co-operation without attempting to colour the outcome. The interview method had three parts, each of which dealt separately with sources of work stress, methods of coping, leisure participation and motivation and effects of stress.

Interview Analysis I: Sources of Work Stress

The subjects in the pilot study were asked to identify the events that caused them to feel under pressure, tension or strain at work, and also to identify the most significant change (if there had been one) in their workload since the implementation of educational reforms. Their responses revealed a number of events (e.g. "No matter what I do I never have time to schedule my day properly"; "I am constantly interrupted throughout the day"; "There is so much paperwork that I can never keep up to date with the reading I need to do, especially all the new legislation"; "There has been an enormous increase in my workload since *Tomorrow's Schools"*.

Considerable feeling was expressed that increasingly principals and deputy principals were required to become managers or executives for which they had no training, and also that there was a constant conflict between educational and economic values. For example one principal stated that:

> we are expected to be educational leaders on the one hand and work with staff and students, and on the other be managers of increasingly scarce resources. This means cutting some areas where we know there is no educational justification for it.

Another said:

> we are now required to operate our schools as quasi-businesses, the general manager of a sizeable company. With this goes a huge increase in paper work and paperflow, calls for efficiency and sometimes this is all in conflict with educational values and my role as the educational leader of the school.

Another commented:

> where once we worked within relatively stable - countrywide curriculum expectations now there is continuous change in curriculum areas in response to changing needs. Strategic leadership and management is needed to cope with this and this is happening alongside having to cope with self management in areas such as planning for the allocation of resources and the utilisation of support services. Always a conflict between what is good economically and what is needed or appropriate educationally. We are now no longer just educational leaders. We must now be conversant in all aspects of management, involved in industrial relations, consensus decision making - how do we respond to us all this so quickly - it's overwhelming.

They reported that the sheer number of changes being imposed was making life

intolerable, and different aspects such as the pace of changes, lack of training for changes, curriculum changes, increased accountability, feelings of uncertainty about the future - caused them to constantly feel under pressure. Some comments made were: "no time to review, I do nothing but react", "required to do a lot more things", "the pace of change has been phenomenal - there has been no chance to gather breath", "increased accountability has increased my workload and stress", "financial administration and planning has increased", "continuous change on limited resources increases tension", "constantly coping with feelings of uncertainty and change". All agreed that the workload of the typical principal and deputy principal had significantly increased over the previous three years as a result of the change in legislation and of the changed perception of the communities in which they lived and worked in.

From this array, a stressor measure of 97 items was developed that best reflected the events expressed. In this way it was thought that the stressor measure would take into account two areas which had emerged as important to improve stressor measurement (see chapter three) i.e. the relevance of the events to reflect the reality of the subjects being sampled, and the response to stressor items in a way that reflects the demands placed upon the subjects.

Interview Analysis II: Methods of Coping

A variety of coping strategies were generated in relation to the stressors identified in the first part of the interview. The interviewees were asked - "what sorts of things do you do, or actions do you take, to manage the stresses and pressures of work you have described". Although some mentioned specific strategies directly related to a stressor identified, such as "set up a system of advice and guidance for teachers having trouble", "ask for more consultation over changes being proposed by the Ministry", "arrange help for distressed students", "suspend out of control students", "lobby board of trustees members individually", "support victims in the school", "make staff aware of the trouble they cause", many felt that many of the stressors were outside their direct control and that they were at a loss to know how best to cope and their approaches were, "to do something else", "try not to worry", "engage in some engrossing non-work activity", "go for a walk", "talk things over with colleagues". Some tried to ignore the problem in the hope that it would go away.

This process identified some 47 items to which an additional 20 strategies were added from the Dewe & Guest (1990) Coping Checklist that were of a more general nature. Some examples of these items were: stand back and rationalise the problem; cover up problems rather than deal with them; let people know where you stand, take your feelings out on whoever happens to be around; talk things over with your partner when you get home at night; take some work home and work on it there; go and have a few beers or other drinks; become more involved in non-work activities, hobbies etc.

Thus the research developed a measure of coping strategies to reflect those strategies people said they used when confronted by the day to day stressors which they identified. Subsequently and in accord with the measurement issues discussed previously, the structure and the psychometric properties of the coping measures were also evaluated (see pp. 207-219 below).

Interview Analysis III: Leisure Participation and Motivations for Using Leisure to Cope with Work Stress

People were asked what they did when they were not at work or working on work related activities. They came up with a range of responses which included; reading, gardening, talking to people, cooking, running, sailing, climbing, movies, listening to music, church, singing, keeping fit and others. They were then asked why they participated in these activities. Overwhelmingly the main responses were, to reduce stress, relax, get away from work and do something different from work. When asked if they could be more specific about why they actively sought out these activities to reduce stress or to relax, and to explain the benefit, some of the comments were as follows: "I feel much better mentally and physically", "I get a sense of freedom in just doing what I want to do", "I get a chance to expand my talents in a way I can't at work", "Going for a run releases the tension in me", "I like to take out my tension and frustration on a squash ball or golf ball", "doing nothing relaxes me", "I just like being on my own, doing my own thing", "I belong to an alpine club and I get a real thrill climbing, a sense of achievement and excitement", "It's nice to do something where I am in control", "I enjoy just getting absorbed in something that takes my mind off work", "It's good just doing something for its own sake and not because you have to",

"I like the idea of throwing caution to the wind but I never get a chance these days", "gardening is not only peaceful but it allows me to be creative - I can stamp my own mark on it".

The reasons the group gave for participating in the activities they nominated to reduce stress and relax were similar to the sorts of motivations for/benefits of leisure identified generally in the leisure literature (see chapter five), and those identified by the Life in New Zealand Survey (LINZ) (Cushman, Laidler, Russell, Wilson & Herbison, 1991). Because of this it was decided to adapt a scale used in the same Cushman et al survey for this present research. Twenty-three items were therefore taken from the LINZ Survey on reasons why people participated in leisure, and a further 11 items were added to capture other motivations/benefits identified through the focus group. These included, for example, to daydream/fantasise; to be free to do what I like; to do something for its own sake; to do something challenging; to do something risky; to do something that is important to me; to do something quiet and peaceful; to rest and do nothing; to do something where I am in control; to be totally focused.

The approach taken was to actually ask people why they did particular things, in order to generate a list of needs that might be important to be met through leisure for coping with work related stress. The resulting 34 item measure drawn up from their responses and the LINZ survey, which largely reflected the literature on motivations for/benefits of leisure, would also later be factor analysed in the main study, both to uncover the dimensions of leisure in this context and to explore the influence of these motivational categories on, the stressor - stress relationship.

Interview Analysis IV: Effects of Stress

Here in stage I, the sample subjects were asked to identify how the demands at work made them feel. In response they identified a range of physical, emotional and cognitive distress behaviours as including the quotations below. "I feel tense and anxious, like a spring about to unwind"; " I have no interest in anything else because I am too tired and preoccupied with what is going on at work"; "having trouble concentrating, can't keep my mind focused, flits all over the place"; "not sleeping well"; "can't slow down, seem to keep running from one thing to the next"; "I am on

medication for chest pain which is being attributed to stress"; "I am looking at a change of job or taking early retirement"; "I am constantly compromising aspects of my job so I feel I am doing nothing well"; "I am looking for things outside work to give me the relief I need from the pressures at work"; "I wake up in the middle of the night in a blind panic... terrified... can't get back to sleep". These were some of the personal reports of the effects of stress and showed a range of physical, emotional and cognitive distress behaviours.

Because so many of the signs they had noted in their own behaviour or their colleagues were identical to those symptoms of damaging stress already identified, (see Cox, 1978) it was decided to incorporate two well validated self administered screening tests measuring general health and psychological disturbance in community populations. The first was the 21 item *Hopkins Symptom Checklist* (Green, Walkey, McCormick & Taylor, 1988), and the second was the 20 item *General Health Questionnaire* (Siegert, McCormick, Taylor & Walkey, 1987). To these was added an eight item tension scale taken from Dewe (1991a) which had been developed from House and Rizzo, (1972) because many of the comments made in the interviews reflected tension and anxiety. The resulting stress effects section therefore consisted of three measures that were thought more likely than not to reflect the kinds of symptoms experienced by the group of subjects in question.

The Hopkins Symptom Checklist (HSCL) is a self report symptom rating inventory which has been found by researchers in the United States to be both a reliable and valid psychological instrument for the measurement of neurotic symptoms as well as a useful indicator of symptoms present in normal populations (Rickels, Lipman, Park, Covi, Uhlenhuth & Mock, 1971). It has a high test - re-test reliability and interrater reliability as well as internal consistency (Derogatis, Lipman, Rickels, Uhlenhuth & Covi, 1974) and its construct validity has been well established (Prusoff & Klerman, 1974). Again the availability of different 21, 29, 35, 45 and 54 item versions of the original 58 item questionnaire makes it a practical and versatile measure. The measure has also been used in New Zealand and the version used in this study is the 21 item version developed by Green, Walkey, McCormick and Taylor (1988). The HSCL-21 comprises three subscales of Performance Difficulty, Somatic Distress, and General Feelings of Distress, and also provides a Total Distress Score.

The General Health Questionnaire (GHQ) is a self administered screening test for detecting non-psychotic psychiatric disorders in community populations (Goldberg, 1972). It is widely used, and has been found to have high split half and test-re-test reliability as well as internal consistency. Its validity has also been well established by correlations with the Clinical Interview Schedule (Goldberg, 1978; Benjamin, Decalmer & Haran, 1982) and the Present State Examination (Finlay-Jones & Murphy, 1979; Banks, 1983). The availability of different 12, 20, 28 and 30 item versions of the original 60 item questionnaire (Goldberg, 1972) makes it a practical and versatile measure for use in applied settings (e.g. Banks, Clegg, Jackson, Kemp, Stafford & Wall, 1980). The version used in this study is the 20 item New Zealand version developed by Siegert, McCormick, Taylor & Walkey (1987). It has four subscales made up of General Illness, Sleep Disturbance, Anxiety and Dysphoria, Severe Depression, and also gives a total score of General Health (or Ill-health).

The tension scale taken from Dewe (1991a) is made up of eight items asking individuals to indicate how often they work under a great deal of tension; how often the job makes them fidgety or nervous; how often they get irritated or annoyed over the way things are going; how often job worries get them down physically; how often problems associated with the job keep them awake at night; how often they worry after making a decision whether they have done the right thing; how often they breathe a sigh of relief when they finish work for the day; and how often they wonder whether it is all worthwhile. It was designed to measure the existence of tensions experienced by persons on the job and to minimise the bias created when tension scales are created by rephrasing conflict and ambiguity items. For example in a previous study (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964) one measure of role ambiguity was, "Do you feel you are always as clear as you would like to be about what you have to do on this job?" While a related tension item asked respondents to rate how often they felt bothered by "being unclear on just what the scope and responsibilities of your job are". In studies measuring work stressors, the eight item scale Dewe (1991a; 1991b) was found to have alpha reliability coefficients of .83 and .74 respectively.

Stage Two - Construction Of The Questionnaire

A questionnaire in five sections was constructed, based around the data collated in stage I. This questionnaire was then piloted in stage II. The following outlines the sections of the questionnaire, and the piloting of the questionnaire is discussed.

The Questionnaire Elements - Section I - Demographic Information

Section I asked basic demographic questions of the respondents, four specific questions about their institutions and three questions about their level of job satisfaction and levels of stress.

The demographic questions covered:

- age
- gender
- marital status
- present position
- years in present position
- years in teaching

The institutional questions covered:

- number of students in the school
- number of teaching staff
- type of catchment area of school
- hours worked in school each week

Questions were also asked about:

- level of job satisfaction
- days off sick
- level of work stress

The Questionnaire Elements - Section II - Work Stressors

Section II offered 97 randomly arranged job stressors derived from responses to

the focus interviews. Respondents were asked to rate the 97 items on a five point likert-type scale, ranging from 1 (never a source of stress) to 5 (always a source of stress).

Respondents were asked to mention any additional sources of stress they found in their work.

The Questionnaire Elements - Section III - Coping Strategies

The third section offered 67 randomly arranged coping strategies derived from the Dewe & Guest (1990) Coping checklist (20 items), and the focus group interviews (47 items). These reflected ways individuals coped with sources of work stress. Respondents were asked to rate the 67 items on a 5 point Likert-type scale, ranging from 1 (never used) to 5 (always used).

The Questionnaire Elements - Section IV - Leisure Activities and Motivations

The leisure section of the questionnaire had two parts. The first part asked respondents to list the activities or experiences they enjoyed doing in their leisure time. For reasons previously discussed in chapter five, leisure was defined in relation to time away from work, and kind of activity or experience. The instruction enabled respondents to determine what leisure meant to them without having a set of activities imposed upon them from which they had to choose. The respondents were then asked if they had used leisure to help them cope with stress and to say how it might have helped. They were also asked whether leisure was an important part of their lives and if it had always been so. The next part of the leisure questionnaire used a scale of 34 randomly arranged need related items that was derived both from the literature on reasons for becoming involved in leisure, and from responses of individuals in the focus group. Respondents were asked to indicate how important each of the listed statements was for them as a means of coping with work related stress.

The Questionnaire Elements - Section V - Psychological States

The final section contained the 21 item Hopkins Symptom Checklist (Green, Walkey, McCormick & Taylor, 1988), the 20 item General Health Questionnaire

(Siegert, McCormick, Taylor & Walkey, 1987), to gain an indication of the mental and physical states of the respondents, and the eight item Tension Scale (Dewe, 1991a). Respondents scored the HSCL.21 on a 4 point Likert Scale from 1 (not at all) to 4 (extremely). The GHQ was scored on a 4 point Likert Scale from 1 (Better than usual or not at all) to 4 (much worse than usual). Respondents were asked to rate the Tension scale on a 5 point scale from 1 (strongly disagree) to 5 (strongly agree).

These three different outcome measures - two more generally oriented and one specifically related to work stress were used in the present study to determine whether particular stressors were related to specific outcomes. Caspi, Bolger and Eckenrode (1987) and Brief and George (1995) have noted that certain stressors and coping strategies may have quite different relationships with different outcomes. Additionally Brief and George (1995) claim that, if a condition of employment adversely affects mental health, then one should be able to demonstrate an association between the presence of the condition and some general (not work-specific indicator of psychological well-being. Too often work stress researchers have relied on only one measure of stress, which has often been job satisfaction, as the only indicator of stress reactions. Hence the use in the present study of a number of indicators of psychological distress.

The components of the questionnaire, work stressors, coping strategies, leisure motivations and psychological and physical symptoms represent the conceptual framework for the present study. They were intended to define the role that coping and leisure play in the stress-health relationship, and to consider the hypothesized direct and moderator effects of both coping and leisure.

Piloting the Questionnaire

The complete questionnaire was piloted with 18 principals and deputy principals, before being distributed to all principals and deputy principals in New Zealand. They were asked to be critical of the questionnaire content, readability and applicability. (Only minor changes were required, mainly in rephrasing some of the stressor items.) Two respondents said that some of the stressor items did not apply to them because of their job descriptions, but the items were retained because each school delegated tasks and responsibilities differently among their senior management, and the scoring scale

from 'never' to 'always' enabled respondents to indicate that the event was not a stressor for them if it did not figure as part of their job. For example with the item "curriculum changes", in some schools the principal may oversee the task, while in others it will be the deputy principal. Pilot testing suggested that the items were clearly worded and representative thereby ensuring the face validity of the research instrument. This preliminary stage having been completed, the questionnaires were readied for circulation to the intended target population for the main research study.

Stage Three - Distribution And Completion Of The Questionnaire (The Main Study)

For the purposes of this study the measures described earlier were combined into a booklet (Appendix I) for distribution to all state and composite secondary schools in New Zealand. For reasons of the *Privacy Act* (Longworth & McBride, 1994) the packages could not be addressed to individuals by name, but instead had to be formally addressed to the 1042 respective principals, deputy principals and assistant principals at schools listed with the Ministry of Education. The Post Primary Teachers Association (PPTA) Principals Council gave their explicit co-operation by writing to all principals encouraging them to complete the questionnaire because they considered that the information would be both useful to the PPTA and an interesting exercise for the individuals themselves.

Six hundred and ninety-five useable questionnaires were returned representing a response rate of 67%. In the covering letter sent with the Questionnaire, respondents were asked to contact the researcher if they had any problems filling out the questionnaire, needed any help or had any comments. Over half of the respondents responded, of whom some 14 wrote letters, 20-30 telephoned, and the rest wrote their comments on the questionnaire. Only six people, indicated that they considered the study a waste of time, and said either that if there was stress then it was a good thing, or that there was no such thing as stress and far too much was being made of it! The other respondents appeared to be pleased with the study, referring to the significant difficulties they were having and the little help they were receiving. For them the experience of filling out the questionnaire was obviously quite cathartic, and one

respondent (a principal), after filling it out wrote that he had just resigned as he realised he had had enough. There was a general suspicion that more and more illness was occurring among the senior staff, though often not disclosed, and that more would resign in the future.

The sample characteristics and the representativeness of the sample are detailed in the following chapter. The remainder of this chapter will be used to describe the preparation of the data for analysis.

Data Preparation And Methods Of Analysis Used

Data from the returned questionnaires were coded, entered and then analysed using the Statistical Package for the Social Sciences (SPSSX, 1986). The chief analytical techniques used in the research were:

- Frequencies
- Principal Components Analysis
- Factor Replication
- Correlations
- Stepwise Multiple Regression Analysis
- Moderated Multiple Regression Analysis
- Content Analysis

First came a frequency analysis of the demographic variables. This was followed by the factoring of the 97 stressors, the 67 coping strategies, the 34 reasons for leisure and the health measures. This data reduction and the evaluation of the properties of these measures became an important part of the study as the scores derived from this stage were used as dependent and independent variables in the multivariate analyses that followed. The evaluation of the stressors, coping, leisure and psychological health scales was carried out in two stages.

Principal Components Analysis

The first stage in the evaluation involved a principal components analysis with

varimax rotation. The first step in the principal components analyses was to assess the adequacy of the correlation matrices for the component analytic methods (Dziuban & Shirkey, 1974). Two techniques that have been specifically designed to be applied to correlation matrices to ensure the psychometric coherence of the variables prior to factoring, the Bartlett's test of sphericity (1950) and the Kaiser-Meyer-Olkin measure of sampling adequacy, (Kaiser, 1970) were used in the present study. The Bartlett's test of sphericity tests the hypothesis that the sample correlation matrix came from a multivariate normal population in which the variables of interest are independent. Rejection of the hypothesis is taken as an indication that the data are appropriate for analysis (Dziuban & Shirkey, 1974). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy gives an indication of whether a particular variable belongs to a family psychometrically. Kaiser's (1974) calibration of the index indicates that a minimum value of .70 is required with anything above .80 considered meritorious and above .90 marvellous (Kaiser & Rice, 1974).

Principal components analysis is a descriptive rather than an inferential technique, providing a smaller set of components or dimensions that may be taken as accounting for the observed interrelations in the data. Normally, it is an acceptable technique for an exploration for meaningful components of a construct. Although there is debate among authors about whether principal components analysis is a type of factor analysis or a distinct technique (Dunteman, 1989) both techniques reduce a set of variables into new variables (factors, components) that provide a description of the structure of the original set of variables. Nunnally (1967, p101) asserts that factor analysis is at the heart of the measurement of construct validity.

Principal components analysis does not require an a priori estimate of the number of factors to be extracted, so other criteria must be used in deciding the number of factors to retain. Rummel (1970) suggests that only the factors or components which can be meaningfully interpreted should be kept. Alternatively as factors are extracted in order of importance in explaining variance, factoring can be stopped when the factors start to account for trivial amounts of the variance (normally when the eigenvalue or latent root drops below 1.00). In the present analyses, components with eigenvalues greater or equal to one were extracted and then considered in relation to the scree or discontinuity test. Cattell's (1966) scree test is based on the notion that factor variance

tapers off when the factors are mostly measuring random error. Then a plot of the factors by their latent roots is made and the negative decreasing slope is used to determine the number of factors. Factors before the scree or tapering of the slope are extracted for rotation. While not without its difficulties (Zwick & Velicer, 1986) the scree test provides a more accurate and less variable procedure than the eigenvalue greater than one rule, and used conservatively it may result in an appropriate solution. However it is still not clear which solutions for determining the preferred number of factors to use (Hakstian, Rogers & Cattell, 1982), and because of this, many factorial approaches to the study of underlying dimensions of constructs have suffered.

Identification of Replicable Component Structures

An alternative procedure, FACTOREP, has been developed to provide a logical solution to this number of factors problem (Walkey & McCormick, 1985), and it is this method that the second stage of the analysis adopted. The technique is substantially different from those employing purely mathematical criteria, in that it requires factor structures to be replicated across independent subject groups. Only if the number of factors is then clearly and consistently replicated across the groups are they said to be stable enough to be considered real subscales. Walkey & McCormick (1985) point out that the usefulness of subscales in any questionnaire is limited by the extent to which the factors and consequent subscales are based upon replicable characteristics of the questionnaire itself, rather than idiosyncratic characteristics of the responding group. Yet a perusal of the literature in work stress and coping and leisure research journals, shows that samples from different populations frequently are attributed different factor structures on the basis of their responses to the same questionnaire.

The FACTOREP procedure involves a component by component comparison procedure which involves rotating different number of components, and then systematically examining each solution until a component structure is found which can be replicated across subject groups. The steps involved in this procedure include establishing item salience by setting a loading cut off point, and then comparing item loadings across all pairs of components for each two subject groups in turn. The results of comparing any two components are placed in a three by three contingency table depending on whether each is a positive salient, non salient (below the loading cut-off

point), or negative salient item on each of the two components. The output from this procedure is a table reflecting inter-component similarity from which is derived a similarity or "S" index (see Chapter seven). The S index values can range from one, reflecting perfect replication of loadings through zero where no loadings exist to minus one indicating perfect replication but with signs of the loadings reversed (Walkey & McCormick, 1985).

In the present research, the Walkey and McCormick (1985) procedure was used to identify the existence of a stable component structure that could be replicated across subject groups. For this purpose, one pair of groups was formed by the position of the respondents - principal or deputy principal, and another by random unsystematic allocation of the respondents to one of two groups. Factor replication was carried out in an attempt to replicate the component structure elucidated in the first stage of the component analysis of the measures. This two stage process of factoring outlined above was used to evaluate all the scales used in the study before exploring the relationships between the components of the stress process; the work stress, leisure, coping and health variables, through multiple regression analysis. While replications using these groups should be reasonably reliable in determining a robust factor structure, an even better procedure would be to replicate factor structures across other samples. However, in relation to the present study, it would seem that to use replicable components should give potentially more useful and interpretable results in the multivariate analyses to follow.

Following on from the FACTOREP procedure, it was necessary to determine which items comprised a particular subscale. Using the four subject groups outlined above it was decided to include any item which loaded higher than ±.30 on the same factor for at least three of the four subject groups in order to allow for some single item unreliability. The component loading of ±.30 was chosen as the cut off point to avoid overspecificiation and to avoid being too rigorous in eliminating items at this stage in the development of these measures. The items chosen were again subjected to a principal components analysis across the whole sample, and components were finally described or named, by considering loadings in descending order (Child, 1970). Cronbach's alpha was used to assess the internal consistency of the trial multi-item composite scales and a reliability coefficient of at least .70 was required for

psychometric acceptability (de Vaus, 1991).

To increase objectivity in determining the factors under consideration, the replicable components found were labelled only after consultation with two colleagues who named them independently. It was found that apart from minor differences in the wording, the three appraisals of the components were almost identical. Finally the intercorrelations between the reported variables were examined and set out, before multiple regression analysis was used to analyse the relationships between each set of independent variables (work stressors, leisure and coping) and the dependent variables (tension and health outcomes).

Stepwise Multiple Regression Analysis

Stepwise multiple regression was used to determine the sociodemographic variables that made significant contributions to the explanation of estimated variance on the dependent variables. It was also used to determine the relative importance and contribution of each of the work stressors to variation in stress reactions without the constraints imposed by entry of variables into the analysis. To isolate the demographic variables and work stressors that would yield the optimal prediction equations, the cut-off point was determined by two statistical criteria: 1) that the overall F ratio for the equation was significant, and 2) that the partial regression coefficient for the individual independent variable being added was at a statistically significant level or one approaching significance. If the statistical criteria are not met in stepwise regression one or more of the variables may never be entered into the regression equation (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975).

Multiple Moderated Regression Analysis

Multiple regression is a general statistical technique which allows one to analyse the relationship between a group of independent or predictor variables and a dependent or criterion variable. Regression analysis provides an opportunity to examine the unique effects of the different interdependent variables in relation to their contribution to the explained variance in the dependent variable, The regression analysis is viewed as a descriptive tool through which the dependence of one variable on others is summarised

and decomposed (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975). An underlying assumption of the technique is that there is a linear association between the independent and dependent variables. Simple additive regression models assume that the relationship between a dependent variable and any independent variable is the same at different levels of remaining independent variables.

However, it has been shown that this assumption is mostly untenable for risk factors in social epidemiology (Wilcox, 1981; Cleary & Kessler, 1982; Cronkite & Moos, 1984). Predisposing or modifying influences may have effects on certain risk factors associated with illness. For example the effect of work stress on illness symptoms may be different at different levels of leisure. There is some evidence in the literature for predisposing variables such as gender, age, social class, occupation and educational level to be associated with illness and leisure participation. However it is not expected in the present study that such variables will exert any effect as the sample is taken from one occupational group, with a fairly compacted age range and with a similar educational background. Gender is one variable that could have an impact and will be examined along with the other demographic variables for effects. Use of multiple regression with an interaction term has been advocated for the study of more complex processes such as those involved in the present study (Lewis-Beck, 1980).

In multiple regression models, the effect of a risk factor (work stressors) at a particular value of a moderator variable is denoted as a conditional or moderating effect. In an additive model work stressors and coping/leisure variables represent main effects. Investigating conditional/main effects of risk factors (work stressors) or moderators (coping/leisure) allows a statement to be made regarding the independent effect of these variables on health outcomes.

As representation of moderator variables in empirical studies has grown, a number of attempts have been made to define techniques for detecting moderator effects (Dunlap & Kemery, 1987). The procedure of multiple moderated regression (MMR; Zedeck, 1971) is one such technique. The procedure derived from the work of Saunders (1956) involves the use of two predictor equations to test for moderator effects. Based on the general linear model, the procedure compares the variance explained by a full model containing a predictor variable or independent variable, the hypothesised

moderator variable and the product of the two (cross product) which carries the moderator effect, with a reduced model omitting the cross product term and containing only the predictor and the moderator (Morris, Sherman & Mansfield, 1986, Dunlap & Kemery, 1987; Stone & Hollenbeck, 1989). The coefficient of determination for the reduced model is then subtracted from the coefficient of determination for the full model. If this difference is statistically significant, the moderator hypothesis is supported (Morris, Sherman and Mansfield, 1986).

Cohen (1978) and others (Arnold & Evans, 1979) have stated that MMR provides an unambiguous test of moderator effects. There has recently been considerable discussion about the merits of this assertion, and issues have been raised such as a) whether multi-collinearity is introduced in MMR through the cross product term (Morris, Sherman & Mansfield, 1986); b) whether MMR is only appropriate for detecting the moderating effects of the form variety (Arnold, 1982) and c) whether independent variable unreliability influences MMR (Evans, 1985). However other researchers have argued that MMR is appropriate and is the most preferred statistical technique (Dunlap & Kemery, 1987; Stone & Hollenbeck, 1989; Stone, 1990) for identifying the presence of moderating effects.

The advantages of MMR over other techniques such as subgroup analysis, include greater statistical power, preservation of original data, and retention of information from the full sample (Cronbach, 1987; Stone & Hollenbeck, 1989; Stone, 1990). MMR also permits the determination of both the independent effects of the hypothesised moderating variable and its interaction effect with the predictor variable on the dependent measure (Zedeck, 1971; Peters & Champoux, 1979).

A further advantage of MMR is the ability of the procedure to deal with multi-collinearity, using the product of deviation scores as the interaction term. According to Cronbach (1987, p. 414), using the deviation cross product means "the predictor set is almost certain not to be multi-collinear". However as multi-collinearity is a situation where some or all of the independent variables are correlated highly enough to influence the estimated regression coefficients (Berry & Feldman, 1985) it was decided to apply tests for multi-collinearity to the data in the present study to ensure its suitability for MMR analysis. These tests included the inspection of the matrix of bivariate

correlations. If no correlation exceeds .80, multi-collinearity is deemed not to be a problem. However as this test is not without its problems (Berry & Feldman, 1985) a second test was used to examine the regression equation itself. If there is a substantial R^2 for the equation but statistically insignificant coefficients there could be a problem of multicollinearity. A further test was applied by regressing each independent variable on all other independent variables and then the size of the R^2 examined. If the R^2 from any of these equations does not approach 1.00 then the data is deemed suitable for further analysis.

On the basis of the above information, the present study adopted MMR as the analytic procedure to determine the nature of the relationship between the dependent and independent variables, utilising a combination of raw scores with a deviation cross product. Each measure of stress outcome, as the dependent variable was regressed on each combination of the stressor measures, and the coping and leisure moderator variables with the corresponding deviation cross product entered last. In step two, coping and leisure were added as a block. Block entry was performed to counter the number of regressions that would otherwise have to be performed, to maintain order and control and to give more coherence to the data. It was also deemed to be the most cautious and conservative approach. The third step introduced the interaction terms for each of the five work stressors with the two coping behaviours and leisure variables respectively. Since the two models (raw score and deviation score) are effectively interchangeable in respect of main effects, the present study retained the raw score components for steps one and two. For the third predictor term, entered at step three, the product of deviation scores recommended by Cronbach (1987) was used. The order of entry; first the independent variable then the moderator, and last the deviation cross product, ensures that the impact of the interaction term is not confounded with variance due to the main effects of the independent or moderator variables.

The most common method for performing the test for moderating effects is to compare R^2 for the full regression model of step three, with the R^2 for the reduced regression model of step two (Lubinski & Humphreys, 1990). If the change in R^2 with the addition of the cross product term is significant then the independent variable and the potential moderator have an interactive effect and the potential moderator is confirmed as a moderator variable. Three statistical criteria were used to identify

significant independent variables. These included for the overall equation a significant *F* ratio, that the partial regression coefficient for each independent variable be significant; and the amount of variance explained by each additional independent variable be greater than one per cent.

Content Analysis

Content analysis was used to analyse the responses to the open ended questions in the leisure section. For each question, responses were organised into categories according to their nature. Thus categories were substance-based, as they are grounded in what is said (Kaid & Wadsworth, 1989). Where necessary, each of the main categories contained several sub categories to capture the specific nature of the responses. The process allows for the richness of the data to be retained while enabling the grouping of items that possess similar connotations, thus it can be said to have semantic validity (Weber, 1985). A second coder was used to achieve intercoder reliability. Intercoder reliability exceeded .80 across the categories. The open ended data is described in chapter eight below.

Summary

This chapter has described how the measures used in the study were developed, and outlined the methods of data analysis to be used. The next chapter will detail the characteristics of the survey sample, and will describe in detail the evaluations of the measures that were described in this chapter.

Chapter 7 - The Evaluation of the Scales used in the Questionnaire

This chapter examines the reliability of the scales used in the study together with the replicability of the factor structures underlying the subscales. The chapter begins with a consideration of the representativeness of the sample of subjects in comparison with the pool from which it came, and proceeds to a systematic analysis of the demographic characteristics, job satisfaction, and estimates of work stress. It then takes up a detailed statistical examination of each section of the main research instrument - i.e. the questionnaire, and provides the material with which to examine the main issues with which the research began.

The Representativeness of the Sample and Sample Characteristics

As has been noted earlier, a total of 1042 questionnaire booklets were sent out to all secondary school principals and deputy principals in New Zealand with a final response of 695, (67%) returned completed. The representativeness of that response group was gauged with reference to gender and position, and the characteristics of the total population of the occupational group (Table 7.1).

Table 7.1
Representativeness of the Sample by Gender and Managerial Position

Gender	Male		Female		Totals	
Position	n	%	n	%	n	%
Principals Total Population *	296	81	70	19	366	100
Principals Sample	188	75	62	25	250	68
Deputies Total Population *	384	57	292	43	676	100
Deputies Sample	262	59	183	41	445	66
Combined Population	680	65	362	35	1042	100
Total Sample	450	65	245	35	695	67

* Figures from Data Management Unit, Ministry of Education as at 1 March 1992.

The data shows that 65% of the principals and deputy principals responding to the survey were male and 35% were female, identical to the proportions in the total population of principals and deputy principals. Within each group the gender proportions were comparable. Thus it can be seen that the sample was closely representative for position and gender to the total New Zealand population of secondary school senior management.

Sample Characteristics

Of the 695 subjects who returned useable questionnaires, 250 were principals and 445 were deputy principals. Table 7.2 shows the demographic data in detail. The ages of the subjects ranged from 28 to 65 with a mean age of 48 years.

Seventy four and a half percent of the sample were aged from 41 to 55 years. The majority, 82.5% described themselves as married with 8.6% describing themselves as separated or divorced. The national average for separated/divorced is 12.2% (New Zealand Statistics Department). Most, 57.2% had been in their position for less than six years, and 93% worked in schools with more than 251 pupils. 52.3% described their catchment area as inner city, urban or suburban.

A characteristic of the sample, of significance for this study, is that only five subjects (0.7%) reported they worked 40 hours or less per week. The majority, 92.2%, reported working between 40 and 80 hours per week with an average of 62 hours. In answer to the question, "How much has your level of satisfaction with your job changed since the implementation of the Education Reforms?", 38.1% of principals reported that their job satisfaction had decreased and 27.4% said it had stayed much the same. In answer to the same question, 44.4% of deputy principals felt their job satisfaction had decreased. Just over a third of principals (34.5%) said their job satisfaction had increased with a small proportion of deputy principals (18.4%) feeling the same (See Table 7.3). Tests revealed (χ^2 = 25.81, p = <.001) that principals, and deputy principals differed significantly in terms of their level of job satisfaction since the implementation of the educational reforms.

TABLE 7.2 DEMOGRAPHIC DATA (N = 695) - RESPONSE RATE 67%

Variable	Demographic Categories	N	%
Age	<30 years	1	0.1
	30-35 years	19	2.7
	36-40 years	72	10.4
	41-45 years	158	22.8
	46-50 years	184	26.5
	51-55 years	175	25.2
	56-60 years	74	10.6
	61-65 years	9	1.3
	[mean age = 48 years]		
	[range = 28-65 years]		
	[no response]	3	0.4
Gender	Male	450	64.7
	Female	245	35.3
Marital Status	Married	573	82.5
	Single/widowed	19	2.7
	Divorced/separated	60	8.6
	Never married	36	5.2
	Other	3	0.4
	[no response]	4	0.6
Present position	Principal	250	36.0
	Deputy	445	64.0
Time in present position	<3 years	167	24.0
	3-5 years	231	33.2
	6-10 years	177	25.5
	11-15 years	93	13.4
	>16 years	25	3.6
	[no response]	2	0.3
Catchment area	Inner-city	91	13.0
	Urban	114	16.4
	Suburban	159	22.9
	Rural	236	34.0
	Mixed	89	12.8
	[no response]	6	0.9
Institution size	<250 pupils	50	7.2
	251-500 pupils	210	30.2
	501-850 pupils	214	30.8
	880+ pupils	217	31.2
	[no response]	4	0.6
Number of staff in institution	<20	87	12.5
	21-50	383	55.1
	51-90	198	28.5
	91-125	13	1.9
	126+	2	0.3
	[no response]	12	1.7
Time worked each week	<40 hours	5	0.7
	40-49 hours	22	3.2
	50-59 hours	185	26.6
	60-69 hours	323	46.4
	70-79 hours	110	16.0
	80+ hours	42	6.0
	[no response]	8	1.1

TABLE 7.3
EDUCATIONAL REFORMS AND LEVELS OF JOB SATISFACTION

	Principals (N = 226)		Deputy Principals (N = 419)	
	n	%	n	%
Substantially increased	14	6.2	15	3.6
Increased	64	28.3	62	14.8
Much the same	62	27.4	156	37.2
Decreased	60	26.6	153	36.5
Substantially decreased	26	11.5	33	7.9

In answer to the question, "Thinking back since the implementation of Educational Reforms, would you say that the level of work stress is very high, moderate or low?", 89.6% of principals said it was high or very high, and 87.4 per cent of deputy principals said the same (see Table 7.4). Chi-squared tests (χ^2 = 7.29, p = .063) revealed no significant differences between the two groups. The profile of the sample clearly shows the group to be working very long hours, with at least a third indicating low satisfaction and for the great majority higher levels of stress associated with the implementation of educational reforms.

TABLE 7.4
EDUCATIONAL REFORMS AND LEVELS OF JOB STRESS

	Principals (N = 241)		Deputy Principals (N = 430)	
	n	%	n	%
Very high	97	40.2	129	30.0
High	119	49.4	247	57.4
Moderate	24	10.0	52	12.1
Low	1	0.4	2	0.5

Evaluation of the Stressor Scale, Its Factor Structure and General Psychometric Properties

Stressor Scale

Section II of the questionnaire, as described in chapter six, was a 97 item work stressor scale that required respondents to consider each of the work issues listed and to indicate on a five point scale (1 = never to 5 = always) how often each was a source of stress when carrying out their work.

Stages in Evaluation

The analysis followed three steps:

a) Principal components analysis of the 97 stressors.

b) Examination of the components extracted from the above analysis to determine a replicable factor structure that represents the most robust structure of the measure.

c) The creation of composite scales and the evaluation of their psychometric properties, including means, standard deviations, and reliabilities (Cronbach's alpha coefficient and corrected split half.)

Data Analysis

The data were first examined to determine whether they were suitable for principal components analysis. An inspection of the correlation matrix revealed the presence of some underlying structure. The ratio of variables being analysed to sample size of 1-7.20 was less than the generally accepted rule of thumb of 1-10. However in these circumstances the conclusion drawn by Gorsuch (1983, p.332) was adopted, i.e. that no "safe" ratio has been established because the number of variables to subjects is highly dependent on the robustness of the phenomena being investigated. Thus, when the phenomena are relatively robust, the guide is not so much the ratio size, as that the sample size should not be less than 100.

The Bartlett (BS) test of sphericity (28658.5 p< .0001) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.93933) confirmed the appropriateness of the correlation matrix for factor analytic methods and that the items also "cohered psychometrically" (Dziuban & Shirkey, 1974). The 19 components with eigenvalues greater than or equal to one were first extracted and then considered in relation to the scree or discontinuity test. As a result of considering the scree test, six components were selected for rotation. The varimax procedure was used, because it did not depend on any assumptions about the general structure of the variables (Dewe, 1991a). To avoid overspecification, component loadings were set at ±.30. Components were then described by considering loadings in descending order (Child, 1970).

Results of Psychometric Analysis of 97 Item Stressor Scale

The resulting six components explained 26.79, 6.05, 4.11, 3.39, 2.91 and 2.30 per cent of the variance respectively, and their corresponding eigenvalues for the different components were 25.99, 5.87, 3.99, 3.29, 2.83 and 2.24 (Table 7.5).

Inspection of the unrotated solution revealed a large general factor with all 97 items loading above .35 on the first unrotated (general) factor (see Table 7.5). The rotated solution presented in Table 7.5 produced six dimensions or components. The values of Cronbach's alpha reliability coefficient and the corrected split-half reliability coefficient were both high for all components (see Table 7.5) and for the total scale at .97 and .97 respectively.

The first component comprised 20 items and was labeled *Quantitative Work Overload*. The second component was also made up of 20 items which best described *Relationships with Staff*. The third component was made up of 17 items and described *Organisational Changes in Education*. The fourth component comprised 12 items that described *Dealing with Students*. The fifth component was made up of 15 items and described *Managing Resources* and the Sixth component was made up of 11 items and described *Increased Community Involvement in School Management*.

Table 7.5
Principal Components Analysis of 97 Item Stressor Scale with Varimax Rotation

	Quantitative Work Overload	Factor I (unrotated)	I	II	III	IV	V	VI
6	Heavy workload	.49	.69	-.01	.11	.06	.09	.16
22	Having to deal with many tasks at once	.61	.64	.08	.06	.30	.20	.21
12	Constant interruptions throughout the day	.61	.63	.10	.14	.33	.08	.17
19	Increased administration	.65	.60	.07	.34	.16	.27	.06
2	Not being able to schedule time	.38	.59	.10	-.02	.11	-.03	.12
1	Time pressures	.40	.54	-.02	.03	.12	.11	.13
15	Lack of consistent planning because of day to day demands	.53	.54	.22	.20	.12	.07	.05
10	Endless paperwork	.54	.53	-.03	.34	.01	.26	.13
14	Increase in workload since Tomorrow's Schools	.61	.53	.03	.43	.12	.23	.05
27	Continuous change	.65	.53	.08	.41	.14	.32	-.02
3	Having no rest breaks in the day	.39	.51	.16	-.00	.13	.01	.08
5	Work interfering with private life	.43	.51	.10	.16	.03	.07	.13
13	Number of meetings to attend	.53	.50	.04	.18	.09	.25	.21
4	No time to keep up with reading	.37	.50	.12	.14	-.11	.14	.01
18	Daily crises	.51	.46	.23	.06	.44	-.08	.11
17	Inability to meet deadlines	.43	.46	.23	.05	.11	-.01	.17
28	Way in which change is implemented	.59	.44	.21	.41	-.00	.25	-.01
42	Staff feeling overworked	.64	.40	.25	.25	.24	.31	.05
8	Conflict between teaching and administration	.36	.36	.33	.03	.13	.03	-.11
7	Being a peripatetic teacher	.35	.33	.24	.05	.19	.03	-.09
	Relationships with Staff							
52	Philosophical differences between principal and deputy principal	.38	.08	.70	-.02	-.03	.14	.02
35	Cooperation between principal and deputy principal	.35	.07	.67	-.09	-.05	.17	.06
47	Dealing with conflict between staff and principal or deputy principal	.44	.11	.64	.00	.11	.11	.06

39	Staff who are uncooperative	.46	.01	.62	.18	.29	-.12	.12
51	Insufficient support from staff	.53	.12	.62	.13	.12	.13	.17
44	Staff who lack commonsense	.43	-.01	.59	.17	.21	-.00	.09
40	Staff who don't listen	.47	.03	.59	.21	.28	-.41	.07
46	Staff who are dissatisfied	.59	.19	.58	.19	.27	.09	.09
38	Staff not meeting deadlines	.52	.09	.57	.17	.36	-.01	.06
37	Having to discipline staff	.42	.05	.57	.11	.23	-.06	.12
41	Staff who are incompetent	.32	-.00	.54	.12	.22	-.13	-.01
45	Staff who have unrealistic expectations of principal and deputy principal	.60	.17	.53	.25	.17	.13	.22
36	Demands of staff	.55	.35	.50	.38	.19	.07	.16
23	Performance not recognised by colleagues	.55	.26	.48	.21	.07	.17	.11
16	Conflicting demands between teaching and non teaching staff	.54	.43	.48	.06	.03	.17	.08
26	Trying to develop better communication	.61	.33	.45	.12	.15	.29	.10
93	Flow of communication through school	.52	.13	.45	.15	.16	.28	.07
50	Isolation from social networks in school	.45	.10	.43	.07	.04	.30	.17
94	Lack of power to influence change	.59	.19	.40	.30	.08	.30	.12
70	Conflict between demands and responsibility of job and ability to make decisions	.56	.16	.33	.17	.21	.30	.22
	Organisational Changes in Education							
83	Changes in knowledge base of Ministry of Education	.52	.04	.06	.80	.03	.14	.16
85	Unrealistic expectations by Ministry of Education	.55	.11	.13	.78	.09	.08	.08
84	Lack of information from Ministry of Education	.54	.09	.13	.75	.03	.15	.13
86	Constraints imposed by the Ministry of Education	.57	.09	.13	.73	.11	.17	.13
82	Demands by Ministry of Education	.54	.14	.04	.63	.13	.23	.13
87	Demands by New Zealand Qualifications Authority	.49	.16	.11	.56	.00	.22	.08
96	Changes in Government Policy	.64	.34	.10	.52	.15	.32	.07
32	Pace of changes	.63	.46	.04	.51	.11	.28	.03
33	Lack of training for changes	.62	.38	.12	.46	.13	.31	-.00
89	Pressure of PPTA's modernisation programme	.48	.01	.22	.45	.19	.24	.02

90	Low perceived support in the community	.57	.11	.34	.44	.25	.07	.17
30	Curriculum changes	.60	.39	.10	.41	.07	.38	.02
9	Conflict between economic/educational values	.54	.21	.18	.41	.13	.33	.00
91	Low perceived status by community	.52	.07	.33	.40	.23	.05	.20
95	Feelings of uncertainty about the future	.63	.31	.24	.38	.22	.23	.12
88	Visits from the Education Review Office	.46	.13	.14	.37	.11	.24	.12
92	Demeaning salary structures for position	.41	.10	.29	.36	.11	.04	.07
	Dealing with Students							
58	Theft by students	.43	.04	.22	.06	.72	.07	-.06
57	Disruptive students	.49	.18	.18	.14	.72	-.02	.01
59	Graffiti/vandalism	.42	-.01	.26	.08	.67	.10	-.05
68	Dealing with a range of social problems	.53	.10	.12	.19	.67	.16	.11
60	Inability to alter students behaviour	.51	.08	.25	.16	.65	.09	.02
69	Dealing with distressed students	.52	.17	.06	.13	.65	.20	.10
24	Having to deal with conflict between student and student	.55	.36	.23	.03	.60	.08	.05
56	Demands by students	.58	.35	.11	.07	.56	.15	.23
55	Pastoral care of students	.56	.33	.09	.03	.55	.20	.22
25	Having to deal with conflict between staff and students	.49	.26	.38	-.03	.54	.01	.04
61	Pressure from community not to suspend out of control students	.52	.07	.32	.25	.44	.11	.09
97	Changes in society	.60	.23	.11	.38	.39	.27	.03
	Managing Resources							
72	Maintaining resources	.47	.01	-.02	.25	.05	.75	.13
73	Creating resources	.44	.03	-.03	.21	.07	.75	.04
71	Allocating resources	.45	.05	.05	.16	.09	.66	.13
74	Conserving energy to save money	.47	.01	.05	.18	.12	.63	.25
75	Saving money	.47	.08	.00	.25	.02	.62	.21
76	New legislation	.44	.05	.03	.37	-.05	.47	.23
34	Introduction of Achievement Based Assessment	.53	.27	.15	.30	.11	.45	-.08

43	Supporting staff through changes	.64	.33	.19	.24	.20	.45	.12
48	Staff development	.53	.28	.31	.07	.14	.42	.01
29	Increased accountability	.63	.38	.15	.26	.12	.42	.23
49	Staff appraisal	.52	.29	.27	.10	.12	.41	.03
31	Implementing new syllabuses	.57	.29	.14	.25	.10	.40	.05
53	Overworked office staff	.52	.28	.28	.09	.08	.39	.14
11	Being responsible for the safety of the school	.56	.32	.12	.20	.18	.38	.17
54	Unsatisfactory working conditions	.48	.13	.27	.17	.13	.37	.07
	Increased Community Involvement in School Management							
80	Interference by board of trustees	.42	.12	.32	.14	-.12	.06	.66
77	Demands by board of trustees	.55	.22	.18	.18	.01	.26	.64
62	Demands by parents	.53	.19	.10	.10	.26	.19	.63
63	Heightened expectations by parents of school	.54	.21	.04	.16	.24	.27	.57
79	Mismanagement by board of trustees	.39	.14	.39	.12	-.15	.01	.56
78	Increasing consultation with board of trustees	.60	.25	.12	.22	.06	.39	.55
64	Dealing with difficult parents	.54	.12	.20	.18	.37	.08	.52
66	Dealing with concerned parents	.57	.30	.04	.05	.40	.23	.51
81	Lack of contact with board of trustees	.36	.07	.36	.10	-.09	.10	.43
65	Time involved in community and parental consultations	.36	.27	.05	.19	.38	.25	.43
67	Dealing with parent/staff conflict	.53	.09	.30	.16	.35	.12	.38
	Eigenvalues		25.99	5.87	3.99	3.29	2.83	2.24
	Percentage of Variance Explained		26.79	6.05	4.11	3.39	2.91	2.30
	Mean score on each scale		72.18	54.38	59.92	33.59	41.59	27.52
	SD of scores on each scale		11.04	10.82	10.95	7.76	9.27	6.26
	Cronbach's Alpha Reliability Coefficient		.90	.91	.91	.90	.87	.86
	Corrected Split Half Reliability Coefficient		.92	.93	.92	.90	.89	.87

The next stage of the analysis was to determine whether this factor structure, determined by the scree test, was a replicable structure and the most robust one available. Using the technique of factor replication, described in chapter six, separate analyses were conducted for 4, 5 and 6 components to see which structure could best be replicated across different subject groups and therefore be considered the most reliable for use in further analysis.

Factor Replication

Factor replication was undertaken using subject groups derived in two different ways from the present sample. Component comparisons were first made using principals - deputy principals as the subject groups and then simply by splitting the sample in two. Four, five and six component solutions were rotated and examined at a range of different hyperplane cut-off values (±.30, ±.40 and ±.50) until a structure was found which could be replicated across the groups. For each comparison for each subject group intercomponent similarity scores (s index) were calculated. The results are set out in Table 7.6 (for Four Factor Solutions), Table 7.7 (for Five Factor Solutions) and Table 7.8 (for Six Factor Solutions).

In each comparison the factors have been reordered where appropriate to increase clarity. This procedure simply has the effect of arranging the s index values for supposedly corresponding factors in the leading diagonal, and it allows the reader to appraise the data at a glance. On the basis of the results shown in Tables 7.6, 7.7 and 7.8, the four factor solution shows evidence of underfactoring in that overlapping clusters of items appear to be falling into two factors, and the six factor solution shows evidence of overfactoring with an unacceptable low s index value in the sixth factor. However, a five factor solution appeared to be the one solution which gave any promise of a replicable component structure.

The five factor solution shows high s index values for all the leading diagonal comparisons and trivial or zero values for all the off diagonal cells (i.e. for non corresponding factors). By itself this pattern of results could be taken as evidence of a

Table 7.6
S Index Values For Four Factor Solutions Across Four Subject Groups Using Three Cut-off points for 97 Item Stressor Scale

		Cut-off Points											
		±.30				±.40				±.50			
		FACTORS				FACTORS				FACTORS			
	Factors	1	2	3	4	1	2	3	4	1	2	3	4
		Principal's Data											
Deputy	1	.82	.56	.23	.09	.77	.36	.10	.00	.78	.15	.00	.00
Principal's	2	.32	.77	.18	.07	.13	.71	.05	.00	.00	.57	.00	.00
Data	3	.21	.19	.77	.52	.04	.00	.65	.50	.00	.00	.55	.33
	4	.06	.34	.35	.63	.00	.27	.16	.44	.00	.14	.00	.46
		Split Sample Data											
		Group 1 Data											
	1	.84	.14	.30	.47	.82	.00	.43	.20	.77	.00	.00	.11
Group 2	2	.17	.74	.19	.22	.00	.80	.00	.29	.00	.59	.00	.17
Data	3	.41	.22	.69	.32	.07	.28	.57	.00	.00	.07	.40	.00
	4	.13	.53	.45	-.09	.26	.00	.50	.00	.10	.00	.42	.00

Note: Factors have been reordered to increase clarity.

Table 7.7
S Index Values For Five Factor Solutions Across Four Subject Groups Using Three Cut-off points for 97 Item Stressor Scale

		Cut-off Points ±.30 FACTORS					±.40 FACTORS					±.50 FACTORS				
	Factors	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
							Principal's Data									
	1	.82	.00	.34	.11	.30	.83	.00	.24	.05	.17	.85	.00	.00	.00	.00
Deputy	2	.25	.82	.20	.26	.15	.09	.81	.04	.06	.00	.00	.82	.00	.20	.00
Principal's	3	.29	.13	.76	.12	.30	.19	.05	.77	.00	.00	.00	.00	.71	.00	.00
	4	.03	.39	.30	.67	.28	.00	.06	.15	.71	.08	.00	.09	.00	.57	.00
	5	.19	.30	.43	.11	.55	.12	.13	.16	.00	.64	.00	.00	.00	.09	.33
							Split Sample Data									
							Group 1									
	1	.80	.06	.11	.24	.52	.85	.00	.00	.00	.00	1.00	.00	.00	.00	.00
Group 2	2	.14	.80	.28	.18	.09	.00	.79	.00	.07	.00	.00	.92	.00	.00	.00
Data	3	.21	.20	.77	.07	.12	.04	.00	.75	.09	.32	.00	.00	.67	.00	.39
	4	.39	.26	.19	.76	.34	.05	.08	.34	.75	.50	.00	.00	.14	.50	.00
	5	.12	.32	.39	.00	.45	.15	.12	.00	.00	.54	.00	.09	.00	.00	.44

Note: Factors have been reordered to increase clarity.

Table 7.8
S Index Values For Six Factor Solutions Across Four Groups Using Three Cut-off points for 97 Item Stressor Scale

		Cut-off Points ±.30 FACTORS						±.40 FACTORS						±.50 FACTORS					
	Factors	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
								Principal's Data											
	1	.80	.21	.06	.18	.27	.13	.87	.00	.00	.00	.23	.00	.83	.00	.10	.00	.00	.00
Deputy	2	.00	.79	.40	.12	.07	.36	.00	.85	.06	.06	.00	.00	.00	.77	.00	.00	.00	.00
Principal's	3	.14	.22	.79	.16	.16	.27	.06	.06	.81	.00	.00	.00	.00	.00	.75	.00	.00	.29
Data	4	.10	.04	.23	.72	.33	.10	.00	.05	.33	.65	.00	.21	.00	.00	.00	.71	.00	.00
	5	.10	.12	15	.11	.72	.37	.00	.00	.00	.00	.55	.42	.00	.21	.00	.00	.60	.00
	6	.38	.15	.10	.00	.15	.21	.33	.00	.00	.08	.00	.00	.25	.00	.00	.00	.00	.00
								Split Sample Data											
								Group 1											
Group 2	1	.85	.11	.04	.14	.09	.28	.85	.00	.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00
Data	2	.07	.78	.22	.09	.04	.11	.06	.79	.00	.06	.00	.00	.00	.92	.00	.00	.00	.00
	3	.16	.28	.76	.15	.10	.00	.08	.04	.70	.29	.05	.28	.00	.00	.71	.00	.00	.00
	4	.35	.19	.28	.68	.29	.41	.06	.00	.00	.63	.00	.10	.00	.00	.00	.44	.00	.00
	5	.13	.32	.33	.00	.53	.00	.18	.14	.00	.06	.54	.00	.21	.00	.00	.00	.64	.00
	6	.35	.04	.00	.00	.52	.47	.00	.00	.00	.07	.46	.11	.00	.00	.00	.71	.00	.00

Note: Factors have been reordered to increase clarity.

stable five factor structure - although it should be remembered that the scale at this point was still very much in a raw state, and the resulting s index tables were not as clear as they would have been had some of the less useful items been removed.

Reanalysis of Stressor Scale

In light of the foregoing it was decided to determine the nature and reliability of the subscales underlying the five replicable factors. In determining which items of the stressor scale comprised a particular subscale, items were included which loaded higher than .30 on the same factor for at least three of the four subject groups in order to allow for some single item unreliability.

The 70 "**best**" items were then subjected to a principal components analysis using the whole sample and the results of the factor loadings of the rotated five factor structure are set out in Table 7.9. The principal components analysis disclosed the presence of a large general factor as before, shown by the uniformly high loadings on the first unrotated factor, indicating that all items were measuring the overall construct of stressor demand (see Table 7.9). Table 7.9 shows Cronbach's alpha reliability coefficients and the corrected split half reliability coefficients calculated for each subscale had consistently high estimates of reliability. The total scale had an alpha coefficient of .96 and a corrected split half of .97.

The first subscale (m = 60.98 SD = 11.78 α = .92) was made up of 19 items which best described *Organisational Changes in Education*. These comprised: changes in knowledge base of Ministry of Education; unrealistic expectations by Ministry of Education; lack of information from Ministry of Education; constraints imposed by the Ministry of Education; demands by Ministry of Education; demands by New Zealand Qualifications Authority; pace of changes; changes in government policy; lack of training for changes; curriculum changes; implementing new syllabuses; way in which change is implemented; pressure of PPTA's modernisation programme; conflict between economic/educational values; introduction of Achievement Based Assessment; new legislation; changes in society; visits from Education Review Office; feelings of uncertainty about the future.

Table 7.9
Principal Components Analysis of 70 Item Stressor Scale with Varimax Rotation

	Organisational Changes in Education	Factor I (Unrotated)	I	II	III	IV	V
83	Changes in knowledge base of Ministry of Education	.53	.78	.12	.02	-.00	.12
85	Unrealistic expectations by Ministry of Education	.55	.77	.17	.07	.07	.01
84	Lack of information from Ministry of Education	.56	.76	.19	.07	-.00	.09
86	Constraints imposed by the Ministry of Education	.58	.74	.16	.06	.07	.14
82	Demands by Ministry of Education	.56	.66	.09	.11	.11	.19
87	Demands by New Zealand Qualifications Authority	.49	.62	.11	.10	.05	.12
32	Pace of changes	.64	.60	.03	.40	.18	.13
96	Changes in government policy	.66	.58	.11	.33	.20	.18
33	Lack of training for changes	.62	.54	.10	.34	.21	.12
30	Curriculum changes	.59	.54	.05	.31	.15	.19
31	Implementing new syllabuses	.55	.49	.07	.22	.17	.24
28	Way in which change is implemented	.58	.49	.18	.39	.05	.10
89	Pressure of PPTA's modernisation programme	.48	.48	.25	-.00	.16	.14
9	Conflict between economic/educational values	.55	.47	.17	.21	.13	.19
34	Introduction of Achievement Based Assessment	.53	.46	.11	.22	.17	.17
76	New legislation	.45	.46	.07	.10	-.07	.43
97	Changes in society	.60	.44	.11	.21	.42	.14
88	Visits from the Education Review office	.45	.40	.12	.12	.14	.20
95	Feelings of uncertainty about the future	.62	.39	.24	.28	.28	.17
	Relationships with Staff						
39	Staff who are uncooperative	.45	.11	.71	.01	.23	-.05
40	Staff who don't listen	.49	.18	.67	.05	.21	-.03
44	Staff who lack commonsense	.45	.16	.65	.02	.16	.00
51	Insufficient support from staff	.53	.14	.65	.11	.09	.21

46	Staff who are dissatisfied	.59	.19	.63	.16	.29	.11
52	Philosophical differences between principal and deputy principal	.37	.03	.63	.07	.00	.10
47	Dealing with conflict between staff and principal or deputy principal	.44	.05	.63	.12	.09	.11
37	Having to discipline staff	.41	.07	.62	.06	.18	-.02
38	Staff not meeting deadlines	.52	.15	.62	.08	.32	-.02
41	Staff who are incompetent	.35	.07	.61	.05	.17	-.14
35	Cooperation between principal and deputy principal	.33	-.04	.60	.07	-.04	.17
45	Staff who have unrealistic expectations of principal and deputy principal	.61	.25	.58	.20	.14	.21
36	Demands of staff	.56	.07	.55	.35	.17	.13
23	Performance not recognised by colleagues	.53	.23	.48	.25	.04	.17
26	Trying to develop better communication	.61	.22	.45	.28	.15	.25
50	Isolation from social networks in school	.43	.17	.42	.06	.05	.28
93	Flow of communication through school	.51	.19	.42	.13	.17	.25
	Quantitative Work Overload						
6	Heavy workload	.50	.14	.04	.72	.07	.12
12	Constant interruptions throughout the day	.62	.17	.13	.63	.32	.11
22	Having to deal with many tasks at once	.62	.13	.11	.62	.31	.24
19	Increased administration	.64	.39	.06	.61	.14	.18
1	Time pressures	.40	.05	.02	.60	.14	.06
2	Not being able to schedule time	.39	-.02	.10	.59	.14	.06
10	Endless paperwork	.56	.38	.03	.59	.00	.19
14	Increase in workload since Tomorrow's Schools	.62	.47	.02	.57	.12	.12
13	Number of meetings to attend	.55	.24	.09	.57	.06	.25
5	Work interfering with private life	.45	.20	.14	.55	-.02	.07
3	Having no rest breaks in the day	.41	.02	.16	.55	.14	.05
15	Lack of consistent planning because of day to day demands	.54	.20	.20	.54	.19	.06
4	No time to keep up with reading	.39	.17	.12	.52	-.04	.04
17	Inability to meet deadlines	.45	.04	.24	.44	.14	.15

	Dealing with Students						
57	Disruptive students	.49	.12	.15	.15	.74	-.02
58	Theft by students	.45	.09	.25	.03	.72	-.04
60	Inability to alter students behaviour	.50	.15	.25	.06	.66	.03
69	Dealing with distressed students	.52	.18	.07	.11	.66	.21
68	Dealing with a range of social problems	.54	.22	.15	.09	.66	.13
59	Graffiti/vandalism	.56	.10	.30	-.01	.65	-.04
55	Pastoral care of students	.43	.08	.09	.27	.62	.28
56	Demands by students	.57	.08	.11	.29	.62	.27
24	Having to deal with conflict between student and student	.56	.09	.22	.30	.61	.08
25	Having to deal with conflict between staff and students	.50	-.01	.39	.24	.54	.01
	Increased Community Involvement in School Management						
78	Increasing consultation with board of trustees	.57	.23	.16	.23	.07	.66
77	Demands by board of trustees	.54	.15	.22	.25	.02	.64
74	Conserving energy to save money	.46	.30	.04	.03	.11	.62
75	Saving money	.47	.36	.02	.12	.02	.58
72	Maintaining resources	.44	.41	-.04	.04	.03	.55
63	Heightened expectations by parents of school	.52	.16	.09	.18	.27	.55
62	Demands by parents	.54	.11	.17	.21	.28	.53
71	Allocating resources	.45	.34	.04	.09	.08	.51
80	Interference by board of trustees	.41	.06	.34	.14	-.59	.51
66	Dealing with concerned parents	.56	.07	.09	.30	.40	.49
	Eigenvalues		18.92	5.19	3.57	2.83	2.36
	Percentage of Variance Explained		27.02	7.41	5.10	4.04	3.37
	Mean score on each scale		60.99	45.93	51.12	28.52	25.55
	SD of scores on each scale		11.78	9.30	7.83	6.46	5.92
	Cronbach's Alpha Reliability Coefficient		.92	.90	.89	.90	.85
	Corrected Split Half Reliability Coefficient		.92	.90	.89	.90	.92

The second subscale (m = 45.93, SD = 9.30 α = .90) was made up of 17 items and best described *Relationships with staff.* These comprised: staff who are uncooperative; staff who don't listen; staff who are dissatisfied; philosophical differences between principal and deputy principal; dealing with conflict between staff and principal and deputy principal; having to discipline staff; staff not meeting deadlines; staff who are incompetent; cooperation between principal and deputy principal; staff who have unrealistic expectations of principal and deputy principal; demands of staff; performance not recognised by colleagues; trying to develop better communication; isolation from social networks in school; flow of communication through school.

The third subscale (m = 51.12, SD = 7.83 α = .89) was made up of 14 items reflecting *Quantitative Work Overload.* These comprised: heavy workload; constant interruptions throughout the day; having to deal with many tasks at once; increased administration; time pressures; not being able to schedule time; endless paperwork; increase in workload since Tomorrow's Schools; number of meetings to attend; work interfering with private life; having no rest breaks in the day; lack of consistent planning because of day to day demands; no time to keep up with reading; inability to meet deadlines.

The fourth subscale (m = 28.52, SD = 6.46 α = .90) was made up of 10 items and labeled *Dealing with Students.* These comprised: disruptive students; theft by students; inability to alter students behaviour; dealing with distressed students; dealing with a range of social problems; graffiti/vandalism; pastoral care of students; demands by students; having to deal with conflict between student and student; having to deal with conflict between staff and students.

The fifth and final subscale (m = 25.55, SD = 5.92 α = .85) was made up of 10 items and was labeled *Increased Community Involvement in School Management.* These comprised: increasing consultation with board of trustees; demands by board of trustees; conserving energy to save money; saving money; maintaining resources; heightened expectations by parents of school; demands by parents; allocating resources; interference by board of trustees; dealing with concerned parents. Table 7.10 shows a clearer FACTOREP factor solution based on a re-examination of the 70 best items.

Table 7.10
S Index Values For Five Factor Solutions Across Four Subject Groups using Three Cutoff Points for Revised 70 item Stressor Scale

		Cut-off Points														
		±.30 FACTORS					±.40 FACTORS					±.50 FACTORS				
	Factors	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
							Principal's Data									
	1	1.00	.04	.08	.13	.32	.91	.00	.00	.00	.27	.92	.00	.00	.00	.00
Deputy	2	.00	.92	.38	.11	.14	.07	.88	.17	.00	.00	.00	.92	.00	.00	.00
Principal's	3	.05	.29	.88	.12	.19	.00	.07	.88	.00	.00	.00	.00	.91	.00	.00
Data	4	.06	.05	.32	.79	.39	.00	.00	.00	.87	.07	.00	.00	.00	.78	.00
	5	.07	.26	.30	.08	.69	.00	.14	.14	.00	.82	.00	.10	.00	.00	.71
							Split Sample Data									
							Group 1 Data									
Group 2	1	.92	.09	.09	.30	.18	1.00	.00	.07	.00	.07	1.00	.00	.00	.00	.00
Data	2	.05	.90	.16	.06	.06	.09	1.00	.00	.00	.07	.00	1.00	.00	.00	.00
	3	.06	.13	.87	.08	.00	.00	.08	.88	.00	.00	.00	.00	.91	.00	.00
	4	.11	.06	.31	.85	.00	.00	.00	.06	.88	.26	.00	.00	.00	.82	.00
	5	.42	.14	.29	.11	.80	.06	.19	.00	.11	.86	.00	.00	.00	.00	.57

Note: Factors have been reordered to increase clarity.

Although the problems associated with over-and under-extraction of components are well documented, (Comrey, 1978; Siegert, McCormick, Taylor and Walkey, 1987) it has been stated that used conservatively and with judgment, the scree test seldom leads to more components being retained than would otherwise be routinely examined, and in the absence of more substantive procedures generally provides appropriate solutions (Dewe, 1991a). However that has not proved to be the case in the present study and the more substantive procedure of FACTOREP has identified the precise nature of the factor structure of the present stressor measure.

The present psychometric examination of the stressor scale showed it to be a highly reliable measure for this New Zealand sample. The FACTOREP procedure was able clearly to identify five replicable factors, and the resulting subscales were shown to be highly reliable. Each yielded more specific information on what appear to be five important sources of work stress for principals and deputy principals and provided a sound measure for the subsequent research. The elegance of the FACTOREP procedure in providing a robust solution to the number of factors problem will be demonstrated even more clearly in the next section evaluating the coping measure.

Evaluation of the Coping Scale, Its Factor Structure and General Psychometric Properties.

Coping Scale

Section III of the questionnaire, described in chapter six, was a 67 item checklist of coping strategies. Respondents were asked to indicate on a five point scale (1=never to 5=always), how frequently they used the actions listed to cope with the problems they faced as a principal or deputy principal.

Stages in Evaluation

Once again the analysis followed three steps:

a) Principal components analysis of the 67 coping strategies,
b) Examination of the components extracted from the above analysis to determine a replicable factor structure that represents the most robust structure of the measure,
c) The creation of composite scales and the evaluation of their psychometric properties, including means, standard deviations and Cronbach's alpha and corrected split half reliabilities.

Data Analysis

In the first stage the 67 item coping scale was subjected to a principal components analysis. While this technique would not determine whether strategies actually fell into the problem - emotion focused groupings as discussed in chapter four, an exploration of the components would suggest whether such groups were valid.

An inspection of the correlation matrix did reveal the presence of some underlying structure, and the ratio of items to sample size of 1 to 10.38 clearly fell within acceptable guidelines. The appropriateness of the correlation matrix for factor analytic methods was determined by computing the Bartlett test of sphericity (9853.79 $p < .0001$) and the Kaiser-Meyer-Olkin measure of sampling adequacy (0.8060). These two measures confirm that the items "cohered psychometrically" (Dziuban & Shirkey, 1974).

The 21 components with eigenvalues greater than or equal to one were first extracted and then considered in relation to the scree or discontinuity test. On the basis of the scree test four components were selected for rotation. Component loadings were set at ± .30 and were described by considering loadings in descending order (Child, 1970).

Results of Psychometric Analysis of 67 Item Coping Scale

The four components explained 11.43, 6.70, 5.06 and 3.45 percent of the variance respectively. Eigenvalues for the different components were 7.66, 4.49, 3.39 and 2.31 respectively. There was no clear general factor meeting the criterion of all or most items loading >.30 on the first unrotated principal component.

The first component was made up of 17 items which best described, S*tand back from and rethink-rationalise the situation.* The second component was made up of 11 items and best described *Do something different from work.* The third component was made up of 15 items and best described *Work on the problem* and the fourth component comprised 10 items and best described *Express feelings.*

Information on the principal components and rotated component solutions are presented in Table 7.11. The component solution could be classified according to the Lazarus and Folkman (1984) distinction, from which component III (work on the problem) represented a problem focused strategy, while components I, II and IV reflected palliative or emotion-focused strategies.

Factor Replication

Efforts to replicate the component structure of coping measures often result in differences in the number of components and the items that load on a component (Latack & Havlovic, 1992; O'Driscoll & Cooper, 1994). Therefore the second stage of this analysis investigated whether the factor structure derived from the scree test was replicable - i.e. to estimate whether the subscales identified are replicable characteristics of the measure itself rather than some idiosyncratic characteristic of the group responding. The factor replication was performed by making component comparisons between the data from the combined principals and deputy principals and then between two groups derived from splitting the sample into two. Component loadings were set at ±.30, ±.40 and ±.50 and two, three and four component solutions were rotated. Component comparisons were made across the two subject groups for each of the rotated solutions until a structure was found which could be replicated across the groups. For each comparison for each subject group intercomponent similarity scores (s index) were calculated.

Table 7.11
Principal Components Analysis of 67 Item Coping Scale with Varimax Rotation

	I	II	III	IV
Stand Back From and Re-think - Rationalise The Situation				
Develop sensitivity to physical and emotional responses to stress	.55	.09	.15	.09
Consciously force yourself to slow down	.54	.27	.10	-.06
Try to think objectively about the situation	.54	-.07	.21	-.30
Reconsider how involved you are at work	.51	.14	-.04	.20
Find time for quietness and solitude	.50	.36	.08	.12
Stand back and rationalise the problem	.50	.07	.30	-.27
Try to reduce your workload	.49	.13	-.02	.27
Reinterpret the situation in a more positive light	.47	.10	.30	.03
Be very diplomatic in the staffroom	.47	.17	.10	-.09
Become aware of what are stress producing situations	.45	.15	.29	-.04
Attempt to strike some balance between home and family	.43	.42	.02	-.05
Try not to take what people say personally	.43	.12	.20	.27
Try to reassure yourself that everything is going to work out	.42	-.14	.00	-.22
Prioritise demands	.40	.02	.36	-.20
Develop techniques for active listening and counseling people you have to deal with	.40	-.11	.35	.01
Try and get as much rest as possible	.38	.22	.04	.12
Have an unfailing optimism that it is worthwhile	.33	-.05	.19	-.14
Do Something Different From Work				
Engage in personal recreation	.10	.70	.16	-.00
Become more involved in non-wok activities	.14	.66	-.02	.13

Engage in engrossing non-work activities	-.21	.64	.04	.12
Make a concerted effort to distract yourself with some fun activities	.30	.57	.06	.16
Play sport	-.11	.56	.09	-.04
Try to get some regular exercise	.14	.56	.12	-.03
Decide to go out with family or friends	.33	.52	.06	.16
Mix with people not connected with teaching	.01	.51	.19	-.09
Throw yourself into your work	-.03	-.48	.15	.17
Take some time out	-.28	.35	.00	.24
Take work home and work on it there	-.02	-.33	.13	.17
Work On The Problem				
Let people know where you stand	.13	.08	.56	-.21
Setup a system of advice and guidance	.06	.00	.55	.03
Arrange help for distressed students	.16	-.16	.54	.10
Talk problems over with colleagues	.04	.13	.52	.09
Deal directly with the situation	.17	-.05	.47	-.26
Confront the problem	.23	.05	.46	-.34
Support victims in the school	.20	-.05	.45	.04
Ask for more consultation	.04	.09	.44	.08
Delegate responsibilities	.06	.21	.43	.00
Attend principal and deputy principal meetings	.08	-.04	.42	.05
Make staff more aware of trouble they cause	.01	.03	.42	.06
Just ignore the situation	-.05	-.08	.41	-.34
Try to predict problems and make contingencies	.24	.01	.41	-.24
Get reassurance from colleagues that they are feeling the same way	.09	.13	.37	.25
Have counselling sessions	-.02	.08	.33	.31

Express Feelings				
Take your feelings out on whoever is around	.10	.03	.06	-.55
Express your irritation to yourself, swearing etc.	-.11	-.08	.03	.55
Get mad at yourself	.02	-.13	.04	.50
Cover up problems rather than deal with them	.01	.04	.33	-.48
Give up and accept what is happening	-.12	.01	.31	-.47
Express your irritation to other colleagues	-.15	.08	.13	.44
Eat more	.03	-.09	.02	.43
Have a good cry	.13	-.14	.06	.42
Lose temper with staff	.20	-.08	.10	-.42
Attend seminars on stress management	.03	.16	.28	.33
Eigenvalues	7.66	4.49	3.39	2.31
Percentage of Variance Explained	11.43	6.70	5.06	3.45
Mean score on each scale	58.70	32.42	51.77	18.32
SD of scores on each scale	6.77	5.78	5.76	3.68
Cronbach's Alpha Reliability Coefficient	.81	.79	.76	.67
Corrected Split Half Reliability Coefficient	.83	.83	.78	.74

The results are set out in Table 7.12 (two Factors), Table 7.13 (three factors) and Table 7.14 (four factors), and they demonstrate that the only solution which gave any promise of a replicable component structure emerged from the rotation of two components. In this case component I is substantially similar (s index =.86 and .84) for both subject groups. Component II (s index =.84 and .71) revealed an almost identical pattern of similarity. The uniformly high s index values in the leading diagonals and the low values in the off diagonal cells for non corresponding factors suggests a close to perfect separation of the two components. Conversely the variation in s index values across the three and four rotated solutions showed little evidence of any robust replicable component structure. On the basis of these results, a two factor solution appeared to be best, and the next step was to determine the nature and reliability of the subscales underlying the two replicable factors.

Reanalysis of Coping Scale

Again in order to allow for some single item unreliability it was decided to identify those items which loaded higher than .30 on the same factor for at least three of the four subject groups. Thirty five items were identified and subjected to a principal components analysis with a two component (varimax) rotation. The results are set out in Table 7.15. The two components accounted for 28% of the variance. Split - half reliability coefficients and coefficient alpha were calculated for each subscale and revealed consistently high estimates of reliability (see Table 7.15).

The first subscale ($m = 53.91$, $SD = 7.70$, $\alpha = .84$) is made up of 17 items which is best described as *Putting things into perspective and getting away from work.* These comprised: engage in engrossing non-work activity; make a concerted effort to distract yourself with some fun; become more involved in non work activities; decide to go out with family and friends; find time for quietness and solitude; engage in personal recreation; attempt to strike some balance between home and family life; consciously force yourself to slow down; take some time out; move on to an activity you get satisfaction from; try and get some regular exercise; reconsider how involved you are at work; try to reduce you workload; try and get as much rest as possible; mix with people not connected with teaching; develop sensitivity to your physical and emotional responses to stress; use holidays to recuperate.

Table 7.12
S Index Values For Two Factor Solutions Across Four Subject Groups Using Three Cut-off Points for 67 Item Coping Scale

		Cut-off Points					
		±.30		±.40		±.50	
		Principal's Data					
		FACTORS		FACTORS		FACTORS	
	Factors	1	2	1	2	1	2
Deputy	1	.86	.08	.80	.05	1.00	.00
Principal's	2	.14	.84	.00	.80	.00	.86
Data							
		Split Sample Data					
		Group 1 Data					
Group 2	1	.84	.08	.68	.06	.71	.00
Data	2	.13	.71	.00	.71	.00	.56

Note: Factors have been reordered to increase clarity.

Table 7.13
S Index Values For Three Factor Solutions
Across Four Subject Groups Using Three Cut-off Points for 67 Item Coping Scale

		Cut-off Point ±.30 FACTORS			Cut-off Point ±.40 FACTORS			Cut-off Point ±.50 FACTORS		
		Principal's Data								
	Factors	1	2	3	1	2	3	1	2	3
Deputy	1	.79	.00	.10	.77	.00	.08	.57	.00	.00
Principal's	2	.09	.71	.37	.07	.73	.09	.00	.86	.00
Data	3	.20	.00	.50	-.08	.00	.50	.00	.00	.00
		Split Sample Data								
		Group 1								
Group 2	1	.82	.17	-.26	.65	.06	.17	.71	.00	.00
Data	2	.04	.78	.13	.00	.71	.00	.00	.67	.00
	3	.04	.11	.53	.00	.09	.42	.00	.00	.00

Note: Factors have been reordered to increase clarity.

Table 7.14
S Index Values For Four Factor Solutions Across Four Subject Groups Using Three Cut-off points for 67 Item Coping Scale

		Cut-off Points											
		±.30 FACTORS				±.40 FACTORS				±.50 FACTORS			
	Factors	1	2	3	4	1	2	3	4	1	2	3	4
		Principal's Data											
Deputy	1	.71	.00	.30	.13	.73	.00	.00	.46	.67	.00	.17	.00
Principal's	2	.06	.67	.09	.53	.00	.71	-.10	.00	.00	.33	.20	.00
Data	3	.00	.50	.64	.06	.00	.00	.42	.20	.00	.00	.00	.00
	4	.13	.00	.55	.07	.00	.00	.18	.00	.00	.00	.00	.00
		Split Sample Data Group 1 Data											
	1	.57	.00	.25	-.47	.70	.00	.46	.00	.71	.00	.33	.00
Group 2	2	.00	.57	.55	-.14	.00	.47	.07	-.27	.00	.38	.00	-.33
Data	3	.22	.00	.41	.17	.00	.39	.10	.00	.00	.25	.00	.00
	4	.53	.17	.06	.00	.00	.18	.00	.00	.00	.00	.00	.00

Note: Factors have been reordered to increase clarity.

Table 7.15

Principal Components Analysis of 35 Item Coping Scale with Varimax Rotation

	Emotion Focused: Putting things into perspective and getting away from work		
	Item	**FI**	**FII**
46	Engage in engrossing non-work activity	.67	-.04
15	Make a concerted effort to distract yourself with some fun	.67	.01
55	Become more involved in non work activities	.65	-.11
23	Decide to go out with family and friends	.64	.01
56	Find time for quietness and solitude	.63	.14
52	Engage in personal recreation	.61	.05
35	Attempt to strike some balance between home and family life	.55	.16
25	Consciously force yourself to slow down	.51	.26
32	Take some time out	.50	-.08
17	Move on to an activity you get satisfaction from	.49	-.04
45	Try and get some regular exercise	.46	.12
57	Reconsider how involved you are at work	.46	.06
58	Try to reduce your workload	.43	.01
44	Try and get as much rest as possible	.42	.11
10	Mix with people not connected with teaching	.41	.11
61	Develop sensitivity to your physical and emotional responses t o stress	.40	.26
40	Use holidays to recuperate	.36	-.04
	Problem Focused: Dealing with the problem through rational task oriented behaviour		
36	Confront the problem	.11	.65
28	Let people know where you stand	.10	.60
20	Deal directly with the situation	.02	.59
37	Prioritise demands	.20	.56
24	Stand back and rationalise the problem	.26	.55
27	Deal with problems rather than cover them up	-.09	.55
1	Be well organised	-.00	.52
8	Try to predict problems and make contingencies	.09	.51
66	Don't just ignore the situation	-.14	.51
13	Try to think objectively about the situation	.18	.50
33	Don't give up and accept what is happening	-.18	.44
62	Develop techniques for active listening and counselling with people you are dealing with	.17	.41
26	Try not to take what people say personally	.27	.41
65	Arrange help for distressed students	.07	.40
63	Support victims in school	.08	.40
5	Set up a system of advice and guidance for teachers having difficulty	.09	.39
34	Don't take your feelings out on whoever is around	-.09	.38
11	Don't lose temper with staff	-.08	.37
	Eigenvalues	5.95	3.86
	Percentage of Variance Explained	17.00	11.03
	Mean score on each scale	53.91	58.59
	SD of scores on each scale	7.70	4.70
	Cronbach's Alpha Reliability Coefficient	.84	.81
	Corrected Split half Reliability Coefficient	.84	.86

The second subscale (m = 58.59, SD = 4.70, α = .81) is made up of 18 items and describes *Dealing with the problem through rational task oriented behaviour*. These comprised: confront the problem; let people know where you stand; deal directly with the situation; prioritise demands; stand back and rationalise the problem; deal with problems rather than cover them up; be well organised; try to predict problems and make contingencies; don't just ignore the situation; try to think objectively about the situation; don't give up and accept what is happening; develop techniques for active listening and counselling with people you are dealing with; try not to take what people say personally; arrange help for distressed students; support victims in the school; set up a system of advice and guidance for teachers having difficulty; don't take your feelings out on whoever is around; don't lose temper with staff.

After refining the coping scale in this way Table 7.16 shows a near perfect replication of the two factors when FACTOREP is applied again. Applying the Folkman and Lazarus (1980) schema to these results suggests that component I is *emotion focused* and component II *problem focused.* The FACTOREP procedure was able to clearly identify two replicable components which could be identified in all four groups of the sample. Moreover the two resulting subscales were shown to be highly reliable. This finding has implications for the measurement of coping which will be addressed in the discussion chapter.

Having established the robust psychometric properties of the coping scale and the precise nature of its factor structure, it was necessary to evaluate the final measure, the leisure needs scale, and it is to this that this chapter now turns.

Table 7.16
S Index Values For Two Factor Solutions Across Four Subject Groups Using Three Cut-off Points for the Revised Coping Scale

		Cut-off Points					
		±.30		±.40		±.50	
		FACTORS		FACTORS		FACTORS	
		Principal's Data					
	Factors	1	2	1	2	1	2
Deputy	1	.94	.06	.85	.00	.89	.00
Principal	2	.06	.94	.00	.77	.00	.88
Data							
		Group 1 Data					
		Split Sample					
Group 2	1	1.00	.16	.85	.00	.75	.00
Data	2	.00	.89	.00	.79	.00	.70

Note: Factors have been reordered to increase clarity.

Evaluation Of The Scale of the Important Reasons for Using Leisure to Cope with Work Related Stress, Its Factor Structure and General Psychometric Properties.

Leisure Scale

Section IV of the questionnaire, described in Chapter six, was a 34 item scale of reasons why people might use leisure to cope with stress at work. Respondents were asked to consider each of the statements and indicate on a five point scale (1 = of no importance to 5 = very important) how important each was to them as a means of coping with work related stress.

Stages in Evaluation

As with the previous measures the analysis followed three steps:

a) Principal components analysis of the 34 need related items.
b) Examination of the components extracted from the above analysis to determine a replicable factor structure that represents the most robust structure of the measure.
c) The creation of composite scales and the evaluation of their psychometric properties

including means, standard deviations, Cronbach's alpha and corrected split half reliabilities.

Data Analysis

To begin the evaluation a principal components analysis was carried out on the 34 items. An inspection of the correlation matrix revealed the presence of some underlying structure and the ratio of items to sample size of 1 to 20.44 clearly fell within acceptable guidelines. The appropriateness of the correlation matrix for factor analytic methods was determined by computing Bartlett's test of sphericity (9069.31 $p<.0001$) and the Kaiser-Meyer-Olkin measure of sampling adequacy (0.85902). These two measures confirm that the items "cohered psychometrically" (Dziuban & Shirkey, 1974). The eight components with eigenvalues greater than or equal to one were first extracted and then considered in relation to the scree or discontinuity test. After considering the scree test, four components were selected for rotation. Component loadings were set at $\pm.30$ and the components were described by considering loadings in descending order (Child, 1970).

Results of Psychometric Analysis of 34 Item Leisure Scale

The four components explained 23.18, 10.32, 7.18, and 5.35 percent of the variance respectively. Eigenvalues for the different components were 7.88, 3.50, 2.44 and 1.82 respectively (Table 7.17). Inspection of the unrotated solution revealed a general factor although not as large as the large general factor of the stressor scale. With the exception of three items all 34 items loaded above .30 on the first unrotated (general) factor (see Table 7.17). The rotated solution presented in Table 7.17 produced four dimensions or components. The values of Cronbach's alpha reliability coefficient and the corrected split half reliability coefficient were high for the first three components but unacceptably low for the fourth.

The first component was made up of 11 items and best described *Physical* and *Intellectual Challenge.* The second component was made up of 14 items and best described *Relaxation and Freedom.* The third component comprised three items which

Table 7.17
Principal Components Analysis of 34 item Leisure Scale with Varimax Rotation

	Physical and Intellectual Challenge	First Factor (Unrotated)	I	II	III	IV
28	To do something challenging	.65	.73	.12	.10	.18
16	To work towards a goal	.59	.73	.10	.04	.12
10	To use my skills and talents	.60	.67	.14	-.05	.32
15	To achieve status or recognition	.40	.64	.14	.17	.05
34	To be totally focused	.66	.61	.43	-.01	-.04
21	To complete with others	.32	.58	.24	.35	-.08
17	To keep busy	.48	.58	.15	-.06	.05
29	To do something risky	.44	.55	.01	.20	.01
9	To learn new things	.63	.54	.25	.02	.42
13	For excitement and stimulation	.59	.52	.14	.32	.18
33	To do something where I am in control	.52	.48	.43	-.05	.19
	Relaxation and Freedom					
24	To be free to do what I like	.48	.08	.73	.04	-.11
31	To do something quiet and peaceful	.40	-.14	.70	.00	.18
11	To relax	.47	-.13	.65	.38	.11
18	To do something different from work	.56	.14	.61	.18	.12
25	To do something absorbing	.65	.45	.61	-.09	-.01
30	To do something that is important to me	.64	.37	.60	.07	.02
26	To do something for its own sake	.54	.30	.59	.13	.04
12	To reduce stress	.44	-.05	.54	.47	.01
1	To feel better mentally	.53	.11	.50	.46	.02

32	To rest and do nothing	.18	-.23	.45	.04	.12
14	To enjoy nature	.43	.09	.44	.04	.28
6	To get pleasure	58	.17	.43	.42	.24
19	To be creative	.54	.35	.42	-.24	.40
23	To daydream/fantasise	.30	.17	.37	.08	-.21
	Improved Health and Enjoyment					
8	To get exercise	.32	.09	.03	.77	.02
7	To improve physical health	35	.15	.04	.75	.03
5	To have fun	.53	.12	.32	.49	.34
	Social Interaction					
2	To do things with my friends	.36	.10	.05	.28	.61
3	To meet new people	.46	.35	-.03	.27	.58
20	To contribute to the community	.29	.27	-05	-.07	.56
27	To be with my family	.24	-.07	.22	.05	.45
4	To meet people of the opposite sex	.39	.32	-.02	.28	.33
22	To be away from my family	.16	.30	.04	.11	-.33
	Eigenvalues		7.88	3.51	2.44	1.82
	Percentage of variance explained		23.18	10.32	7.18	5.35
	Mean score on each scale		27.40	47.94	11.27	15.19
	SD of scores on each scale		7.78	8.49	2.50	3.46
	Cronbach's Alpha Reliability Coefficient		.86	.84	.71	.56
	Corrected Split half Reliability Coefficient		.89	.85	.80	.66

best described *Improved Health and Enjoyment,* and the fourth component comprised six items and best described *Social Iinteraction.*

Factor Replication

The second stage of this analysis investigated whether the factor structure identified by the scree test was replicable. Principal component analyses were performed for each of the four groups (principals, deputy principals and the sample split into two). Two, three and four factor solutions were obtained using a varimax rotation and the s index values were found using the FACTOREP procedure to compare solutions from the four groups. Loadings of ±.30, ±.40 and ±.50 were set as specified hyperplane cut-off levels. As before, the number of replicable factors was then determined, the underlying subscales interpreted, and the reliability of these subscales calculated. The results are set out in Table 7.18 (for two factor solutions), Table 7.19 (for three factor solutions) and Table 7.20 (for four factor solutions).

Table 7.18 presents quite clear evidence for a replicable two factor solution with substantial values in the diagonal and values at other points tending towards zero.

There is much disagreement about which items are related to each factor at the ±.30 level, and this could be caused by the influence of a general factor leading to relatively high loadings overall.

From inspection of the present data the two factor solution appears to be substantially better when the ±.40 criterion level is used. In the two factor solution there are relatively large values in the main diagonal cells, (indicating a high level of agreement about the items which are related to each factor across the two groups being compared) and there are relatively low values in the off diagonal cells (indicating a low level of disagreement about which items are related to each factor). The three factor solution on the other hand has relatively low values in the main diagonal cells (indicating a relatively low level of agreement about the items which are related to each factor) and relatively high values in the off diagonal cells (indicating a substantial degree of disagreement).

Table 7.18
S Index Values For Two Factor Solutions Across Four Subject Groups Using Three Cut-off points for 34 Item Leisure Scale

		Cut-off Points					
		±.30		±.40		±.50	
Principal's Data							
		FACTORS		FACTORS		FACTORS	
	Factors	1	2	1	2	1	2
Deputy	1	.89	.22	1.00	.00	1.00	.00
Principal's Data	2	.44	.89	.07	.92	.00	.90
Split Sample Data							
		Group 1 Data					
Group 2	1	.83	.47	.92	.00	.90	.00
Data	2	.17	.83	.27	.79	.00	.78

Table 7.19
S Index Values For Three Factor Solutions Across Four Subject Groups Using Three Cut-off points for 34 Item Leisure Scale

		Cut-off Points								
		±.30			±.40			±.50		
		FACTORS			FACTORS			FACTORS		
	Factors	1	2	3	1	2	3	1	2	3
		Principal's Data								
Deputy	1	.91	.30	.08	.85	.39	.08	.75	.00	.38
Principal's	2	.20	.88	.47	.08	.75	.40	.22	.67	.00
Data	3	.43	.19	.88	.11	.00	.57	.00	.14	.50
		Split Sample Data								
		Group 1 Data								
	1	1.00	.29	.29	.89	.25	.27	1.00	.00	.89
Group 2	2	.36	.94	.24	.36	.86	.00	.14	.75	.00
Data	3	.14	.47	.88	.08	.33	.79	.87	.00	.00

Note: Factors have been reordered to increase clarity

Table 7.20
Leisure Scale S Index Values For Four Factor Solutions Across Four Subject Groups Using Three Cut-off points for 34 Item Leisure Scale

		Cut-off Points											
		±.30				±.40				±.50			
		FACTORS				FACTORS				FACTORS			
	Factors	1	2	3	4	1	2	3	4	1	2	3	4
		Principals Data											
Deputy	1	.87	.17	.43	.23	.85	.36	.08	.30	.75	.00	.38	.00
Principal's	2	.40	.83	.14	.38	.00	.73	.40	.00	.22	.67	.00	.00
Data	3	.00	.40	.73	.30	.11	.00	.50	.20	.00	.00	.50	.00
	4	.20	-.15	.00	.50	-.12	-.14	.00	.50	.00	.00	.00	.00
		Split Sample Data											
		Group 1 Data											
	1	94	.33	.24	.31	.92	.07	.22	.11	.90	.20	.00	.00
Group 2	2	.33	.90	.17	-.13	.31	.85	.00	-.11	.00	.75	.00	.00
Data	3	.40	.15	.87	.00	.40	.00	.71	.00	.14	.00	.25	.00
	4	.07	.36	.54	.44	.00	.50	.28	.33	.00	.00	.67	.00

The two-factor solution also holds up much better when the ±.50 cutoff is adopted, although at this level, only a relatively small number of items are being used. The three factor solution for the principals and deputies at this level shows only relatively low levels of agreement down the main diagonal while the split group solution indicates that there is no agreement about the third factor at all. There the group 1 third factor items tend to be on the group 2 first factor, together with the group 1 first factor items, and the group 2 third factor items appear to fall on the group 1 first factor, together with their first factor items, with no indication that any items fall on the third factor for both groups.

Reanalysis of Leisure Scale

In the light of the foregoing discussion, the nature and reliability of the subscales underlying the two component solution was explored. In determining which items of the leisure checklist comprised a particular subscale, it was decided to include any item which loaded higher than .30 on the same factor for at least three of the four subject groups in order to allow for some single item unreliability. The 24 items elicited this way were again subjected to a principal components analysis with a two component solution. The results are set out in Table 7.21. There the two components can be seen to account for 42% of the variance. In addition Cronbach's alpha reliabilities and the corrected split half reliabilities were calculated for each sub-scale and revealed consistently high estimates of reliability. For the total scale of needs Cronbach's alpha was .88 and the corrected split half .92.

The first subscale (m = 28.90, SD = 7.92 α = .86) comprised 12 items in need related terms that could be met by the more active, challenging nature of leisure. They included: to do something challenging; to work towards a goal; to use my skills and talents; to achieve recognition and status; to compete with others; for excitement and stimulation; to learn new things; to do something risky; to keep busy; to be totally focused; to meet new people; to meet people of the opposite sex.

Table 7.21
Principal Components Analysis of 24 Item Leisure Scale with Varimax Rotation

	Factor I	I	II
Active/Challenge Needs	**(Unrotated)**		
To do something challenging	.66	.75	.18
To work towards a goal	.59	.71	.12
To use my skills and talents	.61	.70	.17
To achieve recognition and status	.40	.67	-.10
To compete with others	.33	.62	-.15
For excitement and stimulation	.60	.60	.25
To learn new things	.63	.60	.30
To do something risky	.44	.57	.05
To keep busy	.48	.54	.13
To be totally focused	.67	.54	.41
To meet new people	.45	.52	.12
To meet people of opposite sex	.37	.45	.07
Passive/Recuperative Needs			
To relax	.46	-.09	.75
To do something different from work	.57	.13	.68
To do something quiet and peaceful	.38	-.12	.67
To be free to do what I like	.48	.01	.66
To reduce stress	.44	-.04	.66
To feel better mentally	.52	.12	.62
To do something that is important to me	.65	.31	.61
To get pleasure	.59	.25	.59
To do something absorbing	.67	.38	.56
To do something for its own sake	.55	.23	.54
To have fun	.53	.25	.50
To enjoy nature	.40	.12	.46
Eigenvalues		6.74	3.21
Percentage of Variance Explained		28.08	13.38
Mean score on each scale		28.90	44.17
SD of scores on each scale		7.92	7.51
Cronbach's Alpha Reliability Coefficient		.86	.85
Corrected Split Half Reliability Coefficient		.89	.85

The second subscale (m = 44.17, SD = 7.51 α = .85) reflected items in need related terms that could be met by the more passive recuperative nature of leisure. They included: to relax; to do something different from work; to do something quiet and peaceful; to be free to do what I like; to reduce stress; to feel better mentally; to do something that is important to me; to get pleasure; to do something absorbing; to do something for its own sake; to have fun; to enjoy nature.

While there appeared to be a strong general factor of needs perceived important to be met through using leisure to cope with stress, the scale was able to be dimensionalised clearly into two replicable components. One that was active, challenging and more socially oriented in nature and the other that was more passive, recuperative and solitary oriented. The two dimensions were clearly demonstrated when FACTOREP was applied to the components again and there was near perfect replication of the two components (Table 7.22).

Because substantial evaluative work has already been undertaken in New Zealand on the 21 item *Hopkins Symptom Checklist,* (Green, Walkey, McCormick & Taylor, 1988) and the 20 item *General Health Questionnaire,* (Siegert, McCormick, Taylor & Walkey, 1987), the last two scales to be evaluated here, it was only necessary to conduct a principal components analysis to examine the stability of the reported factor structures and their internal consistency. The results as set out below confirmed the factor structures and their reliability.

Evaluation of the Hopkins Symptom Checklist, Its Factor Structure and General Psychometric Properties.

Hopkins Symptom Checklist

The Hopkins Symptoms Checklist (HSCL) is a self report symptom rating inventory found by researchers in the United States to be both a reliable and valid psychological instrument for the measurement of neurotic symptoms (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) as well as a useful indicator of symptoms

Table 7.22
S Index Values For Two Factor Solutions Across Four Subject Groups Using Three Cut-off points for Revised 24 Item Leisure Scale

		Cut -off Points					
		±.30		±.40		±.50	
		Principal's Data					
		FACTORS		FACTORS		FACTORS	
	Factors	1	2	1	2	1	2
Deputy	1	1.00	.23	1.00	.00	.90	.00
Principal's Data	2	.29	.93	.08	1.00	.00	.90
		Split Sample Data					
		Group 1 Data					
Group 2	1	1.00	.15	1.00	.00	1.00	.00
Data	2	.36	.93	.17	.92	.00	.90

present in normal populations (Caplan, Andrew, Conway, Abbey, Abramis & French, 1985; Coyne, Aldwin & Lazarus, 1981; Hirsch, Moos & Reischl, 1985).

The HSCL has several versions available but according to Green, Walkey, McCormick and Taylor (1988) while all versions of the Symptom Checklist appear to measure a general distress factor the different versions claim diverse independent symptom dimensions. On the basis of this Walkey and McCormick (1985) developed a version of the HSCL with a replicable factor structure using 45 items with three underlying factors. A briefer 21 item version was then developed by Green, Walkey, McCormick and Taylor (1988) with a confirmed, replicable, three factor structure underlying the 21 items. Again this factor replication procedure utilised FACTOREP, a factor comparison procedure Walkey and McCormick (1985) developed during the process of identifying the three factor structure of the HSCL. This procedure was also used in the present study to measure outcomes of stress and the results below confirm the robust and stable nature of the 21 item HSCL.

The Present Study - Data Analysis

As the HSCL has been well evaluated and validated (see Deane, Leathem & Spicer, 1992) only two statistical analyses were conducted.

1. Cronbach's alpha coefficient reliabilities and corrected split half reliabilities
2. The three factor structure reported by the authors of the twenty one item version of the HSCL was examined using a principal components analysis and subsequent varimax rotation.

Results of Psychometric Analysis

1. The values of Cronbach's alpha coefficient and the corrected split-half reliability coefficient were both high at .89 and .91 respectively for the full 21 item scale. For comparison purposes the reliabilities for the total scale obtained by Green et al (1988) were .90 and .91 respectively.
2. The principal components analysis disclosed the presence of a large general factor shown by the high loadings with a mean value of .58 on the first unrotated factor (Table 7.23). Only one item loaded below .40.

Table 7.23
Principal Components Analysis of the 21 item HSCL with Varimax Rotation

	Factor I	I	II	III
General Feelings of Distress	(Unrotated)			
9 Feeling others do not understand you or are unsympathetic	.60	.78	.12	.11
8 Your feelings being easily hurt	.69	.76	.21	.22
10 Feeling that people are unfriendly or dislike you	.49	.68	.10	.03
6 Feeling lonely	.62	.65	.14	.26
7 Feeling blue	.65	.64	.17	.30
12 Feeling inferior to others	.60	.58	.38	.04
4 Blaming yourself for things	.64	.56	.46	.05
Performance Difficulty				
2 Trouble remembering things	.54	.10	.74	.07
16 Your mind going blank	.60	.06	.67	.30
11 Having to do things very slowly i norder to be sure you are doing them right	.62	.27	.63	.15
19 Trouble concentrating	.65	.20	.59	.33
14 Having to check and double-check what you do	.65	.32	.58	.21
3 Worried about sloppiness or carelessness	.62	.41	.58	.05
1 Difficulty in speaking when you are excited	.49	.11	.50	.22
Somatic Distress				
13 Soreness of your muscles	.51	.13	.07	.74
20 Weakness in parts of your body	.60	.16	.19	.74
21 Heavy feelings in your arms and legs	.60	.10	.26	.72
5 Pains in the lower part of your back	.38	.13	-.03	.60
15 Hot or cold spells	.46	.07	.25	.51
18 A lump in your throat	.40	.07	.15	.51
17 Numbness or tingling in parts of your body	.49	.15	.23	.51
Eigenvalues		6.90	2.03	1.43
Percentage of Variance Explained		32.85	9.66	6.81
Mean score on each scale		11.14	11.69	10.04
SD of scores on each scale		3.58	3.41	3.24
Cronbach's Alpha Reliability Coefficient		.85 (.86)	.81 (.85)	.78 (.75)
Corrected Split Half Reliability Coefficient		.85 (.89)	.83 (.88)	.80 (.80)

* Reliability estimates shown in parentheses are from Green et al (1988)

3. The results of the three component varimax rotation, show all three factors reported by Green, Walkey, McCormick and Taylor (1988) were clearly evident. In each case the seven relevant items loaded at .50 or higher on the appropriate factor and below .50 on the two other factors. The reliabilities of the individual subscales are shown in Table 7.23. Inspection of these figures reveals that both the overall test and the three independent subscales possess very high reliability and its content provides specific and detailed information of levels of discomfort.

As normative data are available on the HSCL for New Zealand groups the means for the principals and deputy principals can be compared. Table 7.24 presents means for the HSCL for 224 New Zealand registered nurses (Green, 1989 cited in Deane, Leathem & Spicer, 1992) and the present sample of principals and deputy principals. The medians were inspected to ensure that there were no marked deviations from normality.

For Performance Difficulty and Somatic Distress, principals and deputy principals scored higher than nurses. For General Feelings of Distress and Total Distress nurses scored higher than principals and deputy principals. Independent two-tailed tests for two means for large samples were conducted and revealed these differences were statistically significant for Performance Difficulty, $z = 2.38$, n = 674, $p < .05$; Somantic Distress, $z = 4.35$, n = 676, $p < .001$; General Feelings of Distress, $z = 11.11$, n = 679, $p < .001$; Total Distress, $z = 4.70$, n = 690, $p < .001$.

Table 7.24
Mean Scores of Nurses, Principals and Deputy Principals on the HSCL-21 Scales

Scales	Nurses			Principals and Deputy Principals		
	N	$\overline{X}$	SD	N	$\overline{X}$	SD
Performance Difficulty	224	11.09	3.21	674	11.69	3.41*
Somatic Distress	224	9.13	2.52	676	10.04	3.24***
General Feelings of Distress	224	15.37	5.76	679	11.15	3.58***
Total Distress	224	35.58	8.52	690	32.73	8.51***

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

Clearly in comparison with nurses another professional and vocational group, principals and deputy principals are experiencing significant levels of distress on particular outcomes. The fact that nurses are predominantly female and the present sample has a larger proportion of males would appear to have little bearing on this result as Deane, Leathem and Spicer (1992) have demonstrated that females have a tendency to score higher on the HSCL making any difference between the nurses and the present sample smaller and more difficult to detect. This makes the present result a conservative comparison of scale scores.

Evaluation of the General Health Questionnaire, Its Factor Structure and General Psychometric Properties.

General Health Questionnaire

The General Health Questionnaire (GHQ) is a self administered screening test for detecting non-psychotic psychiatric disorders in community populations (Goldberg, 1972). As well as identifying probable psychiatric cases for subsequent diagnostic interviews, it may be used to compare mean levels of psychological disturbance found in different groups (e.g. Farmer & Harvey, 1975). Several versions of the GHQ have been developed but an extensive series of factor analyses by Siegert, McCormick, Taylor & Walkey, (1987), utilising the s index as incorporated into the FACTOREP procedure failed to confirm the factor structures that have previously been claimed for the 12, 28, or 60 item versions of the GHQ - i.e. giving a vivid illustration of the pitfalls inherent in determining a subscale structure based upon any single factor analysis where the criterion for the number of factors to rotate is typically mathematical rather than psychological. However Siegert, McCormick, Taylor and Walkey (1987), developed a brief twenty item version of the GHQ with a replicable four factor structure, by eliminating those items which appeared to comprise the least stable factors when compared across four different groups. The four factors were identified as those Goldberg and Hillier (1979) called General Illness, Sleep Disturbance, Anxiety and Dysphoria and Severe Depression. The reliability of both this twenty item test as a whole and of the four separate subscales has been shown to be consistently high. This test was used in the present study and the results below confirm the robustness of the factor structure of the GHQ.

The Present Study Data Analysis

Because considerable evaluative work on the GHQ has already been done (Siegert, McCormick, Taylor & Walkey, 1987) two statistical analyses were undertaken.

1. Cronbach's alpha coefficient and corrected split-half reliabilities were calculated.
2. The four factor structure reported by the authors of the twenty item version of the GHQ was examined using a principal components analysis and subsequent varimax rotation.

Results of Psychometric Analysis

1. The values of Cronbach's alpha coefficient of reliability and the corrected split-half reliability coefficient for the total scale were both high at .91 and .93 respectively. The reliabilites for the total scale obtained by Siegert et al (1987) were .90 and .91 respectively.
2. The principal components analysis disclosed the presence of a large general factor shown by the high loadings with a mean value of .64 on the first unrotated factor, (Table 7.25) and with only two items loading below .40.
3. The results of the four factor varimax rotation, show all four factors reported by Siegert, McCormick, Taylor and Walkey (1987) were clearly evident (Table 7.25). In each case the five relevant items loaded at .50 or higher on the appropriate factor and below .50 on all the others. Inspection of the Cronbach's alpha and corrected split half reliabilities obtained for the individual subscales shown in Table 7.25 reveals that both the overall test and the four independent subscales possess very high reliability, and its content provides specific and detailed information on four dimensions of distress.

Data Comparison Across Samples

On a Likert scoring method of 1-4 the total GHQ scores ranged from a minimum of 20.00 to a maximum of 67.00 with a median score of 33.00. The mean was 34.08 with a standard deviation of .446. But in order to compare the scores of principals and deputy principals with other population groups the data was recoded to use a Likert

Table 7.25
Principal Components Analysis of the 20 item GHQ with Varimax Rotation

	Factor I (Unrotated)	FI	FII	FI	FIV
General Illness					
1 Been feeling perfectly well and in good health?	.58	.86	.11	.09	.06
4 Felt that you are ill?	.63	.83	.12	.18	.08
3 Been feeling run down and out of sorts?	.75	.77	.27	.33	.04
2 Been feeling in need of a good tonic?	.59	.74	.21	.12	.07
5 Been feeling full of energy?	.65	.66	.21	.31	.02
Sleep Disturbance					
9 Had difficulty in staying asleep once you are off?	.70	.17	.86	.19	.09
10 Been having restless. disturbed nights?	.73	.22	.84	.23	.09
6 Found yourself waking early and unable to get back to sleep?	.68	.21	.77	.21	.09
8 Had difficulty in staying asleep once you are off?	.57	.09	.69	.23	.05
7 Been getting up feeling your sleep hasn't refreshed you?	.70	.29	.63	.31	.09
Anxiety Dysphoria					
15 Been feeling nervous and strung-up all the time?	.71	.22	.25	.74	.09
14 Been losing confidence in yourself?	.71	.20	.22	.74	.21
13 Been feeling unhappy and depressed?	.76	.28	.27	.70	.20
12 Found everything getting on top of you?	.69	.28	.22	.70	.08
11 Been getting scared or panicky for no good reason?	.64	.11	.36	.64	.05
Severe Depression					
18 Thought of the possibility that you might make away with yourself?	.35	.05	.06	.01	.90
20 Found that the idea of taking your own life kept coming into your mind?	.36	.03	.07	.05	.85
19 Found yourself wishing you were dead and away from it all?	.40	.07	.09	.10	.81
17 Felt that life isn't worth living?	.49	.08	.07	.34	.67
16 Felt that life is entirely hopeless?	.52	.05	.09	.48	.50
Eigenvalues		7.74	2.66	1.79	1.26
Percentage of Variance Explained		38.70	13.30	8.95	6.30
Mean score on each scale		10.30	10.00	8.30	5.62
SD of scores on each scale		3.23	3.50	3.00	1.59
Cronbach's Alpha Reliability Coefficient		.88 (.84)	.88 (.80)	.87 (.81)	.86 (.90)
Corrected Split Half Reliability Coefficient		.89	.88	.88	.86

* Reliability estimated shown in parentheses are from Siegert et al (1987)

scoring of 0-3. Thus Table 7.26 presents the adjusted means for the GHQ for 300 unemployed subjects, university students, (Siegert, 1988), and principals and deputy principals. It shows for principals and deputy principals that the overall mean score on the GHQ was 14.16 with a standard deviation of 8.85 and a range of 47.00. The mean score for the General Illness subscale was 5.30 with a standard deviation of 3.23 and a range of 15.00. The mean score for the sleep disturbance subscale was 4.99 with a standard deviation of 3.50 and a range of 15.00. For the subscale Anxiety/Dysphoria the mean score was 3.29 with a standard deviation of 2.99 and a range of 15.00. The Severe Depression subscale had a mean of .617 with a standard deviation of 1.59 and a range of 13.00. The fact that the range for three of the four subscales was 15.00. indicates that at least some subjects scored the minimum or the maximum on these three subscales as each subscale contains five items scored on a 0-3 basis.

It is interesting to compare these scores with those available of 300 unemployed subjects (Siegert, 1988). There the unemployed had a mean of 18.19 for their total score on the GHQ20 significantly higher than the principals and deputy principals who had a mean of 12.54 for their total score on the GHQ20. However, as can be seen from Table 7.26 the principals and deputy principals scored higher on the General Illness Subscale and the Sleep Disturbance Subscale than the unemployed sample. On the Anxiety/Dysphoria subscale and Severe Depression the unemployed scored higher than principals and deputy principals. Independent two-tailed tests for two means for large samples were conducted and revealed the differences were statistically significant for Anxiety, $z = 7.43$, ($n = 685$), $p < .001$; Severe Depression, $z = 11.67$; $n = 689$, $p < .001$; Total GHQ, $z = 5.76$, $n = 692$, $p < .001$. The differences for General Illness and Sleep Disturbance were not significant, the results showing that the principals and deputy principals were experiencing similar levels of distress on these symptoms, to the unemployed.

These results show that compared with other groups in the community principals and deputy principals are experiencing stress but not so much as to be clinically depressed. It can also be said that this outcome measure of stress used and its subscales, displayed a high level of internal consistency, replicated the reported factor structures and constitutes useful comparative data.

Table 7.26
Mean scores of Unemployed Subjects and Principals and Deputy Principals on the GHQ-20 Scales.

Scales	Unemployed			Principals/ Deputy Principals		
	N	$\bar{x}$	SD	N	$\bar{x}$	SD
General Illness	300	5.1	3.33	681	5.30	3.23
Sleep Disturbance	299	4.80	3.44	687	4.99	3.50
Anxiety/Dysphoria	300	5.01	3.51	685	3.30	3.00***
Severe Depression	300	3.28	3.81	689	.617	1.59***
GHQ Total	299	18.19	11.10	692	14.16	8.85***

***p< .001

Summary

In response to the argument of Walkey and McCormick (1985) that the usefulness of subscales in any questionnaire is limited by the extent to which the factors and consequent subscales are based upon replicable characteristics of the questionnaire itself, rather than upon the idiosyncratic characteristics of the responding group, an extensive evaluation of all measures used in the present study was undertaken. The usefulness of the FACTOREP procedure in providing a robust solution to the number-of- factors problem has been confirmed by these evaluations. The FACTOREP procedure was able to clearly identify five replicable factors in the stressor measure, two replicable factors in the coping scale, two replicable factors in the leisure measure and confirmed the presence of the reported factor structures of the GHQ and HSCL. The resulting subscales were shown to be highly reliable and psychometrically sound for subsequent research purposes. It has to be acknowledged that to provide a definitive

solution to the factor structure of the newly developed scales, comparisons should be made across other independent subject groups. However the rigorous evaluation of the psychometric characteristics of the measures across four groups of the present large sample has established the most robust psychometric properties of the measures available at this time and the precise nature of the factor structures for further analysis.

It is considered that the FACTOREP procedure has established a best estimate of the factor structures of the new measures while the replication of the factor structures and reliabilities of the HSCL and GHQ with these completely independent samples, reinforces confidence in the methods used.

This chapter set out to test the reliability of the research instrument. Although a small number of items were rejected as part of the principal components analysis, the FACTOREP procedure and reliability testing confirmed the overall reliability of the survey instrument. The next chapter will explore the relationship between work stress, coping and leisure and psychological symptoms that represent the respondents' state of health.

Chapter 8: Main Study: Work Stress and the Role of Coping and Leisure in a Managerial Sample

Having established the psychometric properties of the measures of the dependent and independent variables, the study set out to explore the relationships between the work stressors, coping and leisure (the independent variables) and stress reactions (psychological symptoms) the dependent variables. In particular it set out to first identify and consider the measurement of sources of work stress, coping strategies and leisure, and then second to explore the relationships between these variables and the dependent variables (psychological symptoms). The aim in the latter was to explore the main and moderating effect of coping and leisure on the affective reactions to each of the five work stressors. The present chapter includes the following sections:

a) a statistical analysis, using stepwise regression, of the relationship between work stressors and stress reactions (psychological symptoms).
b) a statistical analysis, using multiple moderated regression, to explore main and moderating effects of coping and leisure on the different psychological states.
c) a graphical representation of the form and nature of significant interactions.
d) content analysis of open ended questions.

Results

The Correlations Between the Measures

The correlations between the dependent and independent variables are set out in Table 8.1. Generally, they reveal patterns of association with significant relationships more commonly between stressors and problem focused coping than emotion focused coping; stressors and active and passive leisure; and stressors and stress reactions. Significant positive relationships were established between active and passive leisure and the HSCL measures of psychological symptoms, and between passive leisure

Table 8.1
Correlation Matrix of Independent and Dependent Variables (n = 695)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
STRESSORS																	
1 Organisational Change	**.92**																
2 Managing Staff	.49**	**.90**															
3 Work Overload	.61**	.43**	**.89**														
4 Dealing with students	.44**	.50**	.44**	**.90**													
5 Community Involvement	.63**	.43**	.52**	.36**	**.85**												
COPING																	
6 Emotion Focused	.05	.00	-.10*	.07	.03	**.84**											
7 Problem Focused	.15**	.07	.05	.08*	.13**	.34**	**.85**										
LEISURE																	
8 Active leisure	.15**	.18**	.12**	.15**	.16**	.24**	.14*	**.86**									
9 Passive leisure	.26**	.15**	.22**	.19**	.16**	.32**	.27**	.41**	**.85**								
HSCL																	
10 General Distress	.33**	.37**	.33**	.20**	.31**	-.16**	-.09*	.12**	.13**	**.85**							
11 Performance Difficulty	.34**	.20**	.32**	.24**	.27**	-.09*	-.06	.14**	.20**	.62**	**.81**						
12 Somatic Distress	.22**	.12**	.18**	.09*	.13**	-.08**	.02	.09*	.18**	.42**	.50**	**.78**					
GHQ																	
13 General Illness	.18**	.10**	.22**	.15**	.14**	-.15**	-.06	-.01	.09*	.36**	.39**	.42**	**.88**				
14 Sleep Disturbance	.29**	.24**	.33**	.20**	.24**	-.19**	-.07	.05	.16**	.43**	.42**	.42**	.50**	**.88**			
15 Anxiety/Dyshoria	.31**	.28**	.37**	.24**	.28**	-.16**	-.06	.07	.16**	.67**	.59**	.43**	.56**	.62**	**.87**		
16 Severe Depression	.20**	.26**	.17**	.11**	.22**	-.12**	-.04	.07	.01	.46**	.29**	.26**	.23**	.29**	.41**	**.86**	
17 TENSION	.41**	.41**	.55**	.35**	.37**	-.17**	-.09*	.09*	.23**	.53**	.49**	.37**	.39**	.52**	.60**	.31**	**.84**

* p = <.05; ** p = <.01 Note Numbers in bold represent Alpha Coefficients

and the GHQ measures of stress reactions. Where significant both emotion and problem focused coping were inversely related to all measures of stress reactions suggesting that the more frequently emotion and problem focused coping strategies were used, the lower the levels of stress reactions experienced. The correlations among the independent and dependent variables ranged from -.19 to .63. Given the moderately high correlations observed among some of the independent variables, tests for multicollinearity (as set out in chapter six), were applied to the data to ensure its suitability for the application of regression analysis. The results indicated that regression analysis was appropriate as (a) an inspection of the correlational matrix revealed no coefficients >.80, (b) no equations showed a substantial R^2 but statistically insignificant coefficients and (c) when each independent variable was regressed on other independent variables, the amount of variance explained failed to reach a level that indicated the presence of multicollinearity.

The relationships between the stress reactions (the dependent variables) and the demographic variables of age, gender, position, years in position, number of staff, size of school and number of hours worked were then explored. This analysis showed that only "size of school" reached significance on two of the eight dependent variables, but because it failed to explain more than one per cent of the variance, like the other demographic variables it was excluded from further analysis.

The Contribution of Work Stressors

Stepwise multiple regression analysis was used to investigate the relative contribution of the different work stressors to the dependent variables. Given the moderately high correlations observed between some of the work stressors, the increment in R^2 (ΔR^2) was used to explore the contribution of each of the work stressors to variations in stress reactions, a procedure suggested by Cohen and Cohen (1975).

Stressors that entered the regression equations at significant levels of at least .05 are presented in Table 8.2. Together, the stressors were found to predict between 5% and 32% of the variance in stress reactions. Of these variables work overload appeared to be the most powerful predictor of psychological symptoms entering the equations first for four out of the eight psychological outcome measures (ΔR^2 = .047, p< .001 to ΔR^2 = .285, p<.001) followed by relationships with staff (ΔR^2 = .074, p< .001 to ΔR^2 = .146, p< .001) and organisational change (ΔR^2 = .054, p< .001 to ΔR^2 = .103, p< .01) each entering the equations first on two out of the eight outcome measures.

Table 8.2
Relationships of Work Stressors with Health Outcomes

Variables	Beta	R^2	ΔR^2	F (Step)
General Illness (GHQ)				
Work Overload	0.21	0.047	0.047	25.33***
Organisational Change	0.11	0.054	0.007	3.90*
R^2 = 0.054, Adj R^2 = 0.050, Overall F = 14.69, p<.001				
Sleep Disturbance (GHQ)				
Work Overload	0.28	0.079	0.079	43.83***
Organisational Change	0.17	0.097	0.018	10.54**
R^2 = 0.097, Adj R^2 = 0.094, Overall F = 27.59, p<.001				
Anxiety Dyshoria (GHQ)				
Work Overload	0.35	0.123	0.123	72.00***
Relationships with staff	0.15	0.140	0.018	10.42**
Organisational Change	0.12	0.150	0.009	5.51*
R^2 = 0.150, Adj R^2 = 0.145, Overall F = 29.99, p<.001				
Severe Depression (GHQ)				
Relationships with staff	0.27	0.074	0.074	41.19***
Increased Community Involvement in School Management	0.13	0.088	0.014	7.96**
Dealing with students	-0.11	0.096	0.008	4.59*
R^2 = 0.096, Adj R^2 = 0.091, Overall F = 18.22, p<.001				
General Distress (HSCL)				
Relationships with staff	0.38	0.146	0.146	88.19***
Work Overload	0.19	0.176	0.030	18.38***
R^2 = 0.176, Adj R^2 = 0.173, Overall F = 54.78, p<.001				
Performance Difficulty (HSCL)				
Organisational Change	0.32	0.103	0.103	59.28***
Work Overload	0.19	0.128	0.024	14.37***
Dealing with students	0.12	0.138	0.011	6.31*
R^2 = 0.138, Adj R^2 = 0.133, Overall F = 27.42, p<.001				
Somatic Distress (HSCL)				
Organisational Change	0.23	0.054	0.054	29.22***
R^2 = 0.054, Adj R^2 = 0.052, Overall F = 29.22, p<.001				
Tension				
Work Overload	0.53	0.285	0.285	205.11***
Relationships with staff	0.20	0.317	0.032	24.00***
Increased Community Involvement in School Management	0.10	0.323	0.006	4.79*
R^2 = 0.323, Adj R^2 = 0.320, Overall F = 81.62, p<.001				

* p<.05; ** p<.01; *** p<.001

The Multiple Moderated Regression Analysis

Using multiple moderated regression (MMR) as discussed in chapter six, it was found that both emotion focused and problem focused coping did moderate the relationship between different work stressors and different stress reactions. There were nine regression equations out of 40 with a significant increase in R^2 when the interaction term was added in at step three. The gains in the amount of variance explained by the interactions ranged from 1.8% to 3.6%. The interaction effects were related to four of the eight stress outcome measures, *General Distress* (HSCL), *Severe Depression* (GHQ), *Tension* and *Sleep Disturbance* (GHQ).

Emotion focused coping moderated the relationship between:

- organisational change and general distress (Table 8.3)
- increased community involvement in school management and general distress (Table 8.5)
- organisational change and severe depression (Table 8.6)
- relationships with staff and severe depression (Table 8.7)
- increased community involvement in school management and severe depression (Table 8.8)

Problem focused coping moderated the relationship between:

- organisational change and general distress (Table 8.3)
- relationships with staff and general distress (Table 8.4)
- organisational change and tension (Table 8.9)
- dealing with students and tension (Table 8.10)
- organisational change and sleep disturbance (Table 8.11)

Table 8.3
Moderated Multiple Regression Results. Dependent Variable: General Distress (HSCL) on Organisational Change, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.078$, $p < .001$		
Organisational Change (OC)	0.28	6.08***
$R^2 = 0.078$ ($F = 36.94$, $p<.001$)		
Block 2: Main effects		
$\Delta R^2 = 0.070$, $p<.001$		
Emotion Focused Coping (EF)	-0.21	-4.14***
Problem Focused Coping (PF)	-0.12	-2.56**
Active Leisure (AL)	0.08	1.69
Passive Leisure (PL)	0.10	2.09*
$R^2 = 0.148$ ($F = 8.90$, $p<.001$)		
Block 3: Interactions		
$\Delta R^2 = 0.019$, $p<.05$		
OC x EF	-0.14	-2.67**
OC x PF	0.26	2.09**
OC x AL	0.01	0.05
OC x PL	-0.02	-0.36
$R^2 = 0.169$ ($F = 2.47$, $p<.05$)		
Total $R^2 = 0.169$, Adj $R^2 = 0.149$, Overall $F = 9.57$, $p<.001$		

*p<.05; **p<.01; ***p<.001

Table 8.4
Moderated Multiple Regression. Dependent Variable: General Distress (HSCL) on Relationships With Staff, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.132$, $p<.001$		
Relationships with staff (RS)	0.36	8.17***
$R^2 = 0.132$ ($F = 66.81$, $p<.001$)		
Block 2: Main effects		
$\Delta R^2 = 0.060$, $p<.001$		
Emotion Focused Coping (EF)	-0.20	-4.16***
Problem Focused Coping (PF)	-0.10	-2.08*
Active Leisure (AL)	0.05	1.10
Passive Leisure (PL)	0.14	2.75**
$R^2 = 0.192$ ($F = 8.03$, $p<.001$)		
Block 3: Interactions		
$\Delta R^2 = 0.025$, $p<.01$		
RS x EF	-0.10	-1.926
RS x PF	0.34	2.867**
RS x AL	0.09	1.892
RS x PL	-0.09	-1.780
$R^2 = 0.217$ ($F = 3.487$, $p<.01$)		
Total $R^2 = 0.217$, Adj $R^2 = 0.201$, Overall $F = 13.28$, $p<.001$		

*p<.05; **p<.01; ***p<.001

Table 8.5
Moderated Multiple Regression Results. Dependent variable: General Distress (HSCL) on Increased Community Involvement in School Management, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.065$, p<.001		
Increase Community Involvement in School Management (CI)	0.26	5.53***
$R^2 = 0.065$ ($F = 30.63$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.069$, p<.001		
Emotion Focused Coping (EF)	-0.21	-4.18***
Problem Focused Coping (PF)	-0.12	-2.37*
Active Leisure (AL)	0.07	1.30
Passive Leisure (PL)	0.14	2.68**
$R^2 = 0.135$ ($F = 8.71$, p<.001)		
Block 3: Interactions		
$\Delta R^2 = 0.034$, p<.01		
CI x EF	-0.19	-3.80**
CI x PF	0.22	1.72
CI x AL	0.07	1.35
CI x PL	-0.04	-0.71
$R^2 = 0.168$ ($F = 4.35$, p<.01)		
Total $R^2 = 0.168$, Adj $R^2 = 0.151$, Overall $F = 9.68$, p<.001		

*p<.05; **p<.01; ***p<.001

Table 8.6
Moderated Multiple Regression Results: Severe Depression (GHQ) on Organisational Change, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.040$, p<.001		
Organisational Change (OC)	0.20	4.26***
$R^2 = 0.040$ ($F = 18.13$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.035$, p<.01		
Emotion Focused Coping (EF)	-0.18	-3.36**
Problem Focused Coping (PF)	-0.02	-0.41
Active Leisure (AL)	0.08	1.56
Passive Leisure (PL)	-0.02	-0.36
$R^2 = 0.075$ ($F = 4.06$, p<.01)		
Block 3: Interactions		
$\Delta R^2 = 0.020$, p<.05		
OC x EF	-0.15	2.84**
OC x PF	0.15	1.13
OC x AL	0.06	1.01
OC x PL	0.04	0.68
$R^2 = 0.095$ ($F = 2.41$, p<.05)		
Total $R^2 = 0.095$, Adj $R^2 = 0.076$, Overall $F = 4.99$, p<.001		

*p<.05; **p<.01; ***p<.001

Table 8.7
Moderated Multiple Regression Results: Dependent Variable: Severe Depression (GHQ) on Relationships with staff, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.072$, p<.001		
Relationships with staff (RS)	0.27	5.84***
$R^2 = 0.072$ ($F = 34.12$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.028$, p<.05		
Emotion Focused Coping (EF)	-0.17	-3.34**
Problem Focused Coping (PF)	-0.00	-0.02
Active Leisure (AL)	0.06	1.13
Passive Leisure (PL)	0.01	0.05
$R^2 = 0.100$ ($F = 3.37$, p<.001)		
Block 3: Interactions		
$\Delta R^2 = 0.028$, p<.01		
RS x EF	-0.18	-3.36**
RS x PF	0.19	1.52
RS x AL	0.10	1.90
RS x PL	-0.02	-0.32
$R^2 = 0.128$ ($F = 3.48$, p<.05)		
Total $R^2 = 0.128$, Adj $R^2 = 0.110$, Overall $F = 7.04$, p<.001		

*p<.05; **p<.01; ***p<.001

Table 8.8
Moderated Multiple Regression Results: Dependent Variable: Severe Depression (GHQ) on Increased Community Involvement in School Management, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.050$, p<.001		
Increased Community Involvement in School Management (CI)	0.22	4.80***
$R^2 = 0.050$ ($F = 23.06$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.032$, p<.01		
Emotion Focused Coping (EF)	-0.18	-3.39**
Problem Focused Coping (PF)	-0.02	-0.37
Active Leisure (AL)	0.06	1.17
Passive Leisure (PL)	-0.03	-0.00
$R^2 = 0.082$ ($F = 3.79$, p<.01)		
Block 3: Interactions		
$\Delta R^2 = 0.036$, p<.01		
CI x EF	-0.19	-3.64**
CI x PF	-0.11	-0.82
CI x AL	0.04	0.72
CI x PL	0.04	0.67
$R^2 = 0.118$ ($F = 4.37$, p<.01)		
Total $R^2 = 0.118$, Adj $R^2 = 0.100$, Overall $F = 6.39$, p<0.001		

*p<.05; **p<.01; ***p<.001

Table 8.9
Moderated Multiple Regression Results: Dependent Variable: Tension on Organisational Change, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.150$, p<.001		
Organisational Change (OC)	0.39	8.80***
$R^2 = 0.150$ ($F = 77.49$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.097$, p<.001		
Emotion Focused Coping (EF)	-0.20	-4.14***
Problem Focused Coping (PF)	-0.18	-4.03***
Active Leisure (AL)	-0.02	-0.29
Passive Leisure (PL)	0.23	4.69***
$R^2 = 0.248$ ($F = 14.05$, p<.001)		
Block 3: Interactions		
$\Delta R^2 = 0.018$, p<.05		
OC x EF	-0.05	-1.04
OC x PF	0.34	2.94***
OC x AL	0.03	0.58
OC x PL	-0.02	-0.31
$R^2 = 0.265$ ($F = 2.55$, p<.05)		
Total $R^2 = 0.265$, Adj $R^2 = 0.250$, Overall $F = 17.24$, p<.001		

*p<.05; **p<.01; ***p<.001

Table 8.10
Moderated Multiple Regression Results: Dependent Variable: Tension on Dealing with students, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.107$, p<.001		
Dealing with Students (DS)	0.33	7.22***
$R^2 = 0.107$ ($F = 52.18$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.103$, p<.001		
Emotion Focused Coping (EF)	-0.22	-4.55***
Problem Focused Coping (PF)	-0.16	-3.36**
Active Leisure (AL)	0.01	-0.16
Passive Leisure (PL)	0.26	5.13***
$R^2 = 0.209$ ($F = 14.08$, p<.001)		
Block 3: Interactions		
$\Delta R^2 = 0.024$, p<.05		
DS x EF	-0.04	-0.86
DS x PF	0.41	3.43***
DS x AL	-0.06	-1.28
DS x PL	0.06	1.19
$R^2 = 0.234$ ($F = 3.43$, p<.01)		
Total $R^2 = 0.234$, Adj $R^2 = 0.218$, Overall $F = 14.56$, p<.001		

*p<.05; **p<.01; ***p<.001

Table 8.11
Moderated Multiple Regression Results: Dependent Variable: Sleep Disturbance (GHQ) on Organisational Change, Coping and Leisure

Variable	Beta	t
Block 1: Work Stressor		
$\Delta R^2 = 0.060$, p<.001		
Organisational Change (OC)	0.24	5.28***
$R^2 = 0.060$ ($F = 27.88$, p<.001)		
Block 2: Main effects		
$\Delta R^2 = 0.061$, p<.001		
Emotion Focused Coping (EF)	-0.20	-3.82***
Problem Focused Coping (PF)	-0.10	-1.95*
Active Leisure (AL)	-0.03	-0.60
Passive Leisure (PL)	0.19	3.52***
$R^2 = 0.120$ ($F = 7.46$, p<.001)		
Block 3: Interactions		
$\Delta R^2 = 0.022$, p<.05		
OC x EF	-0.10	-.93
OC x PF	0.35	2.77**
OC x AL	0.04	0.76
OC x PL	0.01	0.15
$R^2 = 0.1425$ ($F = 2.781$, p<.05)		
Total $R^2 = 0.143$, Adj $R^2 = 0.125$, Overall $F = 7.94$, p<.001		

*p<.05; **p<.01; ***p<.001

Contrary to expectations *passive leisure* did not have a moderator effect but it demonstrated a significant main effect in six of the nine regression equations. Its significant main effect occurred on all the dependent variables except severe depression.

In contrast, *active leisure* had no significant effect on stress reactions either independently or interactively. *Emotion focused coping* demonstrated significant main effects in all equations. *Problem focused coping* also demonstrated significant main effects in six of the ten equations.

The significant interactions were analysed further to determine the nature of the interactive relationship. For each significant interaction the moderator variable was split into low and high groups based on one standard deviation from the mean; a criterion recommended by Cohen and Cohen (1983) and Jaccard, Turrisi and Wan (1990). Separate regressions were then run for the criterion - predictor variables for the low-high groups. This procedure follows that outlined by Jaccard, Turrisi and Wan (1990) and is based on the work of Cohen and Cohen (1983). The procedure maximises the power of

the subgroup analysis, controls for significant main effects, maintains the information of the regression equations by preserving the integrity of the continuous variables and provides a mechanism for exploring the slope of the regression line at different values of the moderator. From this regression analysis the nature of the interaction effects were plotted and their graphic representation is revealed in Figures 8.1 to 8.10. The graphs that revealed the interactions were of two distinct types, characterised by three different effects. Five of the ten significant interactions were of the ordinal type, that is, where, "the rank order of a treatment is constant, but the quantitative effect may vary" (Lubin, 1961, p.816).

These ordinal interactions were characterised by two different effects. For example figures 8.1 and 8.2 are characterised by an effect where demand from the work stressor is associated with greater levels of the stress for principals and deputy principals low in emotion focused coping than those high in such behaviours but that the stress levels of the former increase more sharply with increased stressor demand than those who engage in more emotion focused behaviours. Figure 8.1 depicts graphically the interaction effect of emotion focused coping.

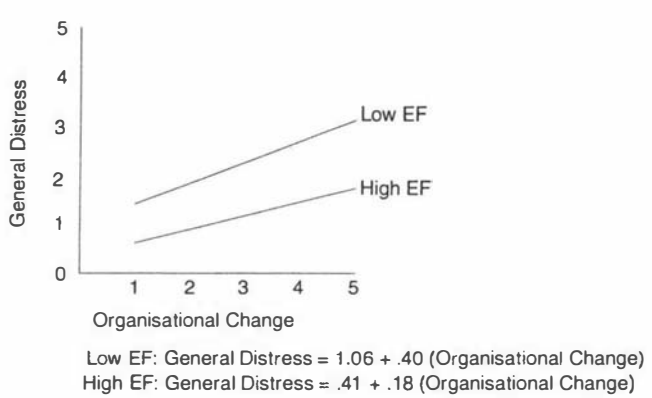


Figure 8.1 Relationship Between Organisational Change and General Distress for Low and High Emotion Focused (EF) Coping.

The slope of the regression line of general distress on organisational change for low use of emotion focused coping is steeper than the slope of the regression line for high use of emotion focused coping. It suggests that the relationship between organisational change and general distress was stronger for those who made less frequent use of emotion focused coping, and weaker for those who made more frequent use of emotion focused coping. Figure 8.2 is consistent with this effect when emotion focused coping moderates the relationship between increased community involvement in school management and general distress.

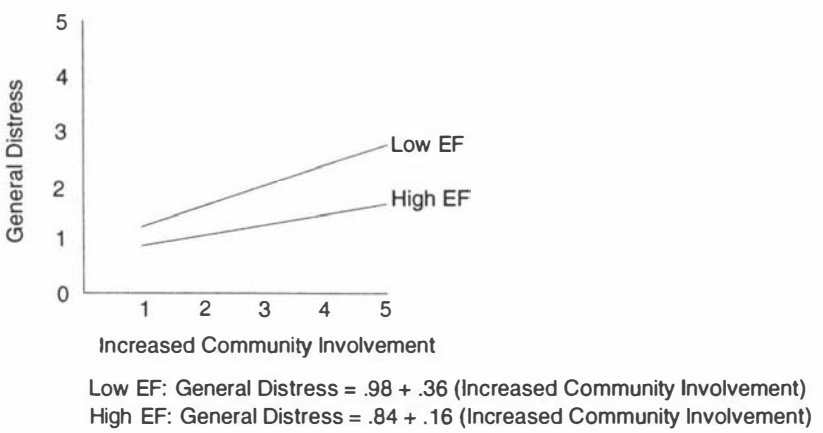
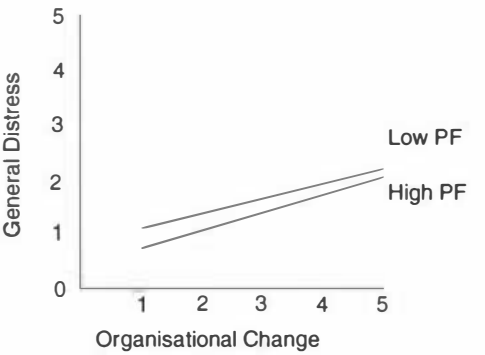


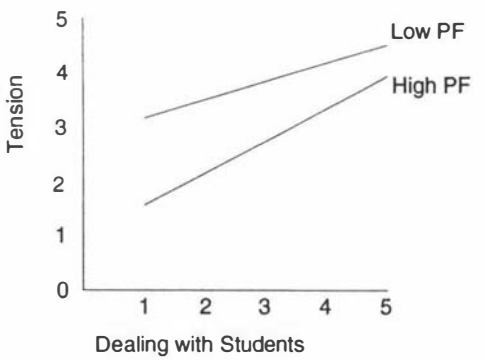
Figure 8.2 Relationship Between Increased Community Involvement and General Distress for Low and High Emotion Focused (EF) Coping.

In contrast the second effect of the ordinal interactions is one in which the increasing demand of the work stressor is associated with increased levels of stress for both high and low levels of the moderator but the effect is greater for high levels of the moderator variable (Figures 8.3, 8.4, 8.5). For example in figure 8.5 it can be seen that as the demands of *organisational change* increase, both high and low use of problem focused coping are associated with increased *sleep disturbance.* But, because the slope of the regression line for high problem focused coping is steeper than the slope of the regression line for low problem focused coping, the relationship between *organisational change* and *sleep disturbance* is stronger the more frequently that problem focused coping is used. Tables 8.3 and 8.4 show the same type of relationship when problem focused coping is the moderator but for different dependent variables.



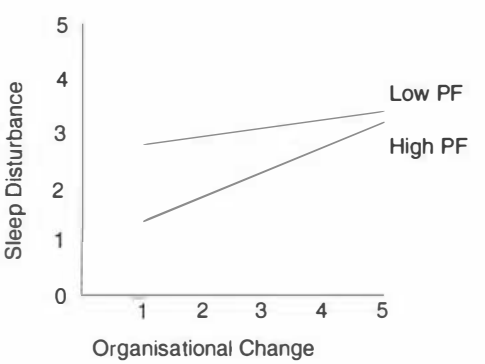
Low PF: General Distress = .96 + .24 (Organisational Change)
High PF: General Distress = .54 + .30 (Organisational Change)

Figure 8.3 Relationship Between Organisation Change and General Distress for Low and High Problem Focused (PF) Coping.



Low PF: Tension = 2.89 + .32 (Dealing with Students)
High PF: Tension = 1.05 + .57(Dealing with Students)

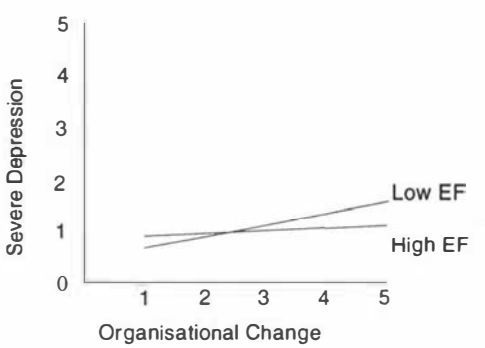
Figure 8.4 Relationship Between Dealing with Students and Tension for Low and High Problem Focused (PF) Coping.



Low PF: Sleep Disturbance = 2.66 + .15 (Organisational Change)
High PF: Sleep Disturbance = .85 + .49 (Organisational Change)

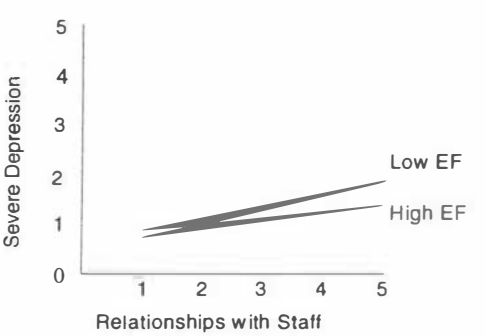
Figure 8.5 Relationship Between Organisational Change and Sleep Disturbance for Low and High Problem Focused (PF) Coping.

The remaining significant interaction effect was of the disordinal type, that is, where, "the rank order of the treatment changes with the value of another classifying variable (Lubin, 1961, p. 816), characterised by opposing effects for low and high levels of the moderator. Thus, as illustrated in Figure 8.6 principals and deputy principals who exhibit high use of *emotion focused coping* experience somewhat more severe depression at *low* levels of demand from organisational change than those who make less use of emotion focused coping. At *high* levels of organisational change, however, the impact of organisational change on severe depression was far greater for those principals and deputy principals who make less use of emotion focused coping as demonstrated by the steeper slope for low emotion focused coping. A similar pattern of relationships was found when emotion focused coping moderated the relationship between relationships with staff and severe depression (Figure 8.7) and increased community involvement and severe depression (Figure 8.8).



Low EF: Severe Depression = .47 + .23 (Organisational Change)
High EF: Severe Depression = .82 + .06 (Organisational Change)

Figure 8.6 Relationship Between Organisational Change and Severe Depression for Low and High Emotion Focused (EF) Coping.



Low EF: Severe Depression = .43 + .29 (Relationships with Staff)
High EF: Severe Depression = .66 + .14 (Relationships with Staff)

Figure 8.7 Relationship Between Relationship with Staff and Severe Depression for Low and High Emotion Focused (EF) Coping.

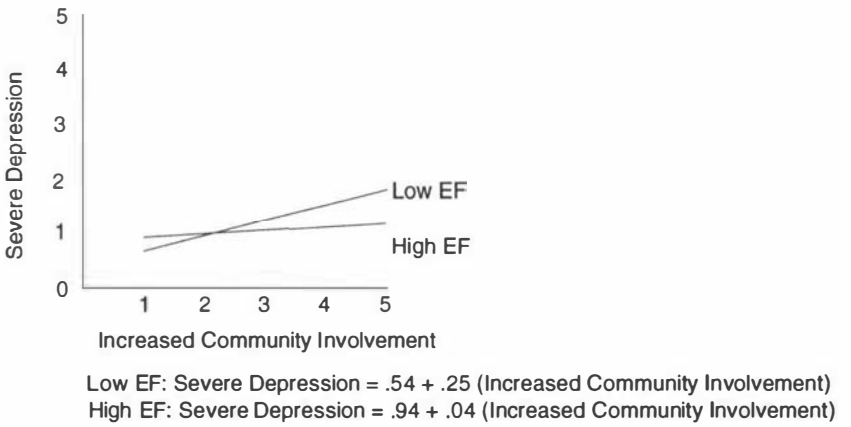


Figure 8.8 Relationship Between Increased Community Involvement and Severe Depression for Low and High Emotion Focused Coping.

The remaining two disordinal interactions (Figures 8.9 and 8.10) show that those who exhibit *low* use of *problem focused coping* experience greater levels of stress reaction (general distress and tension) at low levels of stressor demand than those who make more use of problem focused coping. However, again there is an opposing effect at *high* levels of stressor demand, with managers who make *more* use of problem focused coping reporting somewhat *greater* experience of stress reaction than those who make less use of problem focused coping. Clearly, problem focused coping and emotion focused coping have different effects, depending on a particular stressor-stress reaction relationship. These findings will be discussed in the following chapter.

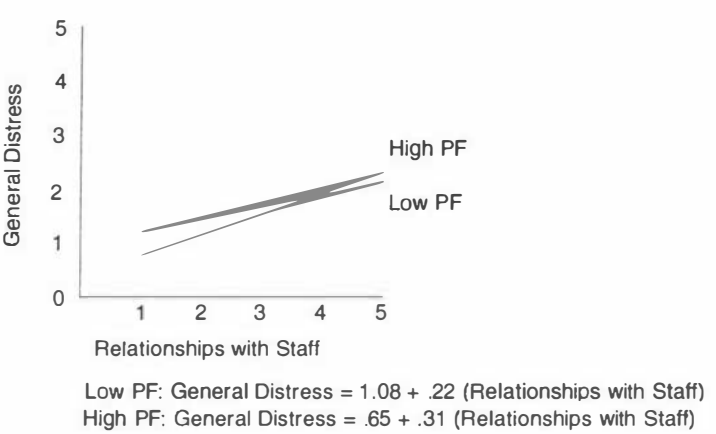


Figure 8.9 Relationship Between Relationships with Staff and General Distress for Low and High Problem Focused (PF) Coping.

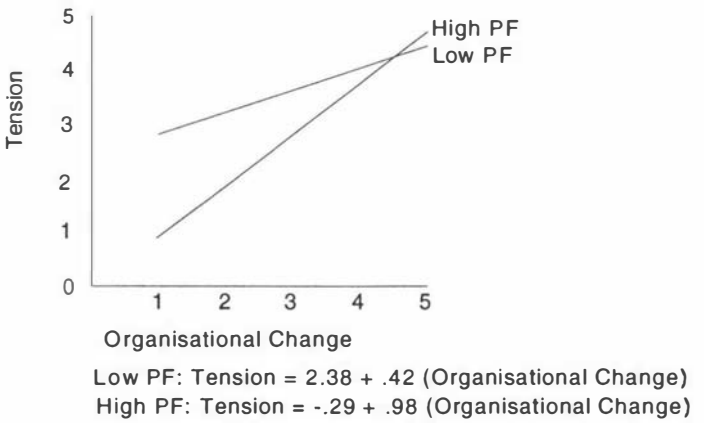


Figure 8.10 Relationship Between Organisational Change and Tension for Low and High Problem Focused (PF) Coping.

The approach adopted in the above analysis revealed ten small but significant interactions. A feature of all the interactions is that there were strong main, as well as moderating effects of both problem and emotion focused coping. Although small, the interaction effects found in the present study sensitised the researcher to the potential role that emotion focused coping, previously considered maladaptive coping (Parasuraman & Cleek, 1984), can play in assisting individuals to deal with the stress reactions associated with the perceived excessive demands of managing schools. They also signal the potential harmful effects of inappropriate applications of problem focused strategies.

Qualitative data collected through open-ended questions helps to put these results into context. Participants were first asked about the role of leisure in coping with work stress. Additional open ended questions were then used to explore the role leisure played in respondent's lives, to illustrate how important they perceived leisure to be for coping with work-related stress. These questions also acted as a check on the results of the quantitative analysis performed. The analysis of the open ended data was carried out as detailed in chapter six and is described below.

Content Analysis

In the first question respondents were asked if they used leisure activities/ experiences to help cope with stress at work. Of the 687 people who answered the question 593 said they did use leisure to help cope with stress at work and 94 said they did not. Respondents who answered in the affirmative were asked how leisure activities helped in coping with stress at work. 1163 responses were given with most respondents giving two or three answers. Five main categories were derived (Table 8.12). The first related to leisure providing a distraction or change from work(49.3%). This included the feeling that leisure distracted/diverted thoughts from work enabling one to be absorbed, immersed, focused in on other things (35.6%); restored one's perspective/ balance on life to make one realise work was not the only thing in life (9.6%); was seen as a means of escape, and provided a complete change of pace and scene reflecting

Table 8.12
Content Analysis of the Question "How do leisure activities help you in coping with the stress at work?"

Provides distraction from/contrast to work	**49.3%**
Distracts/diverts thoughts from work to refocus/reflect	35.6%
Restores perspective/balance of life	9.6%
Means of escape from work	4.1%
Enables time alone for relaxation/recuperation	**24.8%**
Relaxes mind and body	12.7%
A time for/to oneself in peace and quiet	12.1%
Physical Outlet	**14.1%**
Releases energy and emotion through exercise	9.4%
Improves fitness and physical well-being	4.7%
Social contact	**6.6%**
Meet people outside work	6.3%
Spend time with family or friends	0.3%
Personal Fulfilment and development	**5.2%**
Feelings of achievement, satisfaction, control	3.4%
Develop new skills/talents	1.8%

largely escape to quieter climes, mentally and physically (4.1%). The second category related to the relaxation and recuperative effects of leisure (24.8%) and included relaxing the mind and body (12.7%) and a time for oneself in peace and quiet often in a natural setting (12.1%). The third category represented the physical side of leisure (14.1%), and included the release of energy, emotion and tension through exercise (9.4%) and improvement of fitness and physical well-being (4.7%). Contact with people was another clear category of responses (6.6%) and included meeting people outside work (6.3%) and spending time with family (0.3%). The final category described the facility of leisure to enable one to be self directed, fulfilled through feelings of personal achievement, satisfaction and control (5.2%) and included gaining personal control and a sense of satisfaction (3.4%) and developing new skills and talents (1.8%). Overwhelmingly respondents saw leisure as a means of diverting their actions and thoughts away from work and allowing them to relax, unwind, reflect and restore their energies and perspective on life (74.1%). The responses that fitted into this category largely reflected passive needs important to leisure of leisure with responses such as, "a time to think things through", "restores energy levels", "refreshes me", "to absorb peace and tranquillity", "clears the mind from work and peace and tranquillity can flow", "forget about work, become so engrossed in other things", "a time to escape giving me a fresh start", "complete change of pace physically and mentally", and so on. The remaining categories accounting for 25.9 percent of the responses included "setting time aside weekly to be a builder/manual labourer, something active", "to do something physical - take it out on the ball", "tire me physically so I sleep well", "meet other people outside work", "self directed produces own rewards", "gives success", "a sense of achievement and fulfilment', and so on.

When it came to identifying the sorts of activities the respondents indicated that they enjoyed doing in their leisure time away from work (Table 8.13) the more passive of leisure activities were the most frequently mentioned. Only jogging and exercising and perhaps golf could be considered activities of a more active nature that made it into the top ten most frequently mentioned activities. The activities also reflected their more solitary nature with the possible exception of family activity.

Table 8.13
Content Analysis of activities participated in by respondents during previous 12 months. Ten most frequently mentioned.

Activity	No. of Responses	%
1 Reading	353	15.8
2 Gardening	265	11.8
3 Walking	175	7.8
4 Watching Television	114	5.1
5 Golf	104	4.6
6 Listening to Music	94	4.2
7 Jogging	92	4.1
8 Family Activities	89	4.0
9 Fishing	75	3.3
10 Exercising	49	2.2

Along this theme although golf can be played with others, a large part of the game is spent on one's own. Four responses - reading, gardening, walking and watching television accounted for 40.5 percent of the 2240 responses given. The next six most frequently mentioned activities included golf, listening to music, jogging, family activities, fishing and exercising. These accounted for a further 22.4 percent of responses. If the list was extended to the next ten most frequently mentioned activities it would describe activities of a more active and physical nature and include: tramping, touring, religion, tennis, swimming, going to movies, playing cards, squash, going to plays and indoor sports. These ten accounted for a further 15 percent of responses. The remaining twenty percent of responses were spread across some other 146 activities.

On this occasion, the activities that the majority of these respondents say they enjoy reflect more passive leisure activities, with passive leisure describing activities that are more recuperative, relaxing, less skill based and more solitary in nature than active leisure which is generally more associated with stimulation, challenge, action and variety (Kabanoff & O'Brien, 1986). These activities would be those that one would expect these people to enjoy and engage in given their answers to the open ended question on how leisure activities helped them to cope with stress at work (Table 8.12) and from an inspection of the items in the passive leisure component extracted through the principal components analysis (Table 7.21).

In answer to the question "would you say that leisure is an important part of your life?", 84% of respondents indicated that it was. The reasons for this largely fell into the broad categories identified in Table 8.12 but with a slightly different emphasis, indicating that respondents did discriminate between the two questions. Personal fulfilment and development through achieving, creativity, stimulation and control was more frequently reported (16.7%) when responding to the question, "would you say that leisure was an important part of your life (Table 8.14) if yes - why?" than the 5.2% response to the question how leisure helped them cope with stress (Table 8.12). On the other hand physical activity was more likely to be reported by more respondents as a reason why leisure activities helps in coping with stress at work than when they reported why leisure was an important part of their lives.

Table 8.14
Content Analysis of the Question "Would you say that leisure is an important part of your life? If yes - why?"

Provides distraction from/contrast to work	**43.3%**
Distracts/diverts thoughts from work	22.3%
Restores perspective/balance on life	17.0%
Means of escape	4.0%
Enables time alone for relaxation/recuperation	**26.2%**
Relaxes/recharges mind and body	14.7%
A time for oneself in peace and quiet	11.5%
Personal fulfilment and development	**16.7%**
Feelings of achievement, satisfaction, control	9.0%
Something to look forward to to cope	7.7%
Social Contact	**8.0%**
Meet people outside work	4.5%
Spend time with family and friends	3.2%
Compete with others	0.3%
Physical Outlet	**5.8%**
Physical exercise improves fitness and well-being	5.4%
Provides physical challenge	0.4%

Clearly when coping with stress some respondents see the need to find some physical outlet to alleviate the strains associated with stress. Otherwise the other categories for why leisure was an important part of principals and deputy principals lives, remained somewhat equivalent. When asked the question "have you always regarded leisure as an important part of your life?", 434 people (76.3%) said that they had or nearly always had with 112 people (16%) saying that they had more recently regarded leisure as an important part of their life. The 211 reasons they gave for this could be grouped into three main categories (Table 8.15). The first related to work demands and the need to restore a balance (60.3%). This included the pressures of work and increasing stress (34%) and the recognition of the need to restore a balance and have a break from work.

Table 8.15
Content Analysis of the question "what happened to encourage you to become more involved in leisure?"

Work demands and the need to restore a balance	**60.3%**
Pressures of work and increasing stress	34.0%
Recognition of the need to restore a balance and take a break	26.3%
Changing Circumstances	**23.0%**
Changes in family circumstances	13.4%
Stage of life	9.6%
Health Problems	**16.7%**
Health problems related to stress at work	12.2%
Improved physical fitness and relaxation	4.5%

The second category (23%) related to changing circumstances and included changing family circumstances (13.4%) and the stage of life the respondents themselves were at (9.6%). The final category related to health problems (16.7%) which also reflected work demands and included health problems related to stress (such as high blood pressure, heart attack) (12.2%) and to improve physical fitness and relaxation (4.5%).

Of the 581 people who indicated that leisure was an important part of their life, 532 (91.6%) said they used leisure to help cope with stress at work while 49 (8.4%) said they did not. Of the 102 people who said that leisure was not an important part of their life 58 still said they used leisure to cope with stress a work. Only 44 respondents indicated that leisure was neither important in their lives nor used it to cope with stress at work. Fifty five people who said that leisure had always or nearly always been important to them but did not use leisure to cope with stress at work, gave as their reasons: "not enough time", "work pressures", "too many other commitments", and "loss of interest".

Summary

On the basis of both the quantitative and qualitative measures studied, it can be said that leisure is considered to be an important part of the lives of the majority of respondents in the present study, and is reportedly used to help cope with the strains respondents feel result from work. However, while the importance of leisure for coping with stress at work has been shown to be positively associated with six specific stress reaction measures, such that at higher levels of stress the more important leisure is perceived to be, that importance has not been shown to exert any moderating or buffering effects on the stress - strain relationship. In contrast, while emotion focused coping has been shown to have significant direct effects on the strain, it has also been shown at high levels of use to exert a moderating effect on the stressor-strain relationship for specific work stressors.

The implications of these results and other issues raised in the study will be explored further in the following discussion and conclusions chapter.

Chapter 9: Discussion

The present study set out to explore the role of coping, and in particular the role of leisure as a form of coping, in the work stress-health (psychological stress reactions) relationship. To achieve this goal several research objectives were formulated and together they formed the basis of the study.

The first of these objectives was to identify those situations which principals and deputy principals identified as causes of demand and possible distress. This was considered an important first step in order to ensure that the stressor measure that was subsequently to be developed, represented events that were relevant and meaningful to the specific occupational group taking part in the study. It also took into account the need to develop a taxonomy of stressful working conditions that were likely to affect most respondents (see Brief & George, 1995).

The second research objective was to identify the coping strategies that principals and deputy principals reported using in response to the work stressors they had nominated, and to identify those aspects of leisure they regarded as important for coping with work stress. A key feature of the study was the exploration of work oriented coping strategies, in conjunction with a specific form of coping - leisure.

A third and key objective of the study was the psychometric evaluation and factor replication of the scales developed to measure stressors, coping and leisure. A major empirical problem in work stress research is how to measure stressors and aspects of coping. A variety of different measures have been used, often without psychometric evaluation of scale properties, attention to issues of construct validity or the replication of reported factor structures (Latack, 1986; Dewe, 1992; O'Driscoll & Cooper, 1994). The evaluations undertaken have sought to address these issues and have become an important part of the study.

A further objective of the study was the examination of the relationships between the presence of work stressors and *general* indicators of psychological well-being. Traditionally, work stress research has relied on such job-related indicators of stress reactions as job satisfaction, as if affective disorders stemming from the stressors at work stop at the workplace door (Brief & George, 1995). If employment conditions adversely affect mental health, then one should be able to demonstrate an association between the presence of the condition and some general (non work specific) indicator of psychological well-being. For this reason several general indicators of psychological well-being were measured using subscales of the Hopkins Symptom Checklist, the General Health Questionnaire and a tension scale. These research objectives led to the final research goal; to explore the role of leisure in coping with work stress.

This chapter now turns to a discussion of the demographics of the sample, the analysis, and the evaluation of the work stressors, coping and leisure measures. The chapter then moves to a discussion of the regression results. It considers the results of the moderated multiple regression analysis and concludes by drawing attention to the implications of these findings for future research and the limitations and strengths of the study.

The Demographic Data

As was indicated earlier in chapter seven, the sample (n = 695) was representative of the occupational group for the population as a whole. Consideration of job satisfaction showed that a relatively high level of job dissatisfaction existed since the implementation of educational reforms with 38.1% of principals indicating that their level of job satisfaction had decreased or substantially decreased and 44.4% of deputy principals indicating the same. This level of dissatisfaction is particularly noticeable for a professional and vocational group such as this, especially since those who hold principal and deputy principal positions have a strong commitment to their role as professional leaders of educational institutions and are motivated intrinsically rather

than by reward. On the other hand it may be, when the increases in job satisfaction are considered further, that the greater proportion of principals showing an increase in satisfaction (34.5%) as against the proportion seen among deputy principals (18.4%), could well be explained by the fact that principals have been put on individual contracts and are somewhat better off personally as a result of the reforms while deputy principals have remained the same. Another possible explanation for the finding could be that principals and deputy principals perform different roles in regard to the management of the school. Principals have also been shown to be quite positive about the overall impact of the reforms (McGee, Keown & Oliver, 1993) but have found that the pace with which the changes have been implemented and the concomitant rise in workload to be major contributions to their level of work stress (Boyd, 1993).

When reported stress levels were considered, the findings showed that 89.6% of principals and 87.4% of deputy principals perceived their level of work stress to be high or very high since the implementation of the educational reforms. There was no significant difference between the two groups in their perception of the level of stress experienced. This result is in accord with that reported by McGee, Keown and Oliver (1993) with 67% of the principals in their sample indicating an increase in stress levels since the educational reforms. That stress levels for principals and deputy principals may be rising is also suggested when their scores on the Hopkins Symptom Checklist and the General Health Questionnaire were compared with other groups in the population. For example, when performance difficulties and somatic distress scores were compared using the Hopkins Symptom Checklist, principals and deputy principals scored significantly higher than nurses (see chapter seven). On the other hand no significant differences were found when general distress and sleep disturbance scores were compared between principals and deputy principals and a large group of unemployed. This result indicates that at the very least, the present sample appears to be experiencing similar levels of distress on those dimensions, as were observed in the unemployed sample. This comparison also tends to support the more anecdotal evidence that principals and deputy principals are indeed experiencing high levels of stress reactions.

Only five of the present sample of 695 indicated that they were working 40 hours or less, with the rest working between 40 and 80+ hours, and with 62 hours being the average. These results are supported by earlier research monitoring the implementation and impact of the educational reforms (McGee, Keown & Oliver, 1993). In the McGee et al. (1993) study, for example, 83% of principals reported an increased workload since the implementation of reforms with 40% of these reporting a significant increase.

In summary, the present sample of principals and deputy principals were representative of their occupational group as a whole with the majority reporting high levels of stress and heavy workloads. These stress levels appear to have remained unabated over the years, and there has been a suggestion by some commentators that they have contributed since 1993 to a sharp rise in resignations (Williams, 1995a).

The Work Stressors

The events used in the stressor measure were derived from the content analysis of responses to those questions where principals and deputy principals were asked to indicate what sorts of things caused them to feel under pressure, tension or strain at work, and to identify the most significant change (if there had been one) in their workload since the implementation of the educational reforms. The resulting items reflected the views of the sample and the context of the time. This research is one of the first which has investigated head teachers experiencing the process of major organisational change. Determining the work environment characteristics that were experienced as demanding, then determining the frequency of those demands, was consistent with the transactional definition of stress.

In contrast to the traditional approach where more generalised measures of work stress are used, the present research employed a qualitative open ended method of collecting data on work stressors which were then used as the basis of the stressor measure. The responses revealed a number of specific events (e.g. increase in workload

since Tomorrow's Schools; changes in the knowledge base of the Ministry of Education; implementing new syllabuses; increased consultation with Boards of Trustees; interference by Board of Trustees etc) highlighting items sufficiently different from the traditional work stressors identified in the past for principals and deputy principals (Cooper & Kelly, 1993; Borg & Riding, 1993) and the more global work role stressors originally identified by Rizzo, House and Lirtzman (1970). From this pool of data the stressor measure was established. As suggested by a number of authors, (Dewe, 1985; O'Driscoll & Cooper, 1994) the advantage of this approach is that it avoids the difficulties that arise when events are established on an a priori basis, of overemphasising the presence of some stressors and ignoring the presence of others (Glowinkowski & Cooper, 1985; Brief & George, 1995).

As can be seen from table 7.9 principals and deputy principals reported as sources of stress, Organisational Changes, Dealing with Staff and Students, Quantitative Work Overload and Increased Community Involvement in School Management. These findings provide more support for the evidence reported and discussed in chapter two that, in addition to the more traditional sources of stress, such as dealing with staff, students and work overload, changes to the system of educational administration have resulted in the emergence of new sources of stress. Items in one component represented demands from the central state agencies, including the Ministry of Education, the Education Review Office and the Qualifications Authority. Items in another component represented demands emanating from changes made at the community level. The items in these two components showed that the educational reforms were extending the range of principals' and deputy principals' responsibilities, and that they now included managing and responding to both an external and an internal environment.

Two other components identified as handling staff and students, reflected "people problems", a perennial issue for managers and clearly no exception to principals and deputy principals. These sources of stress focused on the management of interpersonal conflict, dissatisfaction, discipline, standards and incompetency. These reflected generally the difficulties surrounding the management function of getting

things done through people. In addition, principals and deputy principals could find themselves somewhat isolated in their organisations, a role issue for senior managers generally, connected to authority, responsibility and accountability.

The remaining component, work overload, suggests that principals and deputy principals may have significant problems with the planning and scheduling of their work tasks.

Being able to identify the nature of the stressors and determine the stability of the components, forms a reliable basis upon which stress intervention strategies can focus. The sources of stress described above have not diminished if anecdotal evidence is any indicator. Reports from the professional educational groups suggest that the impact of the educational reforms continues to place considerable demands on principals and deputy principals (Williams, 1995a; "Conflict Increases", 1995; Williams, 1996; "Principals Exodus", 1996). Such reforms as the reports suggest continue to demand constant curricula development and management accountability that almost invariably highlights conflicts between traditional educational values and market driven practices and expectations.

The results from this study are reflective of those discussed by Cooper and Kelly (1993) in their study of head teacher stress just before the *Education Reform Act* was introduced in Great Britain. The one difference between the two studies was that the New Zealand principals and deputy principals identified the educational reforms as sources of stress whereas the Great Britain head teachers, while expecting changes, had yet to experience their impact.

One important issue to be drawn from these results is that identified by Cox, Boot, Cox and Harrison (1988). They suggested that work stress research develop an organisational orientation as well as an individual orientation otherwise the role the organisation plays in determining work experiences is not made explicit, nor is the potential the organisation might have for resolving problems. Clearly, as Brief and

George (1995) implore, work stress researchers should not lose sight of the fact that one of their responsibilities is to identify those stressors that are likely to affect *most* workers and by searching for those stressful conditions we may better fulfil our societal obligations.

Another important issue in this respect is that the stressors identified were established on the basis of their replicability across samples within the management group. The stressor solution because of its ability to be replicated provides a sound tool for interventions and an opportunity to explore as Cox et al.(1988) suggests those organisational issues and management strategies that may help when dealing with the contemporary stressors faced by teachers.

The Coping Strategies

This element of the research project set out to consider the measurement of coping, and more particularly the replication of coping strategies. How coping should be measured has been considered by a number of authors (Latack & Havlovic, 1992; Dewe, Cox & Ferguson, 1993; O'Driscoll & Cooper, 1994). However, little research has investigated the replication of coping strategies, except to note first the absence of a single preferred instrument (Koeske, Kirk & Koeske, 1993), second, the need to identify, if coping data are to be replicated, those coping dimensions that generalise across samples (Latack, 1986), and third, the utility of coping measures when differences arise in the number of components identified, and in the items that load on any particular component (O'Driscoll & Cooper, 1994). The present study has, through the application of the FACTOREP procedure (Walkey & McCormick, 1985) described in chapter six, identified two clearly replicable components (see table 7.16).

The items in the coping scale were derived as described in chapter six from the Dewe and Guest (1990) coping checklist and from strategies generated by the initial interviews in response to the question, "What sorts of things do you do or actions do you take to manage the stresses and pressures of work you have identified?". The

coping measure was comprehensive as suggested by Latack and Havlovic (1992). It included strategies that were aimed at dealing with the person-environment transaction (problem/task) and managing the emotional reactions. It included items that were both cognitive, that is, mental strategies and self talk (try to think objectively about the situation) and behavioural, taking action or doing something (confront the problem). It also included items that reflected control strategies (try to predict problems and make contingencies) and escape strategies (become more involved in nonwork activities) that have been identified in previous studies (O'Neill & Zeichner, 1985; Latack, 1986). The strategies included in the measure were rooted in and supported by the workplace, thus representing what the respondents actually did and thought in a specific context. They were non evaluative in the sense that no a priori judgements were made about their effectiveness.

In order to demonstrate the significance of the replicable two component solution found, it is necessary to first consider the context from which this solution was derived. A discussion of the original four factor solution derived from a principal components analysis illustrates not just the measurement issues that need addressing when coping strategies are being measured but the strength of the measures when replication is the research focus.

Turning to the initial principal components analysis the four component solution could be classified according to the Folkman and Lazarus (1980) schema (Table 7.11). In this case component III appeared to represent a problem focused strategy while components I, II, IV described emotion focused strategies. This classification as Folkman, Lazarus, Gruen and De Longis (1986) point out does not offer a precise distinction between strategies. However it does offer a framework for classifying coping strategies according to their focus (problem versus emotion). Additionally, the labels of problem and emotion focus are relatively non-evaluative in comparison with alternative labels given to similar categories identified by other authors such as approach versus avoidance (Cronkite & Moos, 1984), control versus escape (Latack, 1986) and adaptive versus maladaptive (Parasuraman & Cleek, 1984) all of which carry connotations of good and bad coping (Lazarus, 1993).

The focus of coping strategies can be better understood and more comprehensively described according to Latack and Havlovic (1992) when the notion of method-mode of coping is applied to the components. In the present case the first component reflected strategies that were largely cognitive and control oriented (e.g. try to think objectively about the situation; reconsider how involved you are at work). The second component was behavioural, with a sub dimension of escape while the third was clearly problem or task oriented in focus, behavioural by method and control oriented. If, as this component solution suggests, the strategies could be classified according to the Latack and Havlovic (1992) schema, including control and escape dimensions, then this would seem to offer an alternative classification to more traditional approaches that classify according to focus alone.

However in response to a claim by Walkey and McCormick (1985) that the replicability of a factor structure should be the minimum criterion for demonstrating the existence of a subscale structure, an attempt was made to replicate the above solution across the present sample. It was found that the four component solution could not be replicated, nor could a three component solution. The only solution which gave any promise of a replicable component structure was a two component solution (see Tables 7.12 to 7.14).

By eliminating those items which appeared to comprise the least stable components when compared across four subject groups, a robust two component solution emerged (see Tables 7.15 and 7.16) with strong psychometric properties. These two components clearly represented problem-focused and emotion-focused strategies. The components could not be classified according to their method or mode, nor according to the dimensions of control and escape although component I (emotion focused) did exhibit more escape oriented strategies while the second (problem focused) exhibited predominately control oriented strategies, an observation which might have been expected, given the tendency of people to use emotion focused strategies when they feel they have no control over the situation (Latack, 1986; Dewe, Cox & Ferguson,

1993). Within the constraints imposed by cross sectional and self report data, this result confirms, at least as a first step, the problem versus emotion focused classification approach.

Other methods for measuring coping strategies have been suggested (Stone & Neale, 1984; O'Driscoll & Cooper, 1994). Ultimately though, the reliability and validity of self report coping measures will depend on their ability to thoughtfully and carefully explicate the coping construct (Harris, 1991). These results add to our understanding of coping but raise a number of measurement issues. The first concerns the appropriateness of applying traditional psychometric assessment to coping. Issues of reliability have been discussed in relation to coping measures (Stone & Neale, 1984; Latack & Havlovic, 1992; O'Driscoll & Cooper, 1994) and explanations proposed for why coping measures have in general fared badly on psychometric criteria. One explanation put forward by Stone and Neale (1984) suggested that the use of one or two specific strategies within a scale would place a ceiling on internal consistency coefficients. A second explanation surrounded the issue of confounding cognitive and behavioural strategies within items, (Latack & Havlovic, 1992) and a third explanation put forward by Aldwin and Revenson (1987) simply stated that if coping is a dynamic process changing over time it should not be surprising that when the same coping measure is used with different samples and different settings, the factor structure varies.

The short answer to the latter explanation, provided by Walkey and McCormick (1985) is that the usefulness of subscales in any questionnaire is limited by the extent to which the factors and consequent subscales are based upon replicable characteristics of the questionnaire itself rather than the idiosyncratic characteristics of the responding group. For those who conclude that varying factor structures are a product of the unique characteristics of the groups sampled (Aldwin & Revenson, 1987; Dewe & Guest, 1990) from scales that are similar if not identical, the results obtained from the present study would show that to be a doubtful conclusion in the light of the clear equivalence of the two component structure obtained from the present sample. It is much more likely, as Siegert, McCormick , Taylor and Walkey (1987) suggest, that the idiosyncratic

structures reported, mostly with unacceptably low internal reliabilities (Latack & Havlovic, 1992), are a chance outcome from the error variance in the responses of the subjects, which has been unwittingly incorporated into the factor analytic solutions on which the proposed structures are based. In neither case, by contrast with the present study, could such structures be regarded as stable characteristics of the questionnaire itself.

The two earlier explanations for why coping measures had fared badly on psychometric criteria were to some extent circumvented by the present study, in that coping was dimensionalised according to the frequency of use of coping strategies and the items did not conceptually confound cognitive and behavioural strategies. While the above strategy would appear to add to the internal consistency of the scales, it is far more likely that the coherence apparent within the components in the present study is due to the identification of two replicable components of coping containing items that belong together instead of components where items are differentially assigned depending on the number of components extracted. As noted above, Walkey and McCormick (1985) argue that the replicability of a factor structure across several populations should be the minimum criterion for demonstrating the existence of a subscale structure and the result here would bear that out. It comes down to the question of what it is the researcher is trying to do. Developing coping measures requires a decision to be made as to the purpose of the instrument or scale (Dewe, Cox & Ferguson, 1993). The purpose of the present study was to determine as accurate a subscale structure of coping as possible for use in further analysis of the relationship between coping and stressors and health. Clearly the subsequent results would have been quite different had a four component structure been used, a structure that in no way actually represented the replicable measure of coping finally identified.

The second issue to be raised by the results from this study is the issue of whether the variable being measured here is a coping style or coping behaviour. This distinction is based on the difference between the style of coping over time and the actual behaviours used to deal with a specific event (Newton, 1989). Often the

instructions accompanying coping measures reflect this distinction (Latack & Havlovic, 1992). The question used in this research to generate a list of coping strategies ("What sort of things do you do or actions do you take to cope with the stressors and pressures at work you have identified?") did elicit specific coping behaviours that were related to specific events such as, "set up a system of advice and guidance for teachers having trouble" in relation to the stressor of an incompetent staff member. However although the measure itself was developed around specific behaviours and was occupationally specific it was not oriented around a specific situation when used in the main study but to problems principals and deputy principals generally faced at work thereby effectively assessing a cross-situationally stable coping style or coping resource.

According to Dewe (1992) the principal components analysis of the coping strategies produces coping styles rather than coping behaviours. By identifying underlying dimensions, the analysis combines into one dimension all the empirically related strategies that reflect a particular style of coping (Dewe, 1993b). However what is important is that those dimensions have some basis in reality. If the dimensions can be replicated, and one can be reasonably sure that they do represent the construct being investigated, then that subsequent analysis will be worthwhile. If it can be agreed that there are essentially two dimensions to the coping construct, then researchers, as Dewe (1993b) suggests, can investigate how specific sets of coping strategies are used, or as Erera Weatherly (1996) suggests more appropriately investigate what determines the choice between problem-focused and emotion-focused coping, what role do personality differences play in selecting one coping strategy over another and at what stage in the process does this occur. The explanatory power of replicable dimensions of coping styles is, as these results suggest, worth pursuing.

Returning again to the issue of style, it is interesting to note that of the 67 items composing the original coping checklist, 32 were dropped after *an item to item analysis.* Of the 32 items dropped, 15 were occupationally specific and appeared more likely to be related to specific stressors identified during the pilot stage (e.g. asking for more

consultation; making staff aware of the problems they cause; delegating responsibilities; attending principal and deputy principal meetings getting reassurance from colleagues they are feeling the same way).

Other items to be dropped were largely symptom management items (Latack & Havlovic, 1992) such as eat more; have a few beers; take drugs; smoke more; have a good cry. One reason for this may be that the strategies, while being used by some principals and deputy principals, may not have been used by large numbers of the sample and thus perceived as being more likely to be influenced by the specifics of the situation or the characteristics of the person. The more broad generally applicable strategies were the ones that were used most frequently. The symptom management items that did not load highly on any component could well be the result of a potential response bias, in that principals and deputy principals did not want to admit to eating, smoking or drinking more, or the items could just simply have been perceived as not relevant.

Another noticeable group of items that did not distinguish themselves were more social ones such as, talking things over with colleagues or partner, going to counselling, seminars or meetings with others. This could be explained in terms of the sheer number of hours the present group were working. It may be that they don't have the time or the energy, and when they do they may prefer to be alone. This observation is to some extent borne out when the leisure results are considered.

The results do show, and are supported by recent research, (Erera-Weatherly, 1996) that the same coping strategies get mentioned by respondents over and over again whether in relation to general stressors or specific incidents and they essentially relate to problem solving or are centred in the intrapsychic domain.

The results of this study support the continued use of psychometric evaluation. The added value and conceptual clarity that can be derived when component solutions are considered in terms of their replicability endorses the usefulness of the factor

replication process and the explanatory potential that can be gained in such an approach. While the FACTOREP procedure does not guarantee that the current results will generalise across all conceivable subject groups it should, as the authors suggest (Walkey & McCormick, 1985) give other researchers confidence to replicate the present results.

The results signal the potential to developing a single coping instrument along the lines that Latack and Havlovic (1992) suggest. That is, by taking a middle range approach and identifying categories of coping that reflect those strategies more commonly used by large numbers of people, a basis will be provided for measurement, that not only meets the social obligations of researchers but provides a context within which the construct of coping can be better explored. It would then be important for researchers to evaluate such measures rigorously in the manner of the present study, in order to determine a robust factor structure that is replicable across several populations, situations and times. More research is required to explore the issue of coping measurement, and the reliability, validity and replicability of the different components that emerge.

Dimensions that are Important to Leisure in Coping with Work Stress

The purpose of focusing on leisure, was to identify those dimensions that were perceived to be important for coping with stress. As discussed in the literature review, research into leisure has produced an expansive list of factors reflecting different aspects of leisure. These results, coupled with the range of samples used and the diversity of rating criteria, (Caltabiano, 1994) means that leisure research, has in effect, suffered from the same sorts of measurement problems that have beset coping research. Perhaps the single most important problem facing leisure researchers is that, with the exception of a few studies, (Allen & Buchanan, 1982; Graefe, Ditton, Roggenbuck & Schreyer, 1981) little attempt has been made to consider the stability of factor structures

across samples. One of the research objectives of the present study was to derive a replicable factor structure that reflected those leisure needs considered important for coping with work stress, and then to explore their role in the stressor-health relationship.

In order to demonstrate the significance of the replicable two component structure found, it is necessary to first consider the four component solution derived using the conventional scree test as the method for determining the number of extractable components. The four components identified by the scree test described challenge, relaxation, physical health and social interaction. Cronbach's alpha reliability coefficients were .86, .84, .71, .56. These coefficients failed to reach an acceptable level for at least one component suggesting some instability in the data. Such components are not without support in the literature and resemble similar sorts of solutions found by other researchers. For example Hawes (1979) found factors which were identified as newness and relating to people; mental activity; physical activity; passive contemplation; and challenge; while Beard and Ragheb (1980) found the factors which they identified as psychological; educational; social; relaxational; physiological; and aesthetic; and Pierce (1980) found factors which appeared to represent intimacy, relaxation, achievement and power. More recently Caltabiano (1994) dimensionalised a list of activities for their stress reducing potential and found three factors representing outdoor active sports, social, and cultural-hobbies factors. The point here is that while across sample comparisons can be made and therefore by inference the stability and replicability of the different factor structures can be assessed, such comparisons do more to emphasise the variability in findings and reinforce the need to continue to search for a more stable component structure that can be taken as reflecting the construct of leisure as a means of coping with work stress.

Again in response to Walkey and McCormick's (1985) claim that the replicability of a factor structure should be the minimum criterion for demonstrating the existence of a subscale structure, an attempt was made to replicate the four component structure derived using the scree test. The structure could not be replicated using the

Walkey and McCormick (1985) criteria nor could a three component structure. The only solution which gave any promise of a replicable component structure was a two component solution which clearly reflected a division into active, challenging needs and passive, recuperative needs in coping with work stress. When the least stable items were removed and the scale reduced to 24 items, an even more robust two component structure with near perfect replication (see Table 7.22) emerged with high alpha reliabilities of .86 and .85 respectively and corrected split half reliabilities of .86 and .89. The importance of these results lies in the fact that the only replicable solution to emerge identified two components. Such a result clearly raises doubts about the utility of unsystematically comparing factor structures across samples in an effort to establish their reliability and stability.

The second issue to emerge from consideration of the two factor solution is that the items can be meaningfully described in terms of their active-passive characteristics. Items loading on the first factor emphasised an active component while common to the second factor was De Grazia's concept of sedentary leisure and the need for relaxation (Patrick, 1916; De Grazia, 1962; Dumazdier, 1967; Neulinger, 1974; Parker, 1971). Taking this a stage further, it is possible to consider this result within the context of leisure acting as a means of coping with stress. For example the literature on leisure has long incorporated an escape dimension when explaining leisure motives (Iso Ahola, 1980; 1989). As early as 1975, Driver and Tocher proposed that the motivation to escape a structured life space was reflected in recuperative recreational behaviour clearly identified in the second component of the current solution. Leisure as intrinsically motivated behaviour has also been proposed as optimising health (Coleman, 1993; Coleman & Iso Ahola, 1993). The intrinsic motivation aspect was clearly evident in the second component (e.g. to do something for its own sake; to do something that is important to me) as opposed to the more extrinsically oriented items in the first (e.g. to work towards a goal; to achieve recognition and status).

The value of these findings lies in the observation that leisure as a mechanism for coping with stress can be reliably expressed through two factors reflecting the traditional active-passive dimensions. For diagnostic purposes, such a stable solution can only benefit future research into the nature of leisure and our understanding of its role as a means of coping with stress. Equally significant is the fact that these dimensions support the long established view in the literature that leisure does have a recuperative - therapeutic character and that not only is this character reflected in active and passive modes but that the two modes are important in providing benefits for health and well-being. This view only reinforces the need for the construct of leisure to be better integrated into mainstream stress research, so that its role as a coping activity can be better explored and its explanatory potential exploited.

Multiple Regression Analysis

Work Stressors

The stepwise regressions identified the clear impact of the stressor-work overload and generally confirmed previous findings concerning the aversive consequences of stressors such as work overload and relationships with people. The results also confirmed the impact of more contemporary stressors that have emerged as a result of educational reforms.

The results provide strong support for the relationship between stressors and general measures of psychological well-being with stressors predicting between 5.4% and 32.3% of the variance depending on the nature of the dependent variable. Brief and George (1991) have noted that for a work condition to be considered injurious to mental health it is important to show a relationship between a condition of work and some more general measure of mental health rather than make the connection on the basis of some job related outcome like job satisfaction. Considerable evidence indicates job

satisfaction is not substantially related to more general measures of psychological well-being (e.g. Quinn, Staines & McCullough, 1974; Rice, Near & Hunt, 1980; Brief & Nord, 1990).

These results by using a range of dependent variables point to the possibility of stressors having specific or unique effects and therefore the need for researchers to consider the loss of information that occurs and the consequent limitations on the conclusions that can be drawn when using just a single dependent variable to measure the effects of a range of work stressors or indeed using just a single overall measure of stress.

The results also raise the issue of the relationship between stressors, an issue that has received relatively little attention in the literature. While not a specific objective of the current research project the results obtained do raise the issue of whether some stressors work through other stressors so that their effect is mediated through another stressor rather than having a direct impact on the outcome variable. In the present study it is interesting to speculate on whether stressors like organisational change and increased community involvement in school management simply contribute to the work overload for the principal, with work overload thereby mediating the impact of these stressors on the dependent variables. The question of the relationship between stressors is one that warrants further investigation.

Coping

The importance of coping behaviours in influencing reactions to work stressors was clearly demonstrated by the fact that significant main effects as well as moderating effects were found for both emotion and problem focused coping. Significant main effects were found for emotion focused coping on all dependent variables and for problem focused coping on General Distress, Tension and Sleep Disturbance,

demonstrating that such behaviours are not dysfunctional in themselves as claimed by Parasuraman and Cleek (1984). In terms of the main effects, the beta values for both emotion focused and problem focused coping were negative indicating that more frequent use of coping was associated with lower levels of illnesses as represented by the various outcome variables.

When emotion focused coping moderated the relationship between stressors and stress reactions, two types of moderating effect emerged. In the first, the relationship between the stressor and stress reaction became more pronounced for individuals with *low* use of emotion focused coping than for individuals with *high* use of emotion focused coping. In the second, opposing effects were found for low and high use of emotion focused coping such that at low levels of demand from work stressors individuals exhibiting high use of emotion focused coping experienced greater stress than those who made less frequent use of emotion focused coping. Conversely, at high levels of demand, those making less frequent use of emotion focused coping experienced greater stress than those making more frequent use of emotion focused coping, and the effect for the former was more pronounced (the slope of the regression line was steeper).

The results for problem focused coping were mixed and somewhat contrary to traditional expectations. Again, two types of moderating effects emerged when problem focused coping moderated the relationship between the stressor and stress reaction. In the first, the relationship between the stressor and stress reaction became more pronounced for individuals with *high* use of problem focused coping than for individuals with low use of problem focused coping (i.e. the slope of the regression line was steeper) even through the stressor was generally associated with greater stress for individuals *low* in problem focused coping. The stress levels increased more sharply with increased demand for those high in the use of problem focused coping. In the second opposing effects were found for low and high use of problem focused coping. At low levels of demand from work stressors, individuals who exhibited high use of problem focused coping experienced lower levels of stress than those low in the use of

problem focused coping. However at high levels of demand those who made more frequent use of problem focused coping experienced higher levels of stress than those who made less frequent use of problem focused coping, and again the effect for the former was more pronounced.

The effects of emotion focused and problem focused coping are consistent across the different interactions. A key notion in understanding the buffering hypothesis is that coping interacts with stressors such that the relation between stress and its outcomes becomes more *pronounced* for individuals with low levels of coping than for individuals with high levels of coping. When the buffering hypothesis is considered in relation to the above results it can be seen that consistently emotion focused coping interacted with stressors in such a manner that the relation between stressors and their outcomes became more pronounced for individuals with low use of emotion focused coping than for individuals with high use of emotion focused coping. These results suggest that emotion focused coping can make a significant contribution in buffering individuals against specific stress reactions in relation to specific stressors. Thus it is important that researchers and practitioners understand the potential contribution of emotion focused coping in alleviating strains associated with work stress.

The relationships between stressors and their outcomes consistently became more pronounced for individuals who make more use of problem focused coping than for those who make less use of problem focused coping suggesting that problem focused coping does not necessarily buffer individuals against stress as demand increases. It could be that at higher levels of demand from stressors, more frequent use of problem focused coping makes the level of emotional discomfit worse for specific relationships between stressor and stress.

A number of issues emerge from these results. The first of these is that they appear to indicate that interactions occur under specific conditions. If interactions occur under specific conditions or in terms of specific relationships as these results suggest, it

is necessary for researchers to pay particular attention to the nature of the relationships being explored. This includes for example, considering whether different stressors have specific or more general effects. It would also appear that attention needs to be directed toward considering the intensity of the relationships, as coping may differ in its effects depending on the level of stress. The impact of coping (particularly emotion focused coping) for example, may in fact, only be seen at higher levels of stress.

The second issue concerns whether emotion focused strategies are more effective at higher levels of stress and problem focused strategies at lower levels of stress. The results draw attention to the fact that the literature has for some time allotted different roles to problem focused and emotion focused coping (Roskies & Lazarus, 1980) yet the results suggest that interactive effects are sensitive to the nature of the relationships being explored and the intensity of the relationship. In some situations it may be impossible to deal directly with the source of stress. The most effective strategy in that case is one which attempts to regulate or dissipate the emotional discomfort. Attempting to solve the problem by confronting it head on may be more damaging than the problem itself, even if the problem is solved. If this is the case, more should be done to explicate the role of coping without the expectation that there will be universal effects of coping or a systematic relation between the use of coping strategies and outcomes.

The results also raise the issue of whether, as Aldwin and Revenson (1987) suggest, the relative contribution of personal and environmental factors may influence the coping strategies used. How one deals with emotions in a stressful situation is not just a simple function of personality, nor is how one deals with problems a function of environmental factors, as Aldwin and Revenson (1987) suggest. The present results show that both problem focused and emotion focused coping can have both main and moderating effects on different relationships, with both thereby capable of being influenced by personality and environmental variables. Future research may wish to examine the relative contribution of personality and environmental factors and the impact that each may have on the use of a coping strategy.

These results could be seen as just adding to an increasing number of studies examining the relationship between stress and coping. However the rigorous way in which the measures used in the present study were evaluated should give some confidence in the reliability and veracity of the results. The cautious approach adopted throughout, resulted in ten robust significant interactions. However it should be noted that the interactions accounted for only a small percentage of the variance in the outcome variables. Such small increments in R^2 as a result of the interactions are not unusual in moderated regression analysis (Lim, 1996). Several researchers, (e.g. Cortina, 1993) have argued that the test of the interaction term is essentially a very conservative one as it accounts for the variance leftover "after the stronger main effects have been partialled out" (Pierce, Gardner, Dunham & Cummings, 1993, p. 283). Despite this, Chaplain (1991) noted that even very small interaction effect sizes may be important in the context of a well articulated theory. Hence, although small, the interaction effects in the present study are theoretically interesting in that they sensitise us to the potential role that emotion coping can play in weakening the relationship between stressors and stress. The results confirm that different methods of coping have differential effects with regard to the type of work condition or problem faced (Pearlin & Schooler, 1978) and to the degree of stress experienced (Menaghan, 1982).

Before discussing the remaining results it may be noted that the only work stressor with no interaction with coping on stress reactions was work overload. It may be that work overload the most pervasive of all work stressors is seen as endemic and impervious to coping effects. Alternatively, it may be that work overload is such a common experience, something individuals have so little control over, that it is something that they can do nothing about. Or, it may be that the relationships explored in the present study were not the most salient ones in which work overload is concerned.

Leisure

A review of the leisure literature (Coleman, 1993; Iso Ahola & Weissinger, 1984; Menninger, 1948; Neulinger, 1982; Patrick, 1916) indicates that leisure, by being

able to meet certain individual needs, would be an important factor in influencing any relationship between stressors and well-being. From this it could be argued that leisure is a form of coping that becomes more important as the level of stress increases. The results only partially confirmed this expectation. No significant moderating effects were found on any of the dependent variables for either the active or passive leisure components. No significant direct effects were found for the active/challenge component. The passive, recuperative component indicated, because of the way the question was asked, that higher levels of perceived importance of passive, recuperative leisure was associated with higher levels of all the dependent variables except for severe depression, so that the more intense the stress reaction the more important it was to meet passive, recuperative needs through leisure. That the passive recuperative component was not associated with the stress symptom of severe depression, indicates again how selective and complex relationships between variables may be.

This result is in accord with Kabanoff and O'Brien's (1986) findings that higher stress in demanding jobs is associated with passive recuperative leisure. They found this to be particularly true for managers. It is also consistent with Kabanoff and O'Brien's earlier (1982) study in which it was found that managers had a much larger discrepancy between their work and leisure attitudes than was the case for professionals. They proposed that stress may produce a tendency toward passivity, recuperation, withdrawal only when qualitative or quantitative overload was the major stress involved, and suggested that professional jobs may not have as consistent or high levels of overload as is encountered in managerial jobs. Certainly in the present study, quantitative overload has been confirmed as having a significant impact on the stress of the principals and deputy principals who are increasingly seen as managers rather than educational professionals.

The results from the Kabanoff and O'Brien studies, (1982, 1986) supported by the present result, argues against just focusing on traditional coping strategies being employed, irrespective of the nature of the stressors and stress symptoms (Newton & Keenan, 1985). The fact that no moderating effects were observed could be related to the fact that needs, reflecting attitudes, rather than actual behaviours, were used to

determine the influence of leisure. However, other studies that have investigated the moderating role of health habits, lifestyle, exercise, leisure based social support and leisure activities have found similar results (e.g. Steffy, Jones & Wiggins Noe, 1990; Coleman, 1993; Kirkcaldy & Cooper, 1993; Caltabiano, 1995). Steffy, Jones and Wiggins Noe (1990) suggested that coping reactive strategies are more appropriate for moderating the stressor-stress reaction linkage and the results of the present study of coping and leisure variables together would tend to support that contention. It may be also, that the moderating role of leisure is subsumed through the emotion focused coping strategies. Whatever the explanation, both the qualitative and quantitative results of the present study have demonstrated how important leisure, and in particular the passive, recuperative function of leisure, is for the occupational group under investigation.

There is sufficient evidence to suggest that under certain conditions leisure does have a buffering role in the stressor-stress reaction relationship. Just recently Caltabiano (1995) found a buffering effect of cultural-hobbies leisure (typically passive) for life event distress and illness. Coleman (1993) found that higher perceived freedom in leisure was associated with reduced seriousness of illness when life stress was high. These results and those from the present study warrant continued investigation into the role of leisure in the stress process and health outcome.

One direction for future research might be that having established the stress reducing potential of leisure in terms of needs, the next step would be to investigate the types of activities that people participate in that satisfy the needs identified, and to explore the role of these activities in the stressor-stress reaction linkage. It would also be interesting to explore the stress attenuating potential of passive forms of leisure in particular, as most research has been conducted on its physical aspects and benefits (Kirkcaldy & Cooper, 1993).

Chapter 10: Conclusions

The results of this research support the following conclusions.

Measures of work stressors, coping strategies and leisure needs were developed that had robust component structures and psychometric properties. Whereas many factor-analytic studies base their reported factor structures on results from only a single factor analysis, the present study replicated the factor-analytic results across the present sample. This process demonstrated clearly that the usefulness of subscales in any questionnaire is limited by the extent to which the factors/components and consequent subscales are based upon replicable characteristics of the questionnaire itself rather than the idiosyncratic characteristics of the responding group. The FACTOREP procedure was shown to be a useful and elegant method for determining the best choice of the number of factors to be rotated and it is recommended that the replicability of a factor structure across several separated populations should be the minimum criterion for demonstrating the existence of a subscale structure.

The present study confirms that an association exists between the presence of work stressors and general (not work-specific) indicators of psychological well-being. Clearly it is important to investigate work conditions that adversely affect well-being in life as well as job related strain. It is also clear that work stressors may have very specific relationships with outcomes, and that the ability of coping to affect or alter the relationships between stressors and stress reactions is very sensitive to the type of relationship being explored. Researchers need to be more aware of what it is they are trying to explore and why. More research needs to seek to answer questions such as those posed by Brief and George (1995) where the focus is on exploring just which outcomes are stimulated by particular stressors.

Principals and deputy principals were shown to be an occupational group working long hours and experiencing significant levels of distress on specific stress outcomes. Work overload, relationships with staff and organisational change appeared

to be the most powerful predictors of stress when multiple regression analysis was used to ascertain the relationship between work stressors and stress outcomes. The study shows that the traditional stressors are still present (i.e. pupils) but that new sources of stress have emerged resulting from the need to manage the educational reforms.

As a result of these contemporary stressors, consideration should be given to the vulnerability of this large and important occupational group. The typical approach to stress management has been to treat the individual, that is, to attempt to change how the person perceives or reacts to a demand, or to treat the environment and attempt to remove or reduce the perceived stressor. The more contemporary transactional view of stress would suggest that intervention strategies should focus on the interaction of the two. This means that for the present sample, emphasis should be given to the organisational changes that have been imposed on the principals and deputy principals from the point of view of organisational power and control. If the agencies of government, the Treasury and the State Services Commission wish to impose a particular managerial model on educational institutions, then a logical intervention might be to initiate skill training to provide principals and deputy principals with more control over the ways they handle such demands. The political forces driving the present reforms, apparently obsessed with a managerial ideology, have a responsibility to provide training that enhances managerial skills rather than to continue to place in such positions teachers whose main skills are educationally based.

Ironically the Taskforce to Review Educational Administration recognised that principals would need training for their new roles, but stated quite clearly that they had to be responsible for that themselves (1988, 5.5.2). Yet clearly much of what was happening was outside their sphere of control. Ideally, any intervention should aim to focus at both the individual and the organisational level. However in reality it is not always possible to change the situation. The culture of managerialism being imposed on education is difficult to resist and principals and deputy principals have to develop a specific set of cognitions and behaviours to deal effectively with situations they perceive to be a threat to their self esteem or well-being and to exceed their coping resources.

The issue that then becomes important, is the extent to which there is scope for principals and deputy principals to manage such an environment. The moderated regression analysis tentatively points to more and less appropriate strategies for dealing with the stress associated with these positions. The data suggests that problem focused coping at high levels of demand was more likely to exacerbate stress reactions while emotion focused coping also at high levels of demand helped to minimise such consequences. This has implications for the management of stress, in that in the absence of being able to solve the problem, attempts to regulate the somatic and subjective components of the stress related emotions may be the only strategies available. Again this means that when faced with a situation that taxes resources, the only control that may be available is control over one's own emotions. In this case the constructive use of emotion focused coping strategies may be more appropriate than the more traditional approach that emphasises the need for and importance of problem solving strategies.

Whether principals and deputy principals should be viewed as managers and chief executive officers or as leading professional educators or as a mixture of the two, changes are needed in the recruitment and selection processes, training and development, support and appraisal systems, career development, and options such as early retirement. Stress research in general has been good at identifying the presence of negative features in the environment, but has not given similar attention to the absence of positive features, and it is on those positive supportive features that intervention programmes may wish to focus.

The results for the present occupational group in particular, support the view that higher stress is associated with passive, recuperative leisure, in what Kabonoff and O'Brien (1986) refer to as a reactive compensatory pattern. This result is particularly relevant for those interested in the benefits of physical exercise programmes and worksite health promotions which have seen an exponential increase in recent years (Hendrix, Summers, Leap & Steel, 1995). As the present results and those of Kabanoff and O'Brien (1986) both show, it cannot be assumed that physical exercise programmes will benefit all individuals in managing the psychological effects of stress. Clearly,

social, active, challenging activity would not be on the agenda for members of the present occupational group wishing to cope with their reactions to work stress. Many active sports are stressful pursuits in themselves because of the energy expended and their competitiveness. Caltabiano (1994) found that of the three factors assessed for their usefulness in reducing stress outdoor-active sport recorded the lowest grand mean.

The results of the study demonstrate that leisure activities may vary in their usefulness in reducing stress under different conditions for different groups. The fact that the regression analysis identified an association between passive needs important to leisure for coping with stress means that it would be important to identify the sorts of activities that meet these needs and to explore the roles they play in the stress-health relationship.

Leisure interest and choice may be governed by a need to combat life stress and return afresh to one's work. Certainly differences in the needs potentially satisfied by leisure activities under specific conditions have implications for the delivery of leisure services. In general people should be asked why they choose to get involved in particular leisure activities or programmes. Future theoretical propositions about leisure can make predictions specific to active, challenge or passive, recuperative activities based on needs that are considered important to leisure as a means of coping with stress.

The lack of moderating effects in the present study of the importance of leisure in coping with stress may not be surprising when the differences between situationally specific and reactive coping strategies (Latack, 1986) and more general forms of preventive coping are considered. It may be, that as Steffy, Jones and Wiggins Noe (1990) suggested, specific reactive strategies are more appropriate for moderating the stressor-stress reaction linkage, whereas more general forms of preventive coping as expressed through leisure are less reactive and more likely to operate as "lifestyle" strategies and therefore to have a more direct effect.

Leisure is clearly considered important as a coping resource and on this basis alone, continued investigation into its role in shaping the stress process is warranted. It would be timely now for leisure research to utilise prospective research designs in assessing stress-moderating and health benefits using actual behaviour rather than just attitudes.

Several limitations are inherent in the present study. One limitation is that it is cross sectional in nature. This makes it difficult to draw causal inferences about the relationships among the variables. One avenue for future research is to replicate the study using a longitudinal methodology, since the causal relationships between coping strategies and mental health outcomes cannot be established without such longitudinal data. According to Aldwin & Revenson (1987) although coping strategies and outcomes may well affect well-being independent of prior mental health status, it is equally likely that people in poorer mental health use different and less effective strategies than do those in better mental health.

Another limitation of the study is that the data collected was self report and hence some of the relationships may be exaggerated due to common method variance. However the results of the study showed that the correlations between stressors, moderators and outcomes were modest, suggesting that common method bias was not a problem. Pierce, Gardner, Dunham and Cummings (1993) argued that common method effects are partialled out along with main effects before inspection of the interaction in moderated regression procedures.

The foregoing notwithstanding, the present study also had a number of strengths worthy of note. The first of these relates to the sample and to the fact that it was possible to recruit participants among all the principals and deputy principals throughout New Zealand. The commitment those sampled have to their jobs and to the issue of work stress was apparent in the response rate of 67%. This response rate may also be indicative of the level of stress among the sampled group which was to some

extent reinforced when their scores on the Hopkins Symptom Checklist and the General Health Questionnaire subscales were compared with normative data from other groups in the general population.

Secondly the study was set within a time of considerable change and upheaval in the education sector. Parkes (1994) noted that in moderation studies of the stressor-stress outcome relationship in work settings, findings typically reveal small effect sizes and inconsistencies across different groups. She suggested that data collected at a time of organisational change would provide more fruitful results than studies conducted in a stable work environment. The present participants were having to cope with a range of issues as a result of major organisational change brought about by Government reforms initiated as early as 1989.

The third strength of the present study was the opportunity the research provided when it came to considering measurement issues surrounding work stressors, coping and leisure. The use, for example of both qualitative and quantitative methodologies enabled the researcher to better capture the reality of the experience of those being researched, an issue still vigorously debated by stress researcher (Di Salvo, Lubbers, Rossi & Lewis, 1995). It also enabled the researcher to explore the issue of context specific measures, versus those that generalise across samples and situations.

A fourth strength of the study lay in its uniqueness in exploring the area of leisure as a mechanism for coping with stress particularly when set within the context of more traditional work related measures of coping. In this way this research adds to our understanding of the role of leisure in the stress process and the relationship between leisure and work focused coping.

Fifthly the research offered the opportunity for the different independent variables to be explored using both direct and moderated analysis, in an attempt to express the complexity of the transactional process, acknowledging though, the cross sectional nature of the data and self report method of collection.

Finally the range of outcome variables measured overcomes the criticisms of stress research where explanations are made on the basis of only one dependent variable or only job-related indicators of stress reactions (Brief & George, 1995).

This research has attempted by careful measurement procedures to explore the role of coping and leisure in relation to the causes and effects of stress. The results point to the need to consider carefully not only the nature of the relationship between coping, leisure and outcomes, but also how the intensity of that relationship influences the utility of coping and the importance of leisure in the stressor-stress reaction process. The replication approach to measurement, and the issues that this alone raises is enough to ensure that future researchers pay particular attention to what it is they are measuring and whether what they are measuring clearly reflects the structure of the measurement instrument used. The importance of the coping results lies in the complexity of its relationship with stressors and stress. Here again future researchers are urged to consider and perhaps devote more time to considering the specifics of the stressor-stress relationship when coping is the focus, as well as the comparative utility of different coping strategies as the intensity of that relationship changes.

Finally this research has pointed specifically to the potential of leisure as a coping strategy. How leisure is used to cope with work stress and its role in the coping process should now receive as much attention as have more traditional approaches to coping and perhaps by exploring these issues the potential of leisure as an explanatory construct can be realised.

Research into work stress and coping has reached a level of maturity. To substantiate this achievement, researchers should not be afraid to consider alternative procedures and to adopt new methodologies that question traditional views and signal new pathways that need to be explored so that our understanding of the stress process continues to advance. Hopefully, this research adds to this challenge and motivates researchers to build on and extend their knowledge so that they may not only meet their social obligations but may ultimately provide a sound theoretical basis for intervention.

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APPENDIX A

The Questionnaire

STRESS AND LEISURE QUESTIONNAIRE

GENERAL INSTRUCTIONS

Many questions can be answered by simply ticking or placing a ring around the appropriate number. Please read the questions and their respective instructions carefully. In some questions you will be required to write in an answer in you own words. Please attempt all questions. Do not spend a lot of time on any particular question. Your first response (the one that immediately comes to mind) is probably the best one.

The information which you provide will be held in the strictest confidence.

SECTION 1

DEMOGRAPHIC INFORMATION

Please fill in the details requested below.

1. Please give your age in years. _____

2. Gender (circle one)

   1. Male
   2. Female

3. What is your marital status? (circle one)

   1. single/widowed
   2. married
   3. divorced/separated
   4. never married
   5. other

4. How many children do you have? _____

5. What is your present position?

   a) ☐ Principal b) ☐ Deputy/Assistant Principal

6. How many years have you had in your present position? _____

7. How many years have you been in teaching? _____

8. How many students do you have at your school? _____

9. What is the number of teaching staff at your school? _____

10. Please circle whether your school is in an inner city, suburban, urban, rural or mixed area?

    1. Inner city
    2. Urban
    3. Suburban
    4. Rural
    5. Mixed

11. Approximately how many hours a week do you work? (This includes meetings, contact with boards, parents, i.e. all the work you do which is for the school.)

    _____

12. Please indicate how much your level of satisfaction with you job has changed since the implementation of the Educational Reforms?

    1. Substantially increased
    2. Increased
    3. Much the same
    4. Decreased
    5. Substantially decreased

13. How many days off work have you had for sickness over the last 12 months? _____

14. Thinking back since the implementation of Educational Reforms would you say that the level of work stress is:

    1. Very high
    2. High
    3. Moderate
    4. Low
    5. Very low

SECTION II

STRESSORS IN THE WORKPLACE

15. The statements which follow are all concerned with the issues you may have to confront when carrying out your work. Could you please indicate by circling the appropriate number, how often each issue is a source of stress for you.

Factors	Never	Seldom	Sometimes	Frequently	Always
Time Pressures	1	2	3	4	5
Not being able to schedule time	1	2	3	4	5
Having no rest breaks in the day	1	2	3	4	5
No time to keep up-to-date with reading	1	2	3	4	5
Work interfering with your private life	1	2	3	4	5
Heavy workload	1	2	3	4	5
Being a peripatetic teacher	1	2	3	4	5
Conflict between teaching and administration	1	2	3	4	5
Conflict between educational and economic values	1	2	3	4	5
Endless paperwork	1	2	3	4	5
Being responsible for the safety of the school	1	2	3	4	5
Constant interruptions throughout the day	1	2	3	4	5
Number of meetings to attend	1	2	3	4	5
The increase in workload since "Tomorrow's Schools"	1	2	3	4	5
Lack of consistent overall planning because of reacting to day to day demands	1	2	3	4	5
Conflicting demands (e.g. between teaching and non teaching staff, staff and principal)	1	2	3	4	5
Inability to meet deadlines	1	2	3	4	5
Daily crises	1	2	3	4	5
Increased administration	1	2	3	4	5
Technical hardware breaking down (e.g. computer crashing)	1	2	3	4	5

Factors	Never	Seldom	Sometimes	Frequently	Always
Increased competition between schools for students since abolition of zoning	1	2	3	4	5
Having to deal with many tasks at once	1	2	3	4	5
Performance not recognised by colleagues	1	2	3	4	5
Having to deal with conflict between students and students	1	2	3	4	5
Having to deal with conflict between staff and students	1	2	3	4	5
Trying to develop better communication systems in school	1	2	3	4	5
Continuous change	1	2	3	4	5
The way in which change is implemented	1	2	3	4	5
Increased accountability	1	2	3	4	5
Curriculum changes (e.g. the New National Curriculum and the National Education Guidelines	1	2	3	4	5
Implementing new syllabuses	1	2	3	4	5
Pace of changes (not enough time to prepare)	1	2	3	4	5
Lack of training for changes brought in, e.g. financial management, planning, qualification frameworks, property management	1	2	3	4	5
Introduction of Achievement Based Assessment	1	2	3	4	5
Co-operation between principal and deputy/assistant principals	1	2	3	4	5
Demands of staff	1	2	3	4	5
Having to discipline staff	1	2	3	4	5
Staff not meeting deadlines	1	2	3	4	5
Staff who are uncooperative (not doing duties etc)	1	2	3	4	5
Staff who don't listen	1	2	3	4	5
Staff who are incompetent	1	2	3	4	5
Staff feeling overworked	1	2	3	4	5
Supporting staff through changes	1	2	3	4	5
Staff who lack common-sense	1	2	3	4	5

Factors	Never	Seldom	Sometimes	Frequently	Always
Staff who have unrealistic expectations of principal and deputy/assistant principal	1	2	3	4	5
Staff who are dissatisfied	1	2	3	4	5
Dealing with conflict or disagreement between staff and principal or deputy/assistant principals	1	2	3	4	5
Staff development	1	2	3	4	5
Staff appraisal	1	2	3	4	5
Isolation from social networks in school	1	2	3	4	5
Insufficient support from staff	1	2	3	4	5
Philosophical differences between principal and deputy/ assistant principal	1	2	3	4	5
Overloaded office staff	1	2	3	4	5
Unsatisfactory working conditions	1	2	3	4	5
Pastoral care of students	1	2	3	4	5
Demands by students	1	2	3	4	5
Disruptive students	1	2	3	4	5
Theft by students	1	2	3	4	5
Graffiti/vandalism	1	2	3	4	5
Inability to alter students behaviour	1	2	3	4	5
Pressure from community and politicians not to suspend out of control students	1	2	3	4	5
Demands by parents	1	2	3	4	5
Heightened expectations by parents of school	1	2	3	4	5
Dealing with difficult parents	1	2	3	4	5
Time involved in community and parental consultations	1	2	3	4	5
Dealing with concerned parents	1	2	3	4	5
Dealing with parent/staff conflict	1	2	3	4	5
Dealing with a range of social problems (e.g. drugs, violence)	1	2	3	4	5
Dealing with distressed students	1	2	3	4	5
Conflict between demands and responsibility of job and authority to make decisions	1	2	3	4	5
Allocating resources (e.g. office space, classrooms)	1	2	3	4	5

Factors	Never	Seldom	Sometimes	Frequently	Always
Maintaining resources	1	2	3	4	5
Creating resources	1	2	3	4	5
Conserving energy to save money	1	2	3	4	5
Saving money	1	2	3	4	5
New legislation (e.g. Health and Safety in Employment Act 1992 and Building Act 1991)	1	2	3	4	5
Demands by the board of trustees	1	2	3	4	5
Increased consultation with board of Trustees	1	2	3	4	5
Mismanagement of board of trustees	1	2	3	4	5
Interference by the board of trustees	1	2	3	4	5
Lack of contact with board of trustees	1	2	3	4	5
Demands by the Ministry	1	2	3	4	5
Changes in the knowledge base of Ministry leading to incomplete information	1	2	3	4	5
Lack of information from Ministry	1	2	3	4	5
Unrealistic expectations by Ministry	1	2	3	4	5
Constraints of the Ministry	1	2	3	4	5
Demands by New Zealand Qualifications Authority	1	2	3	4	5
Visits from the Education Review office (e.g. Assurance Audits and Effectiveness reviews	1	2	3	4	5
Pressure of PPTA's modernisation programme	1	2	3	4	5
Low perceived support in the community	1	2	3	4	5
Low perceived status by the community	1	2	3	4	5
Demeaning salary structure for position	1	2	3	4	5
Flow of communication throughout school	1	2	3	4	5
Lack of power to influence change	1	2	3	4	5
Feelings of uncertainty about the future	1	2	3	4	5
Change in government policy, e.g. (from prior to "Tomorrow's Schools" to now)	1	2	3	4	5

Changes in society (e.g. unemployment, violence)	1	2	3	4	5
Other (please specify)					

_____

SECTION III

COPING STRATEGIES

16. Listed below are some ways of coping with job-related stress. Please consider each statement in the list below and indicate how frequently you use such actions to cope with the problems you face as a principal or a deputy principal/assistant principal.

Statement	Never	Seldom	Sometimes	Frequently	Always
Be well organised	1	2	3	4	5
Close your office door	1	2	3	4	5
Suspend out of control students	1	2	3	4	5
Become aware of what are stress producing situations for you	1	2	3	4	5
Set up a system of advice and guidance for teachers have difficulties	1	2	3	4	5
Talk problems over with colleagues	1	2	3	4	5
Attend Principal and Deputy Principal meetings	1	2	3	4	5
Try to predict problems and make contingencies	1	2	3	4	5
Get reassurance from colleagues that they are feeling the same way	1	2	3	4	5
Mix with people not connected with teaching	1	2	3	4	5
Lose temper with staff	1	2	3	4	5
Have a sense of humour	1	2	3	4	5
Try to think objectively about the situation	1	2	3	4	5
Throw yourself into your work and work harder and longer	1	2	3	4	5
Make a concerted effort to distract yourself with some fun or pleasurable activity	1	2	3	4	5
Take some work home and work on it there	1	2	3	4	5
Move on to some activity that you know you can get satisfaction from	1	2	3	4	5
Cover up problems rather than deal with them	1	2	3	4	5
Let people know where you stand	1	2	3	4	5
Smoke more	1	2	3	4	5

Statement	Never	Seldom	Sometimes	Frequently	Always
Drink more tea or coffee	1	2	3	4	5
Reinterpret the situation in a more positive light	1	2	3	4	5
Get mad at yourself and tell yourself you could have avoided the situation	1	2	3	4	5
Deal directly with the situation	1	2	3	4	5
Express your irritation to other colleagues to let off steam	1	2	3	4	5
Express your irritation to yourself - swearing, slamming things down etc	1	2	3	4	5
Decide to go out with family or friends and enjoy yourself, forgetting about work problems for a time	1	2	3	4	5
Stand back and rationalise the problem	1	2	3	4	5
Consciously force yourself to slow down and take a longer view of things	1	2	3	4	5
Try not to take what people say personally	1	2	3	4	5
Take drugs	1	2	3	4	5
Take some time out	1	2	3	4	5
Give up and accept what's happening	1	2	3	4	5
Take your feelings out on whoever happens to be around	1	2	3	4	5
Attempt to strike some balance between home and family life	1	2	3	4	5
Confront the problem	1	2	3	4	5
Prioritise demands	1	2	3	4	5
Talk things over with your partner when you get home at night	1	2	3	4	5
Take one day at a time	1	2	3	4	5
Use holidays to recuperate	1	2	3	4	5
Ask for more consultation over changes being proposed with Government/Ministry	1	2	3	4	5
Go and have a few beers or other drinks	1	2	3	4	5
Use meditation or relaxation exercises	1	2	3	4	5

Statement	Never	Seldom	Sometimes	Frequently	Always
Try and get as much rest as possible	1	2	3	4	5
Try and get some regular exercise	1	2	3	4	5
Engage in engrossing non-work activities	1	2	3	4	5
Delegate responsibility	1	2	3	4	5
Attend seminars on stress management	1	2	3	4	5
Have counselling sessions	1	2	3	4	5
Have a good cry	1	2	3	4	5
Try to prevent others from finding out about how much stress you are under	1	2	3	4	5
Engage in personal recreation	1	2	3	4	5
Eat more	1	2	3	4	5
Play sport	1	2	3	4	5
Become more involved in non-work activities-hobbies, leisure etc	1	2	3	4	5
Find time for quietness and solitude to unwind	1	2	3	4	5
Reconsider how involved you are at work	1	2	3	4	5
Try to reduce your workload	1	2	3	4	5
Be very diplomatic in the staffroom	1	2	3	4	5
Try to reassure yourself that everything is going to work out all right	1	2	3	4	5
Develop sensitivity to your physical and emotional responses to stress	1	2	3	4	5
Develop techniques for active listening and counselling with people you are dealing with	1	2	3	4	5
Support victims in the school	1	2	3	4	5
Make staff aware of the trouble they cause	1	2	3	4	5
Arrange help for distressed students	1	2	3	4	5
Just ignore the situation	1	2	3	4	5
Have an unfailing optimism that it is all worthwhile	1	2	3	4	5

Other (please specify) _____

SECTION IV

LEISURE LIFESTYLE

17. In the space below could you list the activities and/or experiences that you enjoy doing in your leisure time when you decide to take some "time out", and then show **how often** and **for how long** you participated in each activity during the past 12 months.

	Once a month or less	**Once a week**	**More than once a week**	**Less than 30 mins**	**30 mins to an hour**	**More than 1 hour**
1. _____	1	2	3	1	2	3
2. _____	1	2	3	1	2	3
3. _____	1	2	3	1	2	3
4. _____	1	2	3	1	2	3
5. _____	1	2	3	1	2	3

18. Do you use leisure activities - experiences to help you cope with the stress at work?

    1. Yes
    2. No

19. If yes, how do leisure activities help you in coping with the stress at work?

    _____

20. Would you say that leisure in an important part of your life?

    1. Yes
    2. No

21. If you answered yes could you please state why? If you answered no could you please state why not?

    _____

22. Have you always regarded leisure as an important part of your life?

    always 1
    nearly always 2
    more recently 3
    never 4

23. If you answered "3" in the previous question, what happened to encourage you to take up leisure?

_____

24. Here are some reasons why people use leisure to cope with stress at work. Please consider each of the statements below and indicate how important each is to you as a means of coping with work related stress.

Reasons	**Of no importance**	**Of little importance**	**Of moderate importance**	**Important**	**Very Important**
To feel better mentally	1	2	3	4	5
To do things with my friends	1	2	3	4	5
To meet new people	1	2	3	4	5
To meet people of the opposite sex	1	2	3	4	5
To have fun	1	2	3	4	5
To get pleasure	1	2	3	4	5
To improve physical health	1	2	3	4	5
To get exercise	1	2	3	4	5
To learn new things	1	2	3	4	5
To use my skills and talents	1	2	3	4	5
To relax	1	2	3	4	5
To reduce stress	1	2	3	4	5
For excitement and stimulation	1	2	3	4	5
To enjoy nature	1	2	3	4	5
To achieve recognition or status	1	2	3	4	5
To work towards a goal	1	2	3	4	5
To keep busy	1	2	3	4	5
To do something different from work	1	2	3	4	5
To be creative	1	2	3	4	5
To contribute to the community and to help others	1	2	3	4	5
To compete with others	1	2	3	4	5
To be away from my family	1	2	3	4	5
To daydream/fantasise	1	2	3	4	5

Reasons	Of no importance	Of little importance	Of moderate importance	Important	Very Important
To be free to do what I like	1	2	3	4	5
To do something absorbing	1	2	3	4	5
To do something for its own sake	1	2	3	4	5
To be with my family	1	2	3	4	5
To do something challenging	1	2	3	4	5
To do something risky	1	2	3	4	5
To do something that is important to me	1	2	3	4	5
To do something quiet and peaceful	1	2	3	4	5
To rest and do nothing	1	2	3	4	5
To do something where I am in control	1	2	3	4	5
To be totally focused	1	2	3	4	5

Other (please specify)_____

25. HOPKINS SYMPTOM CHECKLIST 21

INSTRUCTIONS: How have you felt during the past seven days including today? Use the following scale to describe HOW DISTRESSING you have found these things over this time.

		Not at all	**A little**	**Quite a bit**	**Extremely**
1.	Difficulty in speaking when you are excited	1	2	3	4
2.	Trouble in remembering things	1	2	3	4
3.	Worried about sloppiness or carelessness	1	2	3	4
4.	Blaming yourself for things	1	2	3	4
5.	Pains in the lower part of your back	1	2	3	4
6.	Feeling lonely	1	2	3	4
7.	Feeling blue	1	2	3	4
8.	Your feelings being hurt easily	1	2	3	4
9.	Feeling others do not understand you or are unsympathetic		2	3	4
10.	Feeling that people are unfriendly or dislike you	1	2	3	4
11.	Having to do things very slowly in order to be sure you are doing them right	1	2	3	4
12.	Feeling inferior to others	1	2	3	4
13.	Soreness of your muscles	1	2	3	4
14.	Having to check and double-check what you do	1	2	3	4
15.	Hot or cold spells	1	2	3	4
16.	Your mind going blank	1	2	3	4
17.	Numbness or tingling in parts	1	2	3	4
18.	Trouble in your throat	1	2	3	4
19.	Trouble concentrating	1	2	3	4
20.	Weakness in parts of your body	1	2	3	4
21.	Heavy feelings in your arms and legs	1	2	3	4

26. GENERAL HEALTH QUESTIONNAIRE

Please read this carefully:

We should like to know if you have had any medical complaints, and how you health has been in general, over the past few weeks. Please answer ALL the questions on the following pages by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you answer ALL the questions.

Thank you very much for your co-operation.

Have you recently

1. Been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much worse than usual
2. Been feeling in need of some medicine to pick you up?	Not at all	No more than usual	Rather more than usual	Much more than usual
3. Been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
4. Felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
5. Been feeling full of energy?	Better than usual	Same as usual	Less energy than usual	Much less energetic
6. Found yourself waking early and unable to get back to sleep?	Not at all	No more than usual	Rather more than usual	Much more than usual
7. Been getting up feeling your sleep hasn't refreshed you?	Not at all	No more than usual	Rather more than usual	Much more than usual
8. Had difficulty in getting off to sleep?	Not at all	No more than usual	Rather more than usual	Much more than usual
9. Had difficulty in staying asleep once you are off?	Not at all	No more than usual	Rather more than usual	Much more than usual
10. Been having restless, disturbed nights?	Not at all	No more than usual	Rather more than usual	Much more than usual
11. Been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
12. Found everything getting on top of you?	Not at all	No more than usual	Rather more than usual	Much more than usual
13. Been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
14. Been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual

15. Been feeling nervous and uptight all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual
16. Felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
17. Felt that life isn't worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
18. Thought of the possibility that you might do away with yourself?	Definitely not	I don't think so	Has crossed my mind	Definitely have
19. Found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
20. Found that the idea of taking your own life kept coming into your mind.	Definitely not	I don't think so	Has crossed my mind	Definitely have

27. Please indicate by circling the number on the right-hand side whether you agree or disagree with the following statements about your job.

Items	Strongly disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Strongly agree
I work under a great deal of tension	1	2	3	4	5
My job often makes me fidgety or nervous	1	2	3	4	5
I often get irritated and annoyed over the way things are going	1	2	3	4	5
Job worries sometimes get me down	1	2	3	4	5
Problems associated with the job sometimes keep me awake at night	1	2	3	4	5
I have worried after making a decision whether I did the right thing	1	2	3	4	5
I breathe a sigh of relief when I finish work for the day	1	2	3	4	5
I often wonder whether it is all worthwhile	1	2	3	4	5

Thank you for being so helpful. Your efforts in filling out this lengthy questionnaire are much appreciated and will make a very significant contribution to this study.

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