

CHAPTER 1.

1.

Interest in the field of stress has increased dramatically during the last two decades. While the concept has been widely researched in many areas of science and technology it has created particular interest in the life sciences. It has been known for some time that stressors cause a number of physiological and psychological changes in the individual (Selye, 1978). Until recently, contemporary stress research in this area has been primarily concerned with the effects of dramatic life events on health outcomes (Holmes and Rahe, 1967), and has generally ignored the daily frustrations and annoyances that we all experience. However, current studies have indicated that the minor stresses, or "little hassles", characteristic of daily living may relate more significantly to health than do major life events (DeLongis, Coyne, Dakof, Folkman and Lazarus, 1982; Kanner, Coyne Schaefer and Lazarus, 1981; Lazarus, 1984). The purpose of the current research was twofold: (i) to investigate the relationship between life events, "little hassles" and health from a transactional perspective (Coyne and Holroyd, 1982; Lazarus and Launier, 1978) and, (ii) to determine whether the results of the American 'hassle' studies could be replicated within an Australian population using a broader, demographic sample.

While the present study was concerned with stress and health which necessarily entails biological implications, the emphasis was primarily psychological. The physiology of the stress response and its consequences, have been well documented and it is clearly indicated that stress-related biological disturbances can result in adverse health outcomes (Bakal, 1979; Byrne, 1981; Cannon, 1932; Dohrenwend and Dohrenwend, 1974; Frankenhaeuser, 1975; Jenner, Reynolds and Harrison, 1980; Lazarus, 1966; Lolas and Mayer, 1987; Mason, 1975b cited in Lazarus and Folkman, 1984; Selye, 1978). As the research was not about demonstrating this relationship, but evaluating if "hassles" were more associated with symptomatology than life events, the role of cognitive factors and other concepts relevant to the study aims, comprised the basic information to be discussed.

Interest in the adverse effects of life events arose primarily from the pioneering work of T. E. Holmes and R. H. Rahe (1967) who attempted to find measures predictive of potential health. Using the Social Readjustment Rating Scale (SRRS), they produced modest correlations between major life events and health outcomes. The assumption was that change, positive or negative, caused stress and that these effects were cumulative. For example, the more life events experienced during a year, the greater the possibility of illness occurring the following year (Atkinson, Atkinson and Hilgard, 1983; Dohrenwend & Dohrenwend, 1974; Monroe, 1982).

While the SRRS has been used extensively, it has been criticized on methodological, conceptual and empirical grounds. Questions have been raised concerning item weightings and representativeness, and the role of stress arising from non-events (e. g. boredom), which have not been included in the scale. One of the major criticisms is that the scale assumes that we all respond to the same stimuli in a similar way. This approach does not allow for individual differences in appraisal or coping resources (DeLongis, Coyne, Dakof, Folkman and Lazarus, 1982; Kanner, Coyne, Schaefer and Lazarus, 1981; Lazarus 1981; Monroe, 1982; Rabkin and Struening, 1976; Zimmerman, 1983). Attempts have been made to overcome these problems such as a distress subscale, to measure the subjective impact of life events (Dohrenwend and Dohrenwend, 1974; Horowitz, Wilner and Alvares, 1979; Paykel, Prusoff and Ulenhuth, 1971; Tennant and Andrews, 1976).

Alternatively, it has been suggested that the effects of major life events, may relate not so much to the events *per se*, but to the disruption they cause in daily living patterns (Hinkle, 1974). Pursuing this notion, R. S. Lazarus and his colleagues have proposed that it is the "little hassles," or minor, daily stresses we all experience that impact more significantly on health than do major life events. They consider that stress arises from transactions between the individual and the environment, the results of which can tax, or exceed the individual's coping resources. They do not deny that major life events impact on health, but because current transactions are generally appraised as having greater immediate significance than remote, past events their investigations have focussed on daily activities (Coyne and Holroyd, 1982; Coyne and Lazarus, 1980; DeLongis et al., 1982; Kanner et. al., 1981; Lazarus, 1971, 1984; Lazarus and Launier, 1978).

The Lazarus' studies have yielded positive results and it is indicated that hassles are better predictors of somatic and psychological symptom status than are life events. These studies are not only significant in terms of demonstrating a relationship between daily stresses and illness, but represent a substantial shift of emphasis in stress-health research. Theoretically, this research does not assume that change per se causes stress, but that the dynamics of the the person-environment interaction mediated by cognitive appraisal are important in eliciting the stress response. Stress-health relationships are considered in terms of the ongoing situation between the individual and the environment, rather than the simple tallying up of discrete events.

The different emphasis of the life event and transactional approaches to stress and health, relate significantly to differences in theoretical premises and the way in which each conceptualizes the notion of stress. These variations are important not only in terms of interpreting study outcomes, but because they highlight a fundamental problem confronting all stress researchers.

WHAT IS STRESS?

The word 'stress' and related expressions have over 300 definitions, the origins of which appear as far back as the early languages of Latin, Old French and Middle English (Dobson, 1982). While the term 'stress' first appeared in *Psychological Abstracts* in 1944, it had been used as early as the 14th to 18th centuries in reference to hardship and adversity. During the 17th and 18th centuries 'stress' came into usage in the physical sciences and was associated with the notion of force, or load. The change incurred by resistance to this external 'stress' was defined as 'strain' (Dobson, 1982; Hinkle, 1974; Lazarus and Folkman, 1984).

Contemporary interpretations generally regard stress as a negative experience, although some level of stress is normal. The only totally stress-free state is death (Selye, 1978). While stress is usually associated with arousal, it can also be a function of under-arousal, such as boredom (Montgomery and Evans, 1984; Yerkes and Dodson 1908 cited in Dobson, 1982). Stress has been applied to states ranging from anxiety to frustration, trauma and anomie, and so is frequently user specific; meaning different things to different users and varying across situations (Dobson, 1982; Lazarus and Folkman, 1984). Despite general use of the term, and the fact that it has been around for a long time, we find there is no standard, universal definition of stress.

However, in recent decades there have been attempts to operationalize the stress concept to facilitate systematic research in to its effects on performance and health. The study of stress has generally been approached from three different levels; (i) physiological stress, concerned mainly with disturbances in biological systems; (ii) psychological stress, primarily involved with the cognitive evaluation of harm, or threat, and (iii) social stress, concerned with disturbance of social units, or systems (Selye, 1977; Lazarus, 1966; Smelser, 1963). However, within these perspectives 'stress' has been operationalized as a *stimulus*, a *response* or an *interaction* between stimulus and response (Monat and Lazarus, 1977).

STIMULUS, RESPONSE OR INTERACTION

Stress as a Stimulus. A stressful stimulus has been defined as anything which disrupts the organism's equilibrium, or homeostasis, and tends to maintain disequilibrium (Welford, 1973). Considering that homeostasis is one of the most important and characteristic function of living systems, the ability of a stimulus to affect homeostasis has important implications for the system's well-being (Cannon, 1932; Lazarus and Folkman, 1984; Monat and Lazarus, 1977; Selye, 1978).

However, identifying 'stressful' stimuli is not a simple task. As indicated by Welford (1973), disruption of homeostasis can be caused by acute, chronic or intermittent disturbances. This allows for a vast array of potential stressors. Consequently, stimulus approaches to stress have found the need to impose some sort of structure, or categories, to make sense of the situation and to obtain an operational definition for research. As stimuli could be basically divided into person and environmental variables, many stimulus-based studies have considered stressors in terms of this dichotomy; person and environmental (or situational) stress determinants.

Research into person-stress determinants has included studies of biological and psychological variables, such as obesity, personality type, sex, age, cognitive and emotional factors (Byrne, 1981; Eysenck, 1953; Lazarus and Launier, 1978; Lovallo, 1978; Nagy and Davis, 1985; Weiner, 1987). Alternatively, situational-stress studies have covered areas such as major life events and occupation (Cohen, 1980; Janis, 1951; Holmes and Rahe, 1967; Lazarus and Cohen, 1977; Lazarus and Folkman, 1984)

Stress as a Response. The response definition of stress has been applied to the adaptive responses elicited by adverse stimuli. Stress as a response is central to the pioneering work of Hans Selye (1978) and important to the life events approach. Selye used the term stress to describe a particular set of physiological responses. He proposed that stress was a non-specific, generalized response of the body to a noxious stimulus, or demand. The stimuli, or 'stressors,' capable of eliciting the response, could be varied and comprise physiological or psychological events. However the response, which Selye called the General Adaption Syndrome (GAS), was universal, or stereotypic. While the physiology of the body's stress response is complex, and involves activation of the endocrine, autonomic and central nervous systems (specifically the sympathetic-medullary and pituitary-adrenocortical systems), Selye's work has indicated that the stress response follows three distinguishable stages regardless of the nature of the stressor (Selye, 1978).

Stage one entails **Alarm**, or activation of the response with subsequent disturbance of homeostasis. If not resolved, then the response moves in to stage two, **Resistance**, characterized by apparent adaption to the stressor with re-establishment of homeostasis. However, if the organism remains in stage two because of failure to resolve the stressor, this can lead to stage three, **Exhaustion**. This final phase of the sequence involves depletion of adaptive 'reserves' caused though sustained resistance, with a re-emergence of stage one characteristics. Stage three can involve possible collapse, or even death. Because there is a direct effect on the body's physiology through the mobilization of adaptive responses, Selye proposed that 'derailment' of the GAS leads to diseases of adaption. Adaptive diseases can include allergic, cardiovascular and renal problems (Selye, 1978).

Importantly, these early studies by Selye not only provided insight into the physiological correlates of adaptive processes, but framed the first operational definition of stress; a neuroendocrine response that was objectively measurable. The life event approach was strongly influenced by Selyean principles evident in the assumption that life events involve changes which require adaption (Holmes and Rahe, 1967).

Stress as an Interaction. Interactional stress models take into account the organism and its interaction with the environment, which adds an important dimension to S-R definitions. With this model we are not confined to thinking in terms of purely

person or situational variables, but can consider stress in terms of a reciprocal relationship occurring within an on-going, or daily situation (Monat and Lazarus, 1977; Lazarus and Launier, 1978; Speilberger and Sarason, 1975).

From an interactional perspective, stress does not reside solely in the individual or the environment, but is a function of the interaction between both. 'Stress' arises when the transactions between person and environment tax, or exceed, the adaptive capacities of the individual. Similar principles apply in relation to specific tissue disturbances, or other systems, such as social systems. Further, Lazarus et al. (1985) proposed that because stress has many facets and is not easily defined, the term may be better employed as general heading, or "rubrik" encompassing a complex, multivariable system (p 1). The person environment-interaction is an important aspect of the transactional perspective and the 'hassles' research, which will be discussed in greater detail later.

THE LIFE EVENT TRADITION.

The influential work of Holmes and Rahe (1967) suggested that the magnitude of readjustment required by the occurrence of life events, pleasant or unpleasant, increased the probability of illness. Though this research was moving into the realm of psychosocial factors, rather than physiological factors, the premise of change per se as a stressor eliciting adaptive response was still in the Selyean tradition. For example, while Holmes and Rahe (1967) conducted their survey research outside the controlled, laboratory environment, they were still explaining the effects of psychosocial variables physiologically, in terms of biological adaption elicited by change.

Historically, early stress theory and research was predominantly associated with biological studies (Cannon, 1932; Selye, 1936). However, interest in the psychological and social determinants of the stress response was inevitable. Much of the early research had involved animal studies which were at times, rather uncritically generalized from laboratory animals to the human condition (Lolas and Mayer, 1987). Also, Selye's perspective did imply psychosocial correlates of stress, although how they operated physiologically was not made clear. The interest in the psychology of stress gained momentum in the 1940's during World War Two, with the advent of military interest in stress effects on combat performance and

effectiveness. The Korean and Vietnam wars sustained this mobilization of interest. There was a particular concern with the effects of adreno-cortical hormones on skilled performance, and the psychophysiological outcomes of combat stress, including stress-related illnesses (Lazarus and Folkman, 1984; Rahe and Arthur, 1987 cited in Lolas and Mayer, 1987).

It is worth noting that during the early 1950's, apart from consideration of the occurrence of events, there was some interest in the subjective experience of life events; an interest consistent with the tenets of the transactional perspective. Subjective interests included the psychosocial nature of individual's life prior to the illness, feelings of loss or helplessness engendered by life experiences, and concern with thoughts and emotions associated with the events rather than the actual nature of the experience. However, because a subjective approach posed major methodological problems (e. g. the operationalizing of subjective interpretations), there was a shift of emphasis away from subjective evaluations toward objective analysis of the nature of specific life events and health outcomes. This shift was also consistent with the Behaviourist ethos popular at the time, with its emphasis on the objective measurement of behaviour (Hinkle and Wolff, 1952; cited by Rahe and Arthur in Lolas and Mayer, 1987; Lazarus and Launier, 1978, Skinner, 1950).

Also, apart from pressure to undertake objective empirical research, studies had indicated an association between the occurrence of life events and a diverse range of psychological and somatic disorders. For example, it had been observed that life stress was significantly higher two years prior to the onset of symptoms in tuberculosis patients relative to non-patients (Hawkins, 1957; Kissen, 1958). Similarly, connections were made with myocardial infarction and other severe cardiovascular disease, stroke, pregnancy and parturition problems, development of illnesses such as diabetes and rheumatoid arthritis and increased susceptibility to accidents in children (including traffic accidents involving teenagers), Schizophrenia, depression and other somatic, psychological and behavioural problems (Barrat, 1978; Brown and Birley, 1968; Lolas and Mayer, 1987; Wolff, Wolf and Hare, 1950 cited in Holmes and Rahe, 1967).

The pioneering work of Holmes and Rahe (1967) was responsible for the development of standardized measures of life event changes and the direction of stress health research in the 1960's. Using Adolpf Meyer's "life chart" method of

combining medical data into a biography, they studied over 5,000 patients and investigated life event occurrences relative to disease onset. They concluded that although life events greatly differed, there was a relationship between life events and health, in addition and congruent with the notion of a generalized adaptation response they suggested that magnitude of change was the pertinent stimulus (Chalmers, 1982; Isherwood, 1981). In effect, the bigger the change associated with the life event, the greater the effect on subsequent health.

Holmes and Rahe (1967) subsequently developed the 43 item Social Readjustment Rating Scale (SRRS). The SRRS measures the anticipated magnitude of adjustment to particular life events, while a companion scale, the Schedule of Recent Life Events (SRE), recorded the number of life events experienced. "Scored together they yield a Life Change Unit total score (LCU) which has been found to be predictive of illness" (Gerst, Grant, Yager, Sweetwood, 1978, p 1). The 43 items on the SRRS relate to life style and individual events, and each item was ascribed a Life-Change-Unit (LCU). To obtain the LCU weightings, 400 subjects from a broad, demographic sample, were asked to rate various events in terms of stress levels and adjustment requirements, relative to the adjustment required by marriage. Items were ranked from most stressful (death of a spouse: 100 LCU's), to least stressful (minor legal violations: 11 LCU's). During the construction of the SRRS, respondents were asked to use 'marriage' as the benchmark to code other items. Though marriage is a positive event it was considered stressful because it requires considerable adjustment, so was allotted an LCU of 50. The respondents ranked the other items by comparing them to marriage (Holmes and Rahe, 1967).

Subsequent research using the scale found a consistent relationship between, and an increase in, the number of life events and the occurrence of increased psychological and somatic health problems. For example, 50 per cent of individuals recording 200 to 300 LCU's within a year reported health problems the following year, and 79 per cent for those with an LCU score over 300 (Atkinson, Atkinson and Hilgard, 1983; Holmes and Masuda, 1974; Holmes and Rahe, 1967; Isherwood, 1981).

Despite widespread use of the SRRS, and the life event approach to health outcomes, the perspective has engendered considerable debate. As indicated earlier, this approach to measuring stress has been criticized on a number of theoretical and methodological grounds. Initially, there are difficulties encountered with the basic

theoretical assumptions of the life event model. In the Selyean tradition the life event approach employs a 'response' definition of stress. In response models, stress involves a departure from optimum arousal or homeostasis, requiring the mobilization of adaptive resources to restore equilibrium. But how do we define 'optimum arousal,' and baseline conditions of homeostasis?' Any movement of the organism entails neurophysiological activation with some departure from equilibrium. Further, increased neuroendocrine activity (e.g. heightened heart rate) can result from stimuli as diverse as physical exercise or heightened anxiety about an approaching school exam. So arousal and disturbances of homeostasis are not solely a function of stressful stimuli (Lolas and Mayer, 1987). Importantly, while the response physiology to various stimuli may be grossly similar, the psychological meanings of these events can be radically different (Lazarus, 1971; Lazarus and Folkman, 1984; Lolas and Mayer, 1987; Monat and Lazarus, 1977). The implications are that variables other than change per se are involved in stress-health outcomes

These implications lead to important criticisms of the SRRS. The SRRS does not have the ability to obtain information about the personal significance of the events to the individual, or about the individual's coping strategies within the ongoing, daily situation. In addition, the SRRS does not take into account variables that have been implicated in stress-health outcomes such as individual differences in sex, age, marital status, occupation and education. Further, retrospective nature of the life event studies, this raises the problems of the accuracy of subject's recall and possible bias from the interpretation of an event as a probable 'cause' of illness. So it can be difficult to evaluate if a life event was antecedent or consequent to illness (Chalmers, 1982; DeLongis et al., 1981; Dohrenwend et al., 1978; Monat and Lazarus, 1977; Mechanic, 1974).

Other criticisms have been made concerning the representativeness of SRRS items and their weightings, and the scale's inability to account for the role of stress arising from non-events, such as boredom (Kanner et al., 1981; Lazarus, DeLongis, Folkman and Greun, 1985) Further, the correlation between cumulative life events and health outcomes of approximately $r = + 0.12$ is not strong (Rabkin and Struening, 1976).

There have been attempts to overcome some of these problems and take into account individual differences. For example, researchers have incorporated aspects of life change such as quality, social desirability, gains and losses, or 'entrances' and 'exits' from the social field, feelings of control, social buffers, short-term and long-term threat and loss, distress and subjective interpretation (Chalmers, 1982; Brown and Harris, 1978; Dohrenwend and Dohrenwend, 1974; Horowitz, Wilner and Alvarez, 1979; Paykel, Prusoff and Ulenhuth, 1971; Tennant and Andrews, 1979; Tennant, Smith, Bebbington and Hurry, 1981 Lazarus, 1971). Recently, the operation of possible mediational, or intervening processes and life events have been considered (Rahe and Arthur, 1987; Sarason, Levine and Sarason (1982). However, despite the inclusion of more variables the life event perspective still tends to persist with the notion of a generalized stress reponse (DeLongis et al., 1981; Kanner et al., 1981). Consequently, the approach still does not adequately account for individual differences in personal appraisal of, and vulnerability to events (van Praag, 1979), which can vary across individuals, time and situations and involve the individual's personal demographics (e. g. sex, age, marital status). Similarly, the life event approach does not account for the fact that environmental events themselves can differ situationally, temporally, quantitatively and qualitatively (Lazarus and Folkman, 1984; Lazarus and Launier, 1978).

Dissatisfaction with the limitations of the life event perspective and S-R stress models, lead Lazarus and his colleagues to search for a more viable alternative. Given the notion that life events may impact on health by disturbing daily, living patterns (Hinkle, 1974), and the need to account for individual differences, they focussed on the relationship of minor, daily stresses to health using a transactional perspective (DeLongis et al., 1982; Kanner et al., 1981; Lazarus, 1981; Lazarus, 1984; Lazarus and Folkman, 1984). The transactional stress model had been developed from earlier research and, as further discussion will show, was particularly suited as a framework for the 'hassles' research.

HASSLES AND THE TRANSACTIONAL STRESS PERSPECTIVE.

Relative to life events, the systematic study of minor, daily events and their impact on health, has a briefer history. In 1981, Kanner et al. investigated the relationship between hassles and psychological symptoms. Subsequently in 1982, DeLongis et al. examined the effect of hassles on somatic health. They found that apart from the Kanner et al. (1981) research, their literature search revealed few studies dealing specifically with minor stresses. A very early work by Cason (1930), presented a

description of 'common annoyances' with analysis of possible causes and consequences, while in 1979, Lewinson and Talkington found a moderate relationship between the number and 'subjective aversiveness of unpleasant events' over the period of a month. Other contemporary studies that had addressed the effects of daily stresses tended to limit their investigations to a specific stressor, such as noise (Glass and Singer, 1972).

However, while the study of daily stresses is a recent innovation in stress health research, the assumptions underlying the 'hassles' research and its transactional perspective, have been around for some time in one form or another. Because these assumptions are important, and relate to fundamental differences between the life events and hassles research, they will be discussed further and used to illustrate the background to the hassles studies.

Historically, while the life events model has a physiological background, the transactional perspective has its roots in the traditions of cognition and phenomenology. Cognition relates to the processes of mind such as perception, learning, and memory (Solso, 1979). Phenomenology is concerned with "the systematic investigation of conscious experience as experience" (Drever, 1975, p 210). At a time when psychology was primarily concerned with conceptualizing the individual within a radical Behaviourist framework of stimulus-response, there were others who proposed that the individual is a dynamic energy field with the ability to behave selectively, rather than simply respond robotically to stimuli. Importantly, rather than the environment simply impinging on the individual, it was suggested that the person-environment relationship was interactive (Coyne and Holroyd, 1982; Lazarus, 1966; Lazarus and Launier, 1978; Lewin, 1935).

The results of the war studies and psychosomatic medical research (Lolas and Mayer, 1987), had indicated that factors such as motivation, emotion, coping strategies, adaptive resources, individual vulnerability and the subjective interpretation of stimuli, were relevant in stress-health outcomes and human performance. Consequently, support was obtained for the notion of a dynamic interaction between the individual and the environment. To accommodate this information, stimulus-response models were expanded to S-O-R or, 'stimulus, organism, response,' frameworks. 'Organism' related to the biological structure, and the behavioural repertoire available to the organism within the constraints of that

structure (Lolas, 1987). The postulation of an intermediary state between stimulus and response, not only stimulated stress research from a psychological perspective, but opened the door to an expanse of possibilities relating to mediation processes. Of particular interest was the notion of the organism as the mediator of stress (Lazarus and Launier, 1978). This S-O-R development, raised two important possibilities specific to stress-health research. First, was the notion of psychosocial mechanisms in stress-health pathways and second was the notion of specificity, or individual differences in response to stimuli. Differences in ideas concerning psychosocial mechanisms and specificity, are fundamental to differences between the life events research and the hassles studies. Therefore, psychosocial mechanisms and specificity will be discussed in greater detail. How stress can affect health will be considered first, because it leads into the concept of specificity, and the role specificity played in the development of the transactional perspective and the 'hassles' research.

How Does Stress Affect Health? While the change involved with life events may indeed constitute a stressor, a psychological viewpoint allows for inclusion of other stress-health pathways. Monat and Lazarus (1977), suggest three possible ways in which stress can precipitate illness. First, stress may disrupt tissue function. From a physiological stance, mobilization of the stress response activates powerful neuroendocrine processes which essentially initiate "fight or flight" behaviour (e. g. elevated heart rate, blood pressure), aimed at coping with the stressor and restoring homeostasis. As previously indicated by Selye (1978), failure to resolve the stress situation, or the more stressors experienced such as an increased number of life events, can lead to 'diseases of adaption.' Stress can also affect the body's immune system, resulting in lowered resistance with increased susceptibility to infection and disease (Ader, 1983; Amkraut and Solomon, 1975). Recently, there has been a particular interest in the relationship between stress, immunosuppression and cancer (Bammer and Newberry, 1981). While there is data for and against the notion that a weakened immune system predisposes to cancer, evidence does suggest that immunological factors may be operative (Keast, 1981; Locke, Kraus, Leserman, Hurtst, Heisel and Williams, 1984). Consequently, arousal and the stress response may be involved in cancer development via their affect on the immune system. From a psychological perspective, and pertinent to the hassles research, physiological arousal can relate to the frequency, perceived intensity and psychological importance of events, not just the occurrence of the event (Coyne and Holroyd, 1982).

Second, maladaptive coping strategies can link stress with health outcomes. For example, if an individual employs alcohol as means of escape from an on-going, stressful situation, this not only fails to resolve the demands the situation entails, but adds the additional strain of adverse alcohol effects on the body (Steiner, 1971; Keuhle, 1979). The life event model can not easily account for this type of situation as it primarily records the number of discrete events experienced within a particular time span, ignoring the transactions occurring between the individual and the daily environment.

A third possible stress-disease route is the minimization of potentially serious or fatal symptoms, through the use of psychosocial mechanisms. For instance, the situation may arise where intermittent chest pain is 'denied' or 'rationalized' as 'indigestion,' when in fact it may herald an impending heart attack. Further, certain individuals or social groups may be less inclined than others to seek medical advice for potential health problems because of personal or cultural attitudes, such as stoicism (Monat and Lazarus, 1977). Also, it is worth noting that it is possible to have a physiological stressor without psychological involvement.

For example, a person may not know they have a potentially life-threatening cancer so specific psychological arousal responses are not activated, but the reverse is highly unlikely; appraisal of threat does not usually occur without some mobilization of the physiological stress response. However, arousal effects may be minimized by effective cognitive management skills (Lazarus and Folkman 1984). Again, because the life event model views the magnitude of change as the crucial factor in stress-health outcomes it does not adequately handle the concept of psychosocial mechanisms. On the other hand, the 'hassles' approach focusses on the daily transactions between the individual and the environment and is concerned with the way the individual appraises and copes with the on-going situation (Lazarus, 1971).

Given that biological and psychosocial factors are pertinent to stress-health outcomes, we need to know how they actually operate? Are the effects general, in that any stressor activates the GAS sequence in an all-or-nothing manner, or, are there specific variations in the nature and severity of the response and hence the adaptive consequences? The question of generality versus specificity was particularly important in the development of the transactional perspective and the hassles studies, because previous stress models had not adequately incorporated this concept (Kanner et al., 1981; Lazarus, 1971; Monat and Lazarus, 1977).

Generality Versus Specificity. Fundamental to all stress-health research are assumptions about the generality or specificity of stressors and responses (Chalmers, 1982). Early research, particularly that undertaken by Selye, maintained a generalist position. Mobilization of the GAS and resultant tissue disturbances, was considered to be a function of any noxious stimuli, and could involve both physiological or psychological stressors (Levi, 1974; Selye, 1978). The generality theme carried over from systemic stress research in to the more psychosocially orientated perspectives (Dohrenwend, 1973), notably the life event stress-health research of Holmes and Rahe (1967). For example, the same adaptive response is presumably evoked whether the stimuli are divorce, holidays, marriage or death in the family.

However, from the early 1960's, the generally accepted notion of a nonspecific, physiological response to stress was seriously challenged. Research indicated that "pituitary-adrenal cortical system is remarkably sensitive and responds easily to emotional stimuli" (Monat and Lazarus, 1977, p 6). Many of the early comparative laboratory studies elicited the adaptive response in animals through the application of discomfort or pain (e. g. heat), which entails emotional overtones such as fear. It was found that when psychological reactions were minimized in this type of study, with humans or animals, the pituitary-adrenal cortical system was not stimulated nonspecifically, and there was no generalized stress response. Further, and particularly relevant to the transactional perspective and the 'hassles' studies, research by Lazarus and others found that variation in appraisal processes resulted in differential, or individual reactions in the stress response (Folkins, 1970; Folkins, Lawson and Opton, 1968; Lazarus; 1971; Lazarus and Launier, 1978; Lazarus, Opton, Nomikos and Rankin, 1965).

The Lazarus group investigated the effect of cognitive appraisal and coping on the stress response by manipulating appraisal and measuring subsequent responses. This was accomplished by using a film with three different soundtracks, and repeatedly recording both the subject's reported stress and autonomic responses during the film. The film content was potentially distressing, as it dealt with the initiation of young aboriginal males into manhood, which involved "crude operations on the penis and scrotum" (p 298). One sound track highlighted the distressing and damaging aspects (psychological and physical), of the initiation. Another approached the rite from a benign, denial-reaction formation viewpoint

suggesting that the boys were eager to participate and found the rite a positive experience. While the remaining track portrayed emotional detachment and intellectualized the rite (Lazarus and Launier, 1978). It was found that the distressing track evoked a higher stress response than the other two tracks. Importantly, the reductive effects were also related to personality factors. Subjects who tended to employ denial as a coping strategy experienced less stress-reduction with the intellectualizing track than with the denial track. The reverse occurred for subjects predisposed to intellectualizing strategies. Thus, an interaction between person and environment factors was indicated. More importantly, differential responses to the same stimuli suggested that interpretation and response to stimuli could be specific rather than universal, or generalized. (Lazarus and Launier, 1978; Lazarus and Folkman, 1984). How the subjects had appraised the event and coped with it affected the stress response.

While these relationships are far from clear, Lazarus (1974b) suggested that they may involve factors such as the characteristics of environmental demands, and the quality of the emotional responses arising from these demands, including moderating factors like individual differences in appraisal and coping resources. While the notion of 'appraisal' was not new, but related to the traditional phenomenological tenets concerning the subjective interpretation of stimuli, it had not been previously operationalized within a laboratory setting as in the Lazarus studies. This is an important point because it allowed for the empirical evaluation of a subjective process within a controlled setting. Cognitive appraisal and coping were the major contributors in the Lazarus research, from which the transactional perspective and the 'hassles' research developed. Though cognitive appraisal and coping are different processes, they are closely related and can be important influences in stress-health outcomes (Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen, 1986).

Cognitive Appraisal. Appraisal is involved in the evaluation of stimuli in terms of its relevance to the perceiver, mobilization of the stress response, shaping the coping process, and integrating individual and situational variables. The process includes primary and secondary appraisal. Primary appraisal entails the evaluation of stimuli with respect to the individual's well-being. Secondary appraisal is no less important, nor does it necessarily follow, primary appraisal. It is concerned with the evaluation of available coping resources and options and can shape both primary

appraisal and coping, through feedback and reappraisal processes. It may be a conscious process, but not necessarily, as we are not always consciously aware of selecting various coping strategies and options (Coyne and Holroyd, 1982; Folkman et al., 1986; 1982; Lazarus, 1966).

Stimuli impinging on the individual are appraised as irrelevant, benign-positive or stressful (harm-loss, threat or challenge). As the name suggests irrelevant stimuli have no implications for well-being and consequently rouse little interest, or response (Lazarus and Folkman, 1984). This explains why the same stimulus will be perceived as 'stressors' by some individuals but not others. For a stimulus to be stressful it has to be of some relevance to the perceiver, for example, being caught in a traffic jam is usually more significant if it means being late for a desirable job interview than simply being delayed with no adverse consequences. Benign-positive, implies positive outcomes, although as suggested by Lazarus and Launier (1978), these stimuli can contain a hint of threat because the perceiver may consider the possibility of losing this positive state, and/or recognize that effort may have to be mobilized to sustain it.

Stressful appraisals (harm-loss, threat or challenge) in some way imply negative outcomes for well-being which often result in mobilization of adaptive resources. As indicated previously, failure to resolve the stressor/s can lead to 'diseases of adaption' (Selye, 1978). Harm-loss appraisals can involve past, present or possible future damage, physical or psychosocial (e. g. loss, or injury to one's body, self-esteem or social status). Threat involves anticipated harm, or loss yet to occur and frequently entails 'anticipatory' coping (Lazarus and Folkman, 1984). For example, a person confronted with permanent job loss because of lasting physical incapacity, usually has to cope with the immediate circumstances but is also faced with the necessity to anticipate possible future coping strategies. This type of example can demonstrate how life events and daily hassles may interact to affect health. The situation entails not only the effects of change caused by the occurrence of major life events (i. e. injury and job loss), but also impacts on the individual's daily living patterns affecting the level of stress experienced within the ongoing situation. The way initial events and the ongoing situation are appraised by the individual is often a crucial factor in stress-health outcomes (Kanner et al., 1981). Challenge is frequently a difficult stimulus to define because there is often a very fuzzy dividing line between threat and challenge. A challenge, like threat, mobilizes

coping resources for example, a new job usually entails new demands which requires coping responses. If the job demands exceed coping resources, a challenge may easily become a threat (Lazarus and Folkman, 1984). Research by Kobasa (1979) and Kobasa and Maddi (1981, 1982), indicate that the way challenges are appraised has definite implications for health outcomes. They found that individuals in high-powered, potentially stressful occupations who displayed a quality they referred to as psychological 'hardiness' (which included a positive attitude to challenge), were less prone to heart attacks than their less 'hardy' colleagues.

Coping. The coping process involves "efforts, both cognitive and behavioral, to manage environmental, and internal demands and the conflicts among them (Coyne and Holroyd, 1982, p 109)" This entails basically two strategies: (i) problem focussed, or direct action strategies involving attempts to directly alter the problem situation, and (ii) palliative focussed, or emotionally directed strategies aimed at alleviation of emotional distress through intrapsychic strategies, such as denial or rationalization (Folkman, Lazarus, Gruen and DeLongis, 1986; Lazarus 1966).

Coping may involve either or both types of strategies, and at times entail conflicting outcomes, for example, 'denial' of symptoms which delays seeking medical advice (Coyne and Holroyd, 1982). Coping from a psychological perspective is not merely automatized adaptive behaviour but involves active intrapsychic, and/or behavioural efforts to manage a demand that taxes the person's resources (Lazarus and Folkman, 1984). In this sense, it is process orientated rather than a specific trait, because it occurs relative to appraised demands, which may change abruptly within an on-going situation (Folkman et al., 1986). Lazarus and colleagues sought to incorporate the important concepts of appraisal and coping into a perspective capable of accounting for the daily interactions between the individual and the environment. Importantly, this did not involve simply adopting an interactional model (Lazarus and Launier, 1978).

While an interactional stress perspective is more flexible than the stimulus and response models there are still problems with this approach. As suggested by Lazarus and Launier (1978), attempts to define the interactive process often result in a S-R situation. This occurs where possible stressors are categorized into person and environment variables and then simply summed to obtain what appears to be their relative contributions to the interactive 'process,' without describing the

'process,' (e. g. inferring the operation of "personality," from variations in "situation-response inventories" pp 290-1). Under these circumstances, the interactional stress model then literally follows the S-R, or even S-O-R model in which there is a "one-way cause and effect model going generally from environment....via person to response" (Lazarus and Launier, 1978, pp 290-1), ignoring the fact the person and environment interact reciprocally; each affecting and affected by the other (Cohen and Lazarus, 1973). A transactional, or relational approach to stress theory and research, could account for the dynamics of the person-environment interaction and overcome some of the difficulties encountered with earlier stress models. Such a perspective was crucial to the Lazarus' group's interest in the effect of daily stresses on health. They needed a model capable of handling the person-environment transactions within the context of the on-going situation and a transactional perspective met these requirements. The way the transactional perspective actually functions will be clarified further, because this is pertinent to why the perspective was a particularly suitable theoretical framework for the previous, and current 'hassles' studies.

The Transactional Perspective. Importantly, the transactional model attempts to avoid problems encountered with S-R and interactional stress models by first seeking to describe the interactional, or relational processes and then, incorporating both the relational and deterministic aspects into the model. A relational process, or variable, arises from an interaction between the individual and the environment. For example, 'threat' is a process that evolves from a person-situation relationship; it is neither entirely within the individual or the environment, but comes into being because of an interaction between the two. It occurs when there is appraised inequity, actual or perceived, between demands and coping resources (Coyne and Holroyd, 1982; Lazarus, 1966; Lazarus and Launier, 1978).

However, it is insufficient to simply acknowledge the operation of interactional or mediational processes. It is essential to clarify the antecedents to the stress response, measurement of the response and the intervening processes between stimuli and response. The first object is to define the rules which govern the relational processes before attempting a deterministic analysis (Coyne and Holroyd, 1982; Lazarus, 1966; Lazarus and Launier, 1978; Lazarus and Folkman, 1984; Monat and Lazarus, 1977).

Relational-processes rules relate to the individual-environment interaction and entail consideration of demands and resources. Demands can be internal, such as values, commitments, cognitive set, physiological factors, or external, as in social, or environmental stimuli. Similarly, resources can also comprise psychobiological and situational factors. In defining relational rules these concepts are relevant, and lead to consideration of the "balance of power" (p 297) between demands and resources. The crucial factors involved in the stress process are appraisal and coping. If there is an appraised inequity between the demands of an event and the resources to cope with it, stress is likely to arise (Lazarus and Launier, 1978).

In addition to relational processes, our transactions with the environment include relatively stable structures, or stimuli, (e. g. where we live and with whom, our various physical and psychological attributes, vulnerabilities and coping styles). These structures are very pertinent factors in stress-health outcomes, but by first defining the rules of the relational processes, we are in a much stronger position to consider how individual and environmental antecedents relate to stress and adaptation. Of these more stable factors, previous research has indicated that variables such as sex, age, marital status, occupation and level of education could be important in stress-health relationships (Argyle, 1987; Lazarus and Launier, 1978) For example, studies have suggested that the incidence of depression, anxiety and other stress-related symptoms is generally higher for women than men (Brown and Harris, 1978; Goldberg, 1972). While men tend to have higher incidence of coronary problems and alcoholism, women often report more psychological and somatic problems (Lovallo, 1978; Davison and Neale, 1978). Bradburn (1969), found that women tend to experience more negative affect than men. Similarly, a British survey by Warr and Payne (1982), found that 18% of women and 13% of men, reported experiencing "unpleasant emotional strain yesterday" (p 167). Women also tend to use less effective methods of coping which can impair functioning and affect both stress and health status (Billings and Moos, 1981; Pearlin and Schooler, 1978).

Strain and illness appear to vary with the life cycle, or age (Argyle, 1987; Pearlin and Lieberman (1977). The teen years are often a high stress period, but there is also a peak during the years 30 to 40. After the 40's, there tends to be a steady decline in reported strain, negative and positive affect and mental disorder. However, contrary to general age trends, depression commonly occurs in the over

40's; especially in women (Argyle, 1987; Sandstrom, 1974). Evidence also suggests, that there is a decline in both positive and negative affect with age. Older people tend to experience events less intensely than younger people (Diener, Sandvik and Larson, 1985). However, an increase in somatic problems usually occurs with aging, such as degenerative joint disease, cardiac problems, difficulties with sight and hearing (Futrell, Brovender, Brower and McKinnon-Mullet, 1980). So, many daily stresses and life events may well relate directly to, or be exacerbated by age factors. A study associated with the hassles research supports this notion. Kanner et al. (1981) found college students reported different hassles from those reported by health professionals and middle aged people. The student were more concerned with social and academic factors, while the middle aged group had more investment, taxes, and property hassles. For the middle aged group (Hassles study), the most frequently endorsed hassles over the nine month study period were as follows:

(1) Concerns about weight 52.4%; (2) Health of a family member 48.1%; (3) Rising price of common goods 43.7%; (4) Home maintenance 42.8%; (5) Too many things to do 38.6%; (6) Misplacing or losing things 38.1%; (7) Yard work or outside home maintenance 38.1%; (8) Property, investment, or taxes 37.6%; (9) Crime 37.1%; (10) Physical appearance 35.9% (Kanner et al., 1981).

Marital status can also be another stable factor in stress-health relationships. Indications are that widows and single men tend to have higher rates of stress and illness than do their 'married' counterparts (Woods, 1984). It appears that the social support that marriage, or an equivalent relationship, can provide often acts as a buffer against stress. Also, 'people with a partner' frequently take better care of themselves healthwise than people living alone (Argyle, 1987, Mendalie and Goldburt, 1976). An American study by Lynch (1977 cited in Argyle, 1987), not only indicated that 'married' individuals enjoyed better health than 'singles,' but also the mortality rate was lower for 'marrieds' relative to 'singles;' particularly between the ages of 25 and 44 years. So daily living patterns and transactions can involve stresses specific to marital status, as well as other hassles. For example, losing a job generally entails different stresses and changes in daily life patterns for a 40 year old married man, supporting a wife and three children, than those hassles experienced by a single, 16 year old girl, living at home and still supported by her parents. Other reasonably stable factors implicated in stress-health relationships include social class, occupation and level of education.

Negative stress-health occupational factors often relate to job satisfaction, which tends to correlate highly with life satisfaction (Argyle, 1987). Further, it has been suggested that there is a higher incidence of work-related stress and illness among working class individuals in blue-collar jobs, than those in higher status occupations. Some of the reasons for this relate to factors such as repetitive, boring machine-paced work, lack of control conflicts with co-workers and supervisors, dissatisfaction with wages, working hours and conditions (Cooper and Marshall, 1976; Walker, 1978). Biomedical research has demonstrated that specific physiological changes are related to occupation status. Jenner, Reynolds and Harrison (1980), found that non-manual labour involving psychological pressures, was capable of raising excretion levels of the catecholamine adrenalin, and manual labour could raise excretion rates of noradrenalin. These catecholamines are involved with arousal of the sympathetic nervous system, including elevation of heart rate and blood pressure, and have been implicated in hypertension and cardiovascular disease (Wood, 1984). Studies by Frankenhaeuser (1975) and Jenkins (1982), found that elevated adrenalin and noradrenalin excretion rates were associated with work overload, particularly where there was lack of control over the job, such as machine-paced production lines.

However, there are also other important factors involved. For instance, blue-collar workers tend to have fewer economic resources and social supports, and less access to community services (e. g. counselling), than those in higher status jobs. Lack of resources can seriously affect how one copes with stress and adaptional outcomes. Further, those in blue-collar occupations often have a tendency to use inappropriate coping styles learned during childhood socialization which may facilitate stress-health effects. Studies have indicated that working class individuals tend to have a fatalistic attitude to events involving learned helplessness, and coping strategies often involve increased smoking and medication (Dohrewend, 1975; Finlay-Jones and Burrill, 1977; Jick and Mitz, 1985; Pearlin and Schooler, 1978). Therefore, while high status jobs do not necessarily ensure more satisfaction, generally they do involve rewards such as greater financial incentives, higher self esteem, autonomy, task variety and identity, which tend to lead to higher levels of satisfaction and better health care. Contrary to popular belief, the high powered business man is not necessarily more prone to adverse stress effects than his blue-collar colleague (Argyle, 1987).

Education is another reasonably stable life factor. While a higher level of education will not necessarily ensure a low-stress life it is often highly related to occupation and the advantages and disadvantages occupation can entail. Argyle (1978) reports that the more highly educated do tend to be happier than the less educated and this effect is reasonably stable over time, although the correlation is not large. It is likely that the greater satisfaction of the more highly educated, accrues from the material gain and resources education can facilitate through occupation and status rather than through education alone. For example, those with a higher education often have a greater income than the less well educated, and Bradburn (1969) found that positive affect was correlated with higher income levels. Consequently, the stress and health problems of those with lower levels of education are likely to be greater, or at least different, to those with a higher education.

From the research discussed in the preceding paragraphs, it would appear that the more stable, or demographic variables, such as sex, age marital status, occupation and education as well as relational processes are involved in stress-health outcomes. Individual differences in stable variables are not accounted for in the work of Holmes and Rahe (1967), although the American hassle studies did investigate for sex and age differences. DeLongis et al. (1981), did not find sex or age differences, although Kanner et al. (1980), found higher correlations between hassle frequency and psychological symptoms of $r = + 0.55$ ($P < .001$) for men and $r = + 0.66$ ($P < .001$ for women). The hassle studies did not test for other demographic variables. Consequently, it was decided by the present author that the Australian study would employ a wider demographic sample, to see whether stress and symptom levels would differ between various demographic groups as previous research had suggested.

To summarize the work of Lazarus and colleagues prior to the hassles research, dissatisfaction with the shortcomings of the life event approach, lead them to the development of the transactional stress perspective and laid the ground work for the recent 'hassles' studies. The significance of daily stresses in stress-health outcomes, defining 'hassles' and operationalizing the definition within a transactional perspective, were all crucial aspects of the 'hassles' research. The studies of both Kanner et al. (1981) and DeLongis et al. (1982), will be discussed in some detail to consider some of their findings, and to allow for comparisons between the American and Australian studies, which is part of the current thesis.

The Hassle Studies. By the late 1970's, research had clearly demonstrated that appraisal and coping were important processes in the activation and management of the stress response, and that these processes occurred within the context of the ongoing situation (Lazarus and Launier, 1978). Subsequently, Lazarus and colleagues suggested that the the minor, daily stresses we all experience may have a greater impact on health than major life events. They suggested this may happen because current transactions are generally appraised as having greater immediate significance than remote, past events. Consequently, the Berkeley Stress and Coping Project headed by Lazarus, focussed on identifying what stimuli were appraised as stressors within the daily person-environment context (Coyne and Lazarus, 1980; DeLongis et al., 1982; Kanner et al., 1981; Lazarus, 1984).

This led to the development of 'The Hassles Scale.' Hassles were defined as those "irritating, frustrating, demands that to some degree characterize everyday transactions with the environment," such as traffic jams, trouble with neighbours, family and work colleagues, the weather (Kanner et al., 1980, p 3). Apart from the notion that hassles may be magnified, or generated by the disruptive influence of major life events on daily living patterns, Kanner et al. (1980), suggested that hassles may also originate in the individual's "characteristic style, routine environment, or their interaction (p 4)." For example, the frustration one may feel when caught in the unexpected traffic jam arises from a largely, uncontrollable situationally-determined event. However, the daily stresses that can occur because the individual remains in the stress-producing environment, or persistently employs an ineffective or maladaptive coping strategy, relate to a more stable situation, for example, a person who continues to live within a difficult marital situation because divorce is morally unacceptable, and escapes the problems by excessive drinking. These notions are consistent with the premises of the transactional perspective which suggests that the transactions between person and environment can involve both relational processes and reasonably stable structures, or variables. So, hassles can arise from relational processes, such as threat, frustration, and relatively stable structures such as occupation, sex, home environment and so.

After defining 'hassles,' it is important to consider how hassles can affect health. Hinkle (1974), has proposed that the impact life events have may relate to the disruptions they cause in daily living patterns. However, as we are all exposed to daily stresses, or hassles, why is it that we do not all succumb to stress-related

complaints? Lazarus and colleagues suggested that the specific impact hassles have on health may depend on hassle frequency, chronicity, repeated hassles of "psychologically compelling importance, and the heightening of hassles during a given period" i. e. crisis (Kanner et al., 1981, p 4). The effects of 'hassles' may involve one, or more of the stress-health pathways previously discussed: disturbance of tissue function; maladaptive coping strategies; psycho-social mechanisms (Monat and Lazarus, 1977).

Processes crucial to hassle-health relationships are cognitive appraisal and coping. Unlike the standard life event scales such as the SRRS, The Hassles Scale was constructed to allow for the individual interpretation of occurrences as stressful. Further, allowance was made for the respondent to include personal hassles that were not itemized on the scale. So, importantly, it allowed for specificity rather than adopting a generalized stance (Kanner et al., 1982; Lazarus, 1976).

A particularly important consideration in the development of the hassles scale was the method of scoring. Was hassle impact a cumulative effect; the more hassles the higher the likelihood of adverse effects on health? Alternatively, did impact relate more to the significance of the hassle or how intensely the hassles were experienced? Because the transactional approach is concerned within the ongoing person-environmental context, Kanner et al. (1981), suggested that the various characteristics of hassles may be pertinent to questions of hassle quantity versus meaning. How relevant to impact is hassle "timing, repetition, frequency, duration and whether hassles occur with or without warning (p 5)?" This concern reflected a need to be aware that cognitive and emotional components (i. e. appraisal), are relative to the type and level of response. For example, at one point in time, under particular circumstances, a certain event may be appraised and responded to quite differently relative to another time and situation. What is a hassle at one point in life may not be so at another point. Kanner et al. (1981) concluded that the details of individual hassles are probably not as important as the "overall level of hassles and the subjective distress they indicate (p 5)."

When employing The Hassle Scale, Kanner et al. (1981) and DeLongis et al. (1982) employed the following scoring method. Respondents indicated which hassles they had experienced in the last month. Then, using a three point scale, respondents rated the severity, or intensity of each of their hassles. Initially, the hassle ratings

yielded three summary scores: the *frequency*, or how many hassles; the *cumulated severity*, obtained by summing the severity ratings; and *intensity*, calculated by dividing the cumulated severity by the frequency. However, Kanner et al. (1981) found that cumulated severity and intensity were highly correlated ($r = + 0.95$), so used only frequency and intensity ratings in subsequent analysis; as did DeLongis et al., (1982). The current study also confined the hassles analysis to frequency and intensity ratings.

The Hassles Scale constructed by Kanner et al. (1981) listed 117 'hassles' employing the categories of "work, health, family, friends, the environment, practical considerations and chance occurrences (p 8)." This was the scale used to see if hassles were more strongly related to psychological symptoms than to life events. The sample comprised 52 females and 48 males aged from 45 to 64, white, middle class and primarily protestant, with no severe disabilities. The respondents were obtained through phone contact from a population of adults that had been previously contacted in 1965 (N = 7,000), and again in 1974 (N = 4,864), by the Alameda County Human Population Laboratory (ACHPL). The ACHPL had conducted a survey of "physical, mental and social health" (p 8). The hassle study respondents came from the 1974 sample.

Apart from The Hassles Scale, the Kanner et al. (1981) study employed four other scales. One of these measures was an Uplifts Scale, which itemized positive events, such as a satisfying nights' sleep etc., and was scored in a similar manner to The Hassles Scale. This measure was developed because Kanner et al. (1981) were interested in the notion that 'uplifts' or positive, daily experience can act as stress buffers. The concept of positive events as a 'stress buffer' is contrary to the premises of the life event perspective that any change, positive or negative, incurred adaptional costs. As 'uplifts' were found to have only a modest, positive correlation with symptoms for women, but not men, this aspect was not included in the present study, although it may well be worth further investigation in the future.

Another measure used by Kanner et al. (1981) was a life events scale constructed from interviews with a sample of 100 middle-aged respondents. Items that did not appear on the Holmes and Rahe SRRS were subsequently weighted and added to the scale. Items which were likely to overlap with other scales, such as those used to

measure symptoms, were excluded. This 'exclusion principle' also applied to The Hassle Scale items. For example, hassles concerned with "physical illness and difficulties with sight or hearing " (p 9), were excluded to avoid possible overlap with symptom measures (Kanner et al., 1981). As the study was primarily interested in the effect of hassles and life events on psychological symptoms, two psychological measures were employed: (i) The Bradburn Morale Scale (Bradburn and Caplowitz, 1965,), because it has been used extensively to measure 'psychological well-being' and contains reliable, independent subscales which measure positive and negative affect, and (ii) The Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Ulenhuth and Covi, 1974), because it is capable of detecting "psychological symptoms...likely to show short-term changes...and....low levels of symptoms in normal populations" (Kanner et al., 1981, p 10).

While the Hassles, Uplifts and Bradburn Morale Scales were completed monthly over the 10 month time span, the life events scale was completed in month 10 and the Hopkins Symptom checklist in months 2 and 10. Initially, respondents also completed a "trait" version of The Hassles Scale where they checked hassles that were characteristic, or "typical" for them (p 8). By using longitudinal research Kanner et al. (1981), allowed for the consideration of both the occurrence of hassles within the ongoing situation, and how intensely they were appraised over a 10 month time span.

Using these measures, Kanner et al. (1981) expected to find that minor, daily stresses or 'little hassles' would be a better predictor of concurrent and future psychological symptoms than major life events. The results they obtained supported these assumptions. A stepwise regression analysis was performed using psychological symptoms, as measured by the Hopkins Symptom Checklist and designated as the dependent, or criterion variable. The independent, or predictor variables were hassles from months 1, 2, 5 and 9, and the life event measures occurring prior and during the study. In all equations predicting psychological symptoms, hassles was the first predictor variable entered for both males and females, while life event scores rarely added significantly to the equation. The multiple r 's for the total sample ranged from + 0.38 to + 0.55 ($P < .001$), while for males the range was + 0.31 to + 0.52, and for females the range was = + 0.48 to + 0.68 ($P < 0.001$ to 0.05). Contrary to expectations, the analysis did not reveal any significant association between hassle intensity scores and the psychological symptom measures.

Regarding a possible relationship between life events and hassles Kanner et al. (1981), found that while there was no significant association between hassle intensity and life events there was a correlation of $r = + 0.21$ ($P < 0.05$) between the number of hassles and *prestudy* life events. Similar results were obtained on the hassles trait measure for the total sample, and for males and females. Sex differences were evident between hassle frequency and *study* life events; females recorded an $r = + 0.36$ ($P < 0.01$), but the $r = + 0.02$ obtained for males was not significant.

To summarize, Kanner et al. (1981), concluded that hassles were more strongly associated with psychological symptoms than were life events. Further, even though hassles and life events did overlap, hassles were capable of contributing to adaptional outcomes independently of life events. While the emphasis was on hassles, the researchers noted that this did not imply that "other important relationships among hassles, life events, and psychological symptoms do not exist" (p 21). However, the study clearly demonstrated a relationship between daily stressors and adaptional outcomes.

The DeLongis et al. (1982) research was a year-long study which investigated the relationship of daily hassles and major life events to somatic health. The one hundred respondents were obtained from the same 1974 Human Population Laboratory survey sample used by the Kanner et al., (1981) study. The Hassles and Uplifts scales were administered for nine consecutive months. However, the Life Events Questionnaire (DeLongis et al., 1982; Kanner et al., 1981), was administered twice and provided a score for life events occurring over the 10 month study period and a score for life events occurring two and half years prior to the study. Somatic health was measured by the Health Status Questionnaire (Belloc and Breslow, 1972; Belloc, Breslow and Hochstim, 1971).

The Health Status Questionnaire was administered at the beginning and the end of the study and provided three scores. One score gave an index of overall health status, which allowed for seven levels of classification according to the respondent's most serious health problem; low scores indicating poor health. The second score was the total number of reported somatic symptoms (e. g. headaches, back trouble). Score three, was the respondent's reported energy level on a range of 0 to 12 and related to items such as sleep problems and lack of energy. Another category listing chronic conditions was considered but abandoned because the numbers were too low to allow meaningful analysis (DeLongis et al., 1982).

The results of the DeLongis study tended to confirm the conclusions of the Kanner et al. (1981), research although there were differences. For example, both the number and intensity of hassles was associated with somatic symptoms, poor overall health status and low levels of energy. There were no significant sex or age differences.

DeLongis et al. (1962), employed a hierarchical regression of hassles and life events on all three symptom measures. The results supported the assumption that hassles would be better predictors of somatic health outcomes than major life events. For overall health status and somatic symptoms, hassle frequency and intensity accounted for 13% of the explained variance and in both instances there was no significant contribution from life events. When a combination of pre-study and during-study life events were entered first into the regression equations for health status and energy levels, they accounted for 7% of the variance in both cases. DeLongis et al. (1982) concluded that while life events did minimally affect somatic health, there was a "considerable time lag" in this effect and it had impacted primarily on energy levels e. g tiredness, lacking in energy etc (p 132). However, hassles still contributed significantly to these two equations accounting for 9% and 6% of the explained variance, respectively. When entered first on the equation for somatic symptoms, life events did not reach significance.

The relationships obtained in the DeLongis study between hassles and somatic health were not as strong as those obtained by the Kanner research group between hassles and psychological health. DeLongis et al. (1982), did not comment specifically on this aspect, but did note that somatic health tends to involve long-term outcomes "rather than an evanescent state...it is likely that a stable pattern of stress is required to have an impact on it" - somatic health (p 132). While psychological states can be chronic, or develop over time, they can also entail more transient states. The occurrence of symptoms over shorter time spans, such as psychological symptoms, are likely to be detected more easily in surveys than perhaps conditions that take some time to develop. The hassles scores in both the Kanner et al. (1981) and DeLongis et al. (1982) studies, did in fact display reasonable stability over the study time spans. So it is possible that a longitudinal study over a number of years may show that a stable pattern of hassles is quite strongly associated with somatic health outcomes. However, the DeLongis et al. (1982) indicated that hassles and somatic health are related. The average means and standard deviations for the two 'hassle'

studies were very similar. Kanner et al. (1981), reported a hassle frequency mean of 20.5 (SD 17.7) and a hassle intensity mean of 1.47 (SD 0.39). DeLongis et al. (1982), obtained a hassle frequency mean of 20.6 (SD 15.1) and an intensity mean of 1.47 (SD .28).

Both the hassles studies concluded that the frequency and intensity of hassles were more strongly associated with psychological and somatic health, than major life events. However, despite the promising outcomes of the hassles studies, like the SRRS, the adequacy of The Hassle Scale as a stress measure has been challenged on conceptual and empirical grounds. The nature of the wording of the instructions, and the number of available response categories have been queried, but the most important issue relates to the possibility of circularity and confounding because of item similarity between the hassle and health measures. It has been suggested that the independent variable/s (hassles), should be more clearly differentiated from the dependent variable/s (symptoms), to avoid possible overlap between stressors and symptoms (Dohrenwend, Dohrenwend, Dobson and Shroat, 1984; Dohrenwend and ShROUT, 1985). However, as indicated by Lazarus and colleagues, while greater differentiation between variables is an admirable goal, it is not necessarily practical or useful.

In reply to the criticism of confounding, Lazarus, DeLongis, Folkman and Gruen (1985) proposed that because stress is not easily defined as a specific variable or response, efforts to objectify it, apart from the context in which it occurs, are not likely to be very productive. They suggested that if stress is a cognitively-mediated phenomenon, arising from a reciprocal interaction between the individual and the environment, possible confounding may relate more to the recursiveness of this relationship rather operational error. Attempts to rectify overlap by trying to objectify specific stressors without reference to context and relational factors, tends to revert back to a simplistic S-R notion of stress, which fail to account for the dynamics of the person-environment relationship.

Further, the question of which variable is antecedent and which is consequent often depends entirely on the perceiver. If the individual appraises one stimuli (e. g. stressor), as preceding another (e. g. symptom), then that is the 'reality' of the situation for that perceiver. However, in both the Kanner et al. (1981) and DeLongis et al. (1982) studies, hassles that obviously overlapped with the symptom measures were deleted from The Hassles Scale, such as visual problems and side effects of medication.

research results employing a transactional stress model to examine daily stresses have been encouraging, and indications are that 'hassles' have a greater effect on health outcomes than do major life events. But, again it is important to emphasize that while hassles have been found to be more predictive of potential health than major life events, this does not imply that life events have no effect. The implications are that the possible stress-health relationships are not simply a matter of tallying up discrete events, but must take in to account the ongoing situation between the individual and the environment. This is the strong point of the transactional perspective. The perspective does consider the complex reciprocal nature of person-environment transactions and The Hassles Scale attempts to evaluate the frequency and intensity of perceived stressors occurring in this context.

Given the promising results obtained in the American 'hassle' studies, it was of interest to the present author to see if the same, or similar results, could be obtained in an Australian population, with the addition of certain factors not included in the American research. These additional factors related to the more static, or stable variables which are as much a part of the transactional perspective as relational processes. As previously discussed, indications are that demographic factors such as sex, age, marital status, occupation and education may be good predictor variables in predicting stress-health outcomes, so these variables were included in the present study. The issue of static variables was not easy to evaluate in the previous hassles studies as the results were obtained from a restricted sample; white, middle class, middle aged and primarily Protestant, with above average education and income. Therefore, the purpose of the present study was to evaluate if the hassles-health relationship for somatic and psychological symptoms held within an Australian context, and across a broader demographic sample.

Apart from The Hassles Scale by Kanner et al. (1981), four other measures were used in the current study (see Appendix i): (i) The Life Events Inventory (Tennant and Andrews, 1976), was employed to measure life events occurring 12 months prior to the study; (ii) The General Health Questionnaire (Goldberg, 1972) was used to measure psychological health; (iii) The Ruffin Symptom Checklist (Ruffin, 1985), was constructed to record somatic symptoms; and (iv) The Marlowe-Crowne Social Desirability Scale (Marlowe and Crowne, 1960), was employed as a check for possible response bias arising from social desirability motives.

A social desirability measure was included because poor health can have negative connotations, particularly psychological health (Goffman, 1963). Consequently, individuals with strong social desirability motives may tend to endorse items according to what they perceive to be socially appropriate, rather than how they actually feel (Peterson, 1977). As the health measures were a crucial aspect of the current study, the author considered it pertinent to include a check for possible response bias. The Marlowe-Crowne scale was selected for this purpose in preference to other alternatives, such as the Edwards Social Desirability Scale (1957), because the items have minimal psychopathological content. This was an important consideration, as it was necessary to minimize any risk of confounding from overlap between the measures used in the present research. It was not expected that the research sample would show any indication of response bias. To check for bias, the means and standard deviations on the Marlowe-Crowne Social Desirability Scale for the current sample, and the sample subgroups, were compared with the means previously reported in Australian and American research (Peterson, 1977; Crowne and Marlowe, 1960 and 1964). It was not intended in the present study to use the Marlowe-Crowne to investigate the role of social desirability in relation to stress and health, although this line of research has shown promise (Peterson, 1977).

The objectives of the current study were formalized into a number of hypotheses and aims which are as follows:

(1) Given the cultural similarities between America and Australia it was hypothesized that the means obtained on The Hassles Scale for the Australian sample would be similar to the means reported in the two American studies. However, because of the broader demographic sample in the Australian study, it was expected that hassle patterns would differ as a function of the demographics.

In conjunction with hypothesis (1), there were also two aims:

(i) An attempt was made to ascertain the stress and health status of the Australian sample. The aim was to compare, or contrast, where possible the stress and health outcomes from the Australian study with the stress-health status of the American 'hassle' research samples.

(ii) The correlations between The Hassles Scale and the Life Events Inventory, and the correlations between the General Health Questionnaire and the Ruffin Symptom Checklist, were examined. The aim was to check for possible scale overlap, and to compare the correlations, where possible, with the American samples.

Given the results obtained by Kanner et al. (1981) indicating that hassles were more strongly associated with psychological symptoms than life events, it was hypothesized that:

(2) In multiple regression analysis, The Hassles Scale ratings would be more predictive of psychological symptoms measured on the General Health Questionnaire than scores on the Life Events Inventory.

Given the results obtained by DeLongis et al. (1981) indicating that hassles were more strongly associated with somatic symptoms than life events it was hypothesized that:

(3) In multiple regression analysis, The Hassles Scale ratings would be more predictive of somatic symptoms measured on the Ruffin Symptom Checklist than scores on the Life Events Inventory.

As previous studies had indicated that demographic variables such as sex, age, marital status, occupation and education may be implicated in stress and health outcomes (Argyle, 1987; Jenner, Reynolds and Harrison, 1980; Woods, 1984), it was hypothesized that:

(4) There would be sex differences with females rating higher than males on hassles and life events and both symptoms measures. Also, The Hassle Scale Ratings would be more predictive of psychological (GHQ) and somatic symptoms (RSC), than the scores on the Life Events Inventory.

(5) There would be age differences on the stress and health measures. It was expected that the highest scores on the stress and psychological (GHQ) measures would be recorded by the 15 to 19 years and 35 to 49 years age brackets. While the 50 + age group would record the lowest stress, psychological symptom and somatic symptom intensity ratings, but the highest number of somatic (RSC) symptoms.

(6) There would be marital differences, with the widowed/separated/divorced group rating higher on both stress and health measures than other groups; particularly those married or sharing a similar relationship.

(7) There would be occupational differences, with the lower status occupational bracket scoring higher on the stress and symptom measures than other groups. The lowest scores on all measures would be recorded by the highest occupational status group.

(8) There would be educational differences, with the non-tertiary educational group scoring higher on both stress and health measures than the tertiary educated group.

METHOD

Subjects.

Respondents were 203 (84 males and 119 females) residents of Geelong, Victoria, Australia. Geographically, Geelong is situated 70 kilometres from Melbourne, the capital city of Victoria and has a population of 150,000. Occupationally, it is representative of the range of occupations within Australia and has a diversity of ethnic cultures and socio-economic groups. Dwellings range from private ownership to employer-subsidised housing and State Housing Commission homes (Storer, Faulker and McCaughey, 1982).

The ages of respondents ranged from 15 to 83 years with 31.53% falling within the 25 to 34 year age bracket. Sixty-eight per cent of the sample were married or living in a *de facto* relationship (living as husband and wife but unmarried), 22% were single and the remaining 10% were widowed, or divorced.

With respect to education, 71% of respondents had completed some secondary schooling, while the remaining 32% continued on to tertiary level. Of those respondents who had undertaken secondary level education only, 19.5% finished below level 10 (form 11), 16.3% reached level 10, while 21.7% and 4.4% continued on to levels 11 (form V) and 12 (form V1), respectively.

The sample covered a broad range of occupational categories. The occupations included professionals and non-professional white collar (26.5%), skilled white collar and blue collar occupations (17%) manual and non-manual semi-skilled (5%), semi-skilled to unskilled, primarily manual labour (12%), home duties (23%), student (7%) retired and/or receiving a pension (8%), while 1.5% of respondents simply listed themselves as "unemployed" (See appendix iv for all the preceding demographic details).

The questionnaires.

The study employed five measures: The Hassles Scale (Kanner et al., 1981), The Life Events Inventory (Tennant and Andrew, 1976), The General Health Questionnaire (Goldberg, 1972), the Ruffin Symptom Checklist (Ruffin, 1985), and the Marlowe-Crowne Social Desirability Scale (Marlowe and Crowne, 1960) - see appendix i.

The Hassles Scale (Kanner, Coyne, Schaefer, and Lazarus, 1981), comprises a list of 117 'hassles,' or annoying, frustrating events generally encountered in our daily transactions with the environment. The hassle areas covered include health, family, friends, the environment, practical considerations and chance occurrences.

As in the American research, respondents in the current study were asked to endorse only those hassles experienced within the preceding month. Respondents were also asked to rate each hassle on a severity scale of 1 to 3, with 1 being "somewhat severe;" 2 "moderately severe;" 3 "extremely severe." Provision was available for respondents to list additional hassles which were not included on the scale. Additional hassles were later coded into the categories of physical, psychological, family, social, occupational, educational, legal and economic hassles - see appendix vii. Two measures were generated from the scale and included additional hassles added by respondents: (i) Frequency, or number of items checked, which generated a rating score ranging from 0 to 125, and (ii) The average intensity rating, which is an index of how intensely, or severely the average hassle was experienced regardless of how many hassles are endorsed and ranges from 0 to 3. The score was obtained by dividing the cumulative severity by the frequency; cumulative severity is simply the sum of the severity ratings across all the endorsed hassles. Kanner et al. (1981) employed the scale once a month over a nine month time span and reported a "high test-retest reliability with an average correlation of + 0.79 between adjacent months over the nine month period for hassle frequency , and 0.48 for intensity (p 12)"

Lif Events Inventory (Tennant and Andrews, 1976). This inventory was selected in preference to other life event measures because it was developed under Australian conditions, for use as an interview or questionnaire instrument. Further,

it incorporates the concepts of magnitude of change, as in the SRRS (Holmes and Rahe, 1967), and is also a measure of the level of distress associated with the various life events (Paykel, Prusoff and Ulenhuth, 1971). Consequently, events are assigned weightings according to 'their capacity to produce a change in life style and emotional distress.'

The inventory listed 67 desirable and undesirable items, including the categories health, bereavement, family and social life, friends and relatives, education, occupation, financial and legal. These areas included items such as, "your husband/wife died, you failed an important exam, you were promoted, you moved house" and so on. The authors had assigned a pre-determined life change weighting on each event ranging from 2 to 62, and a distress rating ranging from 1 to 83. Ratings on the items checked were summed to obtain life event change and life event distress scores.

In constructing the scale, care was taken by the authors to avoid possible overlap between scale items and illness. To obtain a valid cumulative score, item weightings were assigned with reference to other scale items, using an index item (i. e. marriage). This method of obtaining weightings was similar to that used to scale the SRRS, and involved an interval scaling method where individual item scores were obtained relative to their significance with the index item. This initial scaling procedure was carried out using a population of 94 adults. The index item 'a serious physical illness,' was obtained for both life change and emotional distress. Subsequently, 151 adults employing a ratio scaling method were used to obtain weightings for the remaining items. Because all items on the two subscales are proportionally weighted, this permits the calculation of both a cumulative life change and distress score (Tennant and Andrews, 1976). The Life Events Inventory appears to be a considerable improvement on life event scales such as the SRRS, because it does take into account the subjective impact that life events can have. Through the distress and change subscales on the Life Events Inventory, some indications are obtained of effects on health arising from both the change life events incur and the distress they can elicit. The SRRS measures the magnitude of life event change only.

For the current study, respondents were asked to check those events which they had experienced during the last 12 months. In addition to the life change and distress scores, the current author also included a frequency score (number of life events). A frequency score was included because there has been some suggestions that a simple frequency count of life events is just as useful as employing normatively weighted life events (Marziali and Piconis, 1986). Also, in the current study, respondents were given the option of listing any change in their lives which had affected how they answered the survey questionnaire, not listed on the Life Events Inventory. Rather than attempt to assign weightings to additional events, the author included a simple frequency count of the total number of life events listed by respondents. Additional items were coded into eight categories which were constructed relative to areas which could be possible sources of major life events. These areas included: death; family; social; occupation; education; financial; legal - see appendix vii.

A standardized scale was preferred over a detailed interview method of life event data collection (Brown and Harris, 1978), for a number of reasons. Primarily, though more extensive data can be collected using the interview method, often there is little difference in the correlations obtained on health measures using either the scale or interview approach. Further, the life event scale is more suited to the practicalities of a community survey (Rahe, 1989 personal communication.).

The General Health Questionnaire (Goldberg, 1972). The GHQ was chosen to measure psychological health in the current study, because it was developed to measure non-psychotic impairment in large populations. Psychotic generally applies to those suffering major psychological disorders with varying degrees of loss of contact with reality (Davison and Neale, 1978). The current study was primarily concerned with a non-clinical population, so it primarily required a measure of psychological difficulties in the range outside severe psychopathology. Importantly, the GHQ had demonstrated clinical validity across different populations including, Australia where it was validated by Tennant (1977).

The scale encompassed psychophysiological symptoms, and items relating to minor affective disorders and role satisfaction, such as "having disturbed restless nights," "been feeling unhappy and depressed," "been finding it easy to get on with people."

Respondents were asked to endorse all items relative to how their health had been over the past few weeks and indicate each item's level of intensity, or distress. Intensity ranged across four levels from "not at all" (not problem; an intensity rate of 0) to "Much more than usual" (severe problem; intensity rate of 3).

The 30 question version of the GHQ scale yields a GHQ score ranging from 0 to 90, obtained by summing the item intensity ratings. A cut off score of 23 to 24 was considered to differentiate 'normals' from pathological 'cases.' Many individuals experience some psychological distress without this distress becoming a psychological disorder. For example, we all have the odd sleepless night worrying about particular problems. At some time we all feel sad, depressed or anxious, we do not always feel confident or capable of coping, and may feel temporarily overwhelmed by our current difficulties. Psychological distress within the 'normal' range is generally transient and does not severely, or chronically interfere with our daily lives. Goldberg (1972), found that this 'normal' range fell below a particular score on the GHQ (e. g. 23 to 24). Scores above the 'normal' range were associated with increased likelihood of psychopathology and individuals falling within this 'abnormal' range were designated as 'cases.'

The 30 question version of the GHQ was used in the current study because it is less prone to 'false positives' than the longer 60 item version. 'False positives' are respondents who incorrectly score as 'cases.' The 60 item GHQ has both physical and psychological problems listed. Goldberg found high scores on the 60 item GHQ sometimes related to a high rate of response on the physical illness items. So, 'false positives' are high scorers suffering from primarily physical, rather than psychological problems. Conversely, 'false negatives' are unidentified 'cases.' 'False negatives' may score below the cut off point because they have a longstanding illness. Consequently, because their particular symptoms may be chronic when asked to rate them, they may primarily use the "same as usual" response category. Under these circumstances "same as usual" may mean anything from a 1 to 3 level of distress. However, 'false negatives' may also be defensive individuals who do not easily admit to symptoms (Goldberg, 1972; Tennant, 1977). Physical items were largely deleted from the 30 item GHQ, reducing the likely number of 'false positives' (Goldberg, 1972; Goldberg, Rickels, Downing and Hesbacher, 1976; Tennant, 1977). This was an important consideration for the

current study. As the aim was to investigate both psychological and somatic symptoms relative to stress, it was desirable to delete, or minimize scale overlap wherever possible.

In addition to the GHQ score, frequency and intensity ratings comparable to those of The Hassles Scale and The Ruffin Symptom Checklist were also calculated. The GHQ has been validated using either a bimodal or Likert type score. The bimodal method of scoring is literally a frequency count. The current author decided to use the Likert scoring method as it is literally comparable to the cumulated severity rating used to obtain the hassle and somatic symptom intensity ratings (e. g. cumulative severity or the sum of the severity ratings across all GHQ items), divided by the frequency of GHQ items. It was also of interest to see if there were any advantages in using simple frequency counts, intensity or GHQ scores. In relation to 'hassles,' Kanner et al. (1981) found a high correlation of $r = + 0.95$ between cumulated hassle severity and intensity ratings. It was concluded that one rating was measuring much the same as the other and in subsequent 'hassle' research intensity ratings only were employed.

The Ruffin Symptom Checklist (Ruffin, 1985). The RSC was constructed by the author to record somatic, or physical symptoms in respondents. Without denying that there is an interactive relationship between mind, body and health outcomes, problems can be primarily psychological or somatic. As the aim of the present study was to investigate the role of stress relative to both psychological and somatic health status, measures were needed which would differentiate between psychological and somatic symptoms.

Various proven somatic measures were considered, but the author could not be sure that these did not overlap with the psychological symptom scale (GHQ). Rather than risk confounding from scale overlap, a specific checklist was developed from previous studies (Cleland, Stimson and Goldsworthy, 1977; Darby, Glasser and Wilkinson, 1981; Hannay, 1979; Klugman, 1975; Krupinski and Mackenzie, 1979). It included 55 items covering the areas of musculo-skeletal, respiratory, urogenital, gastrointestinal, cardiac-circulatory, skin and miscellaneous such as eye and ear infections, minor accidents involving cuts and bruises. Thirteen items relating to more major syndromes, such as cancer, were also included. Importantly, the RSC was constructed to avoid, where possible, overlap with items on the other

measures. A correlational analysis was performed between the scales to check for any indications of possible scale item overlap; this analysis will be discussed in greater detail shortly. Scoring was the same as for The Hassles Scale. RSC item intensity ratings ranged from 0 to 3, allowing for the calculation of frequency and average intensity. Provision was made for respondents to record symptoms not on the Checklist and these were subsequently coded into categories of minor physical, minor psychological, major physical and major psychological symptoms.

The Marlowe-Crowne Social Desirability Scale (Marlowe and Crowne 1960). The MSD was developed to measure the desire to gain the social approval of others by "responding in a culturally appropriate and acceptable manner" (p 353). It was used to obtain some indication of response tendencies within the population.

It was considered that respondents with strong social desirability motives may tend to endorse items according to their perceptions of what is socially appropriate, rather than how they actually feel. Poor health, particularly psychological involvement, and inability to handle stress can have negative connotations, so people may not report such problems (Goffman, 1963). Consequently, a sample strongly influenced by social motives may yield scores that are not really reflective of the stress-health status of the sample. Again, crucial to the current study, the MSD scale is not a clinical measure. The scale is not concerned with psychopathological responses so does not overlap with the GHQ scale. The MSD has a score range of 0 to 33 with average of 15.1 and a standard deviation of 5.6 obtained in previous American studies (Peterson, 1977).

Procedure.

How the Sample was Selected. To obtain respondents for this study a stratified random sampling technique was employed (Kerlinger, 1977). First, to maximise the probability of obtaining a reasonable cross-section of the community, the 21 census collector districts for the Geelong area, as defined by the Australian Bureau of Statistics, were divided into four socio-economic groups; upper class, upper middle and lower middle class, and working class. These classifications were based on the percentage of owner versus rented dwellings, occupation and area of residence. This information was obtained from a previous study undertaken by

Storer (1981), from the Institute of Family Studies, Melbourne. The Storer research investigated the social characteristics of the 21 census districts in relation to the availability of social services in the Geelong Region, and subsequently provided a good indication of Geelong's demographic characteristics.

The Storer (1981) research, indicated that districts classified by the present author as high socio-economic areas (group 1), comprised mainly expensive, high mortgage properties occupied mostly by white collar professionals (e. g. doctors). Upper middle class (group 2), also had a high percentage of high mortgage properties and white collar professionals, but also comprised many middle income families, tradesmen and white collar non-professionals (e. g. clerical occupations). Lower middle class (group 3), comprised a high proportion of middle to lower wage earners including white collar non-professional, tradesmen, and blue collar workers e. g. production line workers. Working class districts (group 4), were predominantly blue collar areas, with a high percentage of modest homes and State Housing Commission areas. These districts also tended to be high rental areas with a considerable percentage of migrants.

Second, after classification of the districts according to the four socio-economic classes, each district was allotted a number from a list of random numbers (Kerlinger, 1977); the first 21 unrepeated numbers from column one were used. Then, returning to the random numbers list and using an alternative column number, one suburb was selected from each group. This was done by taking the first district number to come up in each of the four divisions (see appendix ii for district characteristics).

Third, streets to be employed in the door-to-door survey were also randomly selected. This was accomplished by employing a blow-up map of the Geelong Region, obtained from the Geelong Regional Commission and using a list of random numbers (Kerlinger, 1977). Grids generally contained at least four to five main streets, or roads, with a small number of side streets. As with the selection of districts, the first grid number to come up in the list nominated the area of streets to be surveyed.

How the Survey was Conducted. Using the four nominated grids, the author conducted the door-to-door survey working outwards from the most central street in

each grid. The option was to obtain 55 respondents for each of the four districts, married or single, over the age of 15.

Households were approached between 6 pm and 10 pm Monday to Thursday, to maximize the possibility of obtaining a broader demographic sample. These times were selected because it was considered these were the most likely time-periods when people would be at home. Sampling earlier on week days may have resulted in a predominance of specific occupations e. g. housewives, shift workers. It was considered difficulties may also be encountered obtaining respondents on weekends, and Friday evenings with the availability of 'late night shopping,' so these times were avoided.

While surveying, the author displayed clearly visible identification; a name tag with a recent photograph and the name of the institution where she was currently employed. The basic presentation format followed by the author was to introduce herself to the potential respondent giving name, place of occupation, and the name of the institute with which her research was being conducted:

"Hello! My name is Coral Ruffin and I work at Deakin University. I am conducting a survey on stress and health for a Master's degree at the University of New England. I am asking people in this area if they would like to participate by filling out questionnaires."

Basic information about the study was provided and it was stressed that the respondent's opinion and participation in the study was important. If co-operation was obtained the author briefly went through the questionnaire explaining that it was necessary to answer all scales and inventories where applicable, and to ensure that personal details were included; name, address, phone number, sex, age, occupation and level of education. It was explained that these details were necessary if the study was to look at possible demographic differences in the responses. Confidentiality was assured! Further, participants were told that a brief resume' of the research findings would be forwarded to them on completion of the study.

The function of all stress and health measures was briefly explained. If requested, more details were provided. These details usually concerned the nature of the study, what results may eventuate and possible practical applications. However, as the MSD had been included to test for possible response bias arising from social

desirability motives, its objective was not revealed. Consequently, respondents were told that the MSD was an 'attitude questionnaire' asking for their opinions on the various items. As instructed on the scale they were to tick the column (true or false) for each item as it related to them personally.

Once all queries had been answered, the author left the questionnaire with the respondent to be collected one hour later. Of the 220 questionnaires that were distributed 218 were returned apparently completed - two respondents had decided they did not wish to participate after all. Subsequently, 15 questionnaires were found to be incomplete and were not used in analysis, leaving a total of 203 respondents in the study.

Generally, the response to the survey was extremely good. People expressed interest and stated that they thought the study was worthwhile and it was not difficult to obtain respondents. The overall acceptance rate was 79% and the rate of refusal varied with the suburbs. Highton/Belmont, and Geelong/East Geelong were by far the most cooperative area with few refusals. Wittington followed with approximately 75% acceptances and 25% refusals among those who were approached. While Nth. Geelong/Drumchondra proved the most difficult to survey with approximately 50% refusals amongst those approached. The author noticed that this grid had a high proportion of elderly people, some appeared a little wary of strangers and/or 'signing forms,' or simply did not want to be bothered with surveys. However, in all grids it was noted that the major reason given for refusal was 'lack of time,' followed by "not really interested," or "cannot be bothered." Only three individuals refused to participate on the grounds that the survey was "too personal."

Also, the majority of individuals contacted in all four grids were English-speaking and there were few language difficulties. Six respondents did comment on the wording of the 'intensity categories' on The Hassles Scale, and the Ruffin Symptom Checklist e. g. 'somewhat severe' and so on. They thought the meaning would be clearer if "mild, moderate and severe" were employed to rate the 'intensity categories.' In relation to the Marlowe-Crowne Social Desirability Scale respondents frequently commented that it would be nice to have a neutral response category between "yes" and "no." However, a neutral category would have defeated the purpose of the MSD scale.

The Analysis. The Statistical Package for the Social Sciences was employed to undertake descriptive and correlational analyses and included the Frequencies, Breakdown analysis (including ANOVA), Pearson r and Stepwise Multiple Regression programs. Before undertaking the more complicated analysis, such as regression, initial frequency and breakdown analyses were performed. This was to check for coding errors and to see which demographic categories, if any, needed to be evaluated for recoding. The analysis showed that some of the demographic categories contained too few subjects to undertake meaningful analysis with programs such as ANOVA. Consequently, small, or redundant categories were incorporated with other similar categories. Also, the incorporation of categories was undertaken to limit the range of categories and confine data analysis to manageable proportions for the current thesis. It was considered by the author that it was preferable to begin with ample categories to encompass a reasonable number of demographic characteristics, then recode where necessary, rather than begin with too few categories to sufficiently handle the survey responses (see appendix iv for the number of respondents in the various categories before recoding).

For example, age was originally coded according to the categories used by the Australian Bureau of Statistics. However, because of small numbers in the 60 + year group the six categories were recoded to five, ranging from 15 years to 50 + years - see Figure 1. Marital status was coded from eight to three categories (single, married, separated). Education was recoded from twelve to two categories (tertiary and non-tertiary). Recoding of age, marital status and education posed few problems as various categories were easily merged. For example, De Facto (unmarried couples living as spouses), were merged with 'marrieds.' However, with respect to occupation, categories were not always clear cut. Consequently, the categories were reduced from twelve to four with reference to Anne Daniel's (1983) *Power, Privilege and Prestige. Occupations in Australia*. Initially, the general characteristics of categories 1 to 6 were taken directly from Daniel's classification, although the Daniel's "Prestige Scale" proper provides sublevels by decimal points in each category (appendix v).

For example, while judge and ambassador are both category 1 occupations, judge is rated as more prestigious at 1.2 than ambassador at 1.7. With this subscaling, the scale can account for a very large number of specific occupations. However, in the

current study as occupation was only one, albeit an important one, of a number of variables, and there were limitations regarding the size of the study, it was decided to restrict the levels to general classifications of prestige and to recode all categories into four prestige levels.

When recoding occupation, it was found that no respondents occupied level 1, level 2 remained a high occupational prestige level, categories 3 and 4 were categorized as middle prestige level and 5 (less skilled white/blue collar), 6 (semi to unskilled), 8 (student), 9 (unemployed), 91 (pension - other), 92 (pension - medical/disability), 93 (pension - old age), were classified as lower occupational prestige level (appendix vi). 'Home duties' was retained as a specific category, because according to Daniels (1983), this category is not easily relegated to either a high, medium or low status. Daniels found in the analysis of ratings, using a broad demographic sample, that no particular prestige rating could be obtained for housewives, and that ratings were highly dependent on factors other than occupation. On a range of 1 - 7 medium ratings ranged across the full continuum, and varied according to factors such as the age, occupation, and the education of the respondents, and if they were rural or city dwellers (Daniels, 1983). Consequently, it was decided in the present study to evaluate 'home duties' as a specific category, rather than attempting to amalgamate it with the other three status levels with no clear guidelines for classification.

After recoding, it was found that 31.52% of the population was between the ages of 25 and 34 years, 68.47% were married, 32% had some tertiary education while approximately 70% of respondents had lower prestige to middle prestige occupations. Figures 1 to 4 illustrate the recoded demographics.

Following the initial descriptive analysis, Pearson r Product Moment Correlations were performed on the data. The first correlational analysis was undertaken to check for possible overlap between items on the different scales. A correlation matrix was obtained for all variables. This was considered necessary to avoid the possibility of obtaining inflated correlations because of item similarity; a couple of items on the health measures did appear to have similar content as 'hassle' scale items.

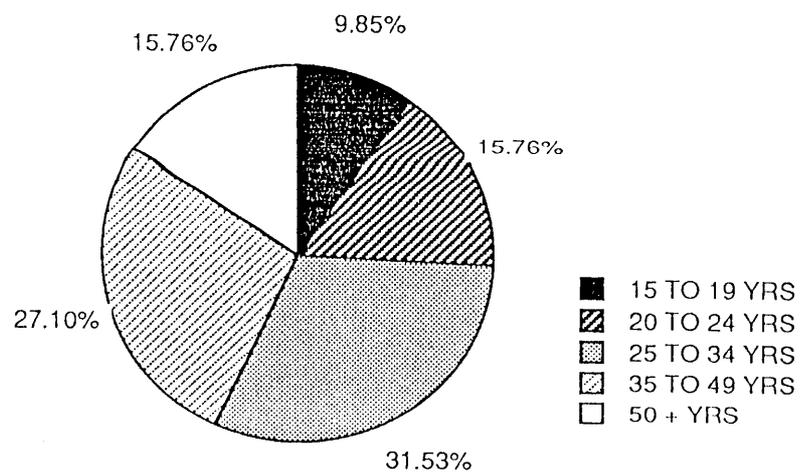


FIGURE 1. THE POPULATION BY AGE

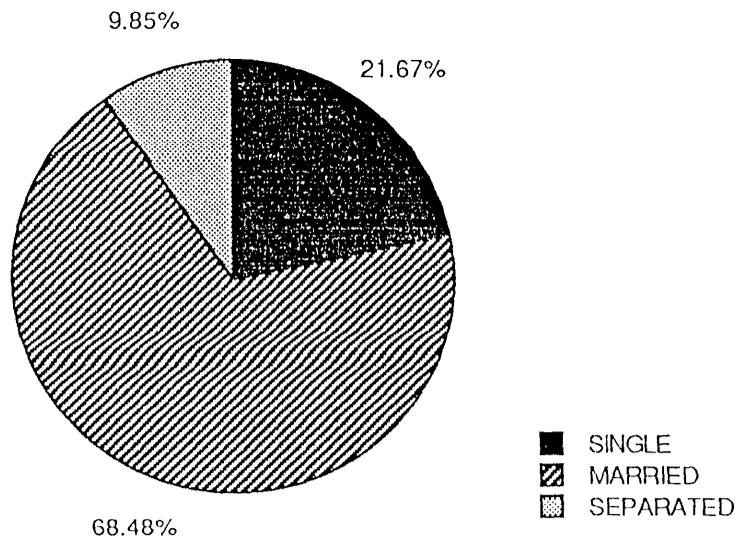


FIGURE 2. THE POPULATION BY MARITAL STATUS

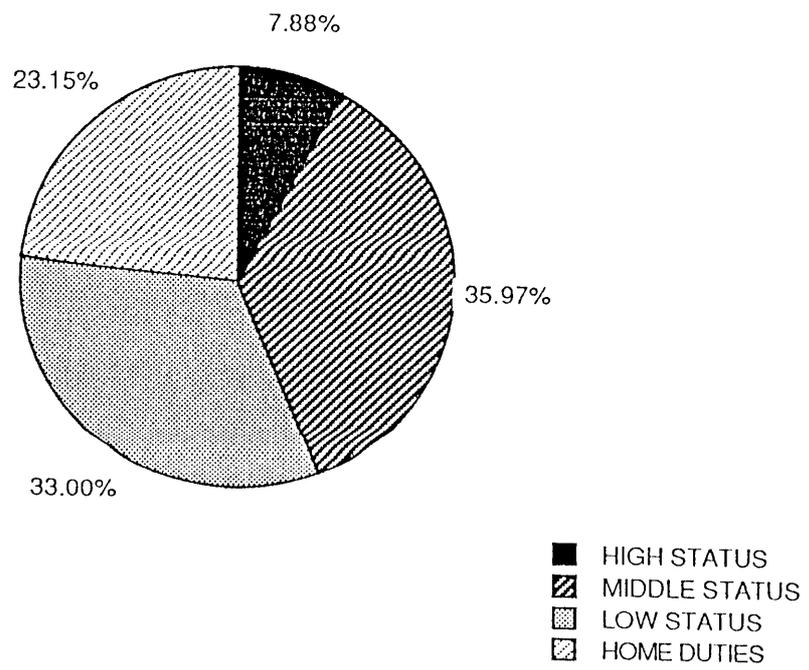


FIGURE 3. THE POPULATION BY OCCUPATION

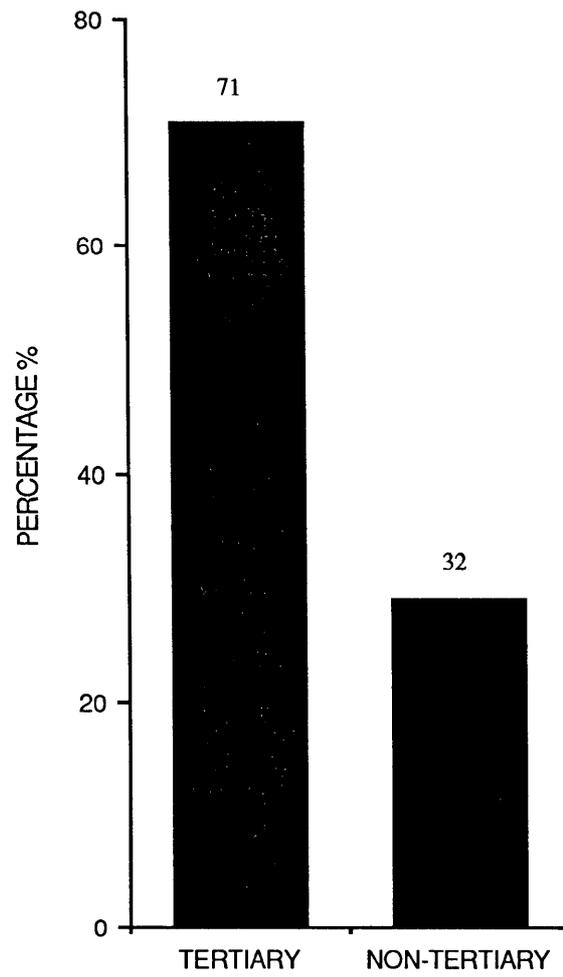


FIGURE 4. THE PERCENTAGE OF RESPONDENTS BY EDUCATION.

The results indicated that with the exception of hassle number 98, the items on The Hassle Scale and the RSC were measuring different things. It seems that although items appeared to be similar in content, respondents were differentiating between them in terms of stressor or symptom. Hassle 98, "Menstrual (period) problem, was almost identical in wording to RSC item 35, Menstrual (period) problems (i. e. pain, irregularity etc.) and similar in content to RSC item 38, Pre-period tension (PMT). Subsequently, Hassle 98 was removed from analysis.

Next, a stepwise multiple regression analysis was performed to find which stressors and demographic variables, if any, were most predictive of psychological and somatic symptoms. Stepwise regression was selected because this method is particularly useful if the object is to develop an equation predictive of the criterion variable (e. g. symptoms), from a number of possible predictors, such as stress measures and demographics (Norusis, 1983; Tabachnick and Fidell, 1983).

After the stepwise regression, a breakdown analysis was performed. This was undertaken to obtain information on the various subgroups (i. e. age). The breakdown included measures of central tendency and variance and an analysis of variance (ANOVA). While the ANOVA was not essential, as the multiple regression provided basically the same information, the author required a test to evaluate for significant differences between multiple means in the subgroups. The SPSSx ANOVA program, unlike SPSSx regression, provides the Sheffé¹ Multiple Comparison Procedure for pairwise comparison of group means. The Scheffé¹ was selected by the author because it provides a more conservative estimate of differences between group means than some other procedures. It has an alpha level of 0.05, so reasonably large differences between group means are required to attain significance (Norusis, 1983). Importantly, if a significant result is obtained, the Scheffé¹ indicates which mean/s differ from others in the group. The Sheffé¹ was applied to subgroups where there were more than two categories (e g. age). The Scheffé¹ test was not applied to groups where there were only two categories (e. g. sex, education). For 'two category' groups the significance of the F statistic from the initial ANOVA, was accepted at $P < 0.05$.

Finally, the breakdown analysis included a regression analysis for sex. Given the limitations in the present study regarding size and time, a regression analysis was not performed for all the demographic variables. Sex was considered for further analysis because it had been implicated as a minor predictive variable in three of the regression equations for the total population.