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ADOLESCENT COPING STYLES AND RESPONSE TO STRESS

A study of the relationship between the preferred coping styles of female senior High School Students and their levels of anxiety and self-confidence when facing a major academic stressor.

by

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A Thesis submitted in partial fulfilment of the requirements for the award of

Master of Psychology

at the Faculty of Health and Human Sciences, Edith Cowan University, Western Australia

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ABSTRACT

A growing body of research indicates the importance of coping strategies when an individual responds to environmental demands. Community concern about the maladaptive responses of some adolescents, limited research with this age group, and the development of a new Australian measure of adolescent coping provided the impetus for this study.

The study was conducted with 141 female students in their final year of High School. They completed the Adolescent Coping Scale (ACS) in March, and measures of anxiety and self-confidence in November, just before major external examinations. Behavioural rating scales were completed by parents and teachers.

The adolescent group reported frequent use of coping strategies which research indicates are likely to be effective, and relatively little use of ineffective strategies. When facing a severe academic stressor, they were self-confident but reported very high levels of anxiety, which was cognitive rather than somatic in focus.

The few students whose ACS scores showed relatively high use of ineffective and low use of effective coping strategies were identified as "At-risk". When compared with a contrasting sub-group, the "At-risk" students were significantly more anxious and less self-confident.

There was no evidence that parents or teachers were aware of the adolescents' high levels of anxiety.

The findings provide support for the predictive validity of the ACS, and have implications for helping adolescents cope with stress and developmental demands. Further research directions are suggested.

DECLARATION

"I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text."

ACKNOWLEDGEMENTS

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Dr Erica Frydenberg, co-author of the Adolescent Coping Scale, first engaged my interest in this topic at National conferences of the Australian Psychological Society and impressed me with her comprehensive approach. It has been exciting to be able to use a new Australian scale in its neonatal stage.

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Thanks are also due to the 1990 Year 12 students of Methodist Ladies' College, who cheerfully completed questionnaires, some at a very stressful time, and to their parents and teachers who also participated. Their co-operation made the study possible.

I am deeply grateful to my family and close friends who gave me total support and showed their confidence in me during the long gestation period. In particular, I thank my husband, Eric Lawson, for his unfailing encouragement and practical help, and my mother, Dr Erica Underwood, who is not here to see the final product.

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CHAPTER 1: BACKGROUND TO THE STUDY

Concern about the responses of adolescents to the demands of their environment is widespread in the Australian community, especially among parents and teachers of adolescents. The rates of substance use, depression, suicide attempts, eating disorders, delinquency and other maladaptive behaviours are rising. Yet most adolescents continue to meet the demands and to develop successfully towards adulthood. The question of what makes the difference between adolescents' adaptive or maladaptive responses has many challenging implications.

Possible areas for study or intervention can be grouped as primary, secondary or tertiary. Primary questions include looking at what distinguishes well-adapted adolescents from other adolescents, or what factors are linked with maladaptive behaviour. Ways of encouraging adaptive behaviour or minimising problems within populations of adolescents may be sought.

Questions in the secondary area relate to identification of adolescents at risk of developing maladaptive behaviours and seeking ways to divert that development and promote adaptive behaviour.

In the tertiary area, the questions are about treatment or management of adolescents identified, by themselves or others, as having significant maladaptive behaviours.

Questions within the secondary area provide the context for this research study. The study focuses on adolescents in their final year at an independent girls' school in Perth, Western Australia. These adolescents

are under considerable stress as they face both school-based and external assessments, results of which, in the short term, determine their opportunities for post-school training or employment. Ability to meet environmental demands is critical at this point in their lives.

A poignant emphasis was given to the project during the year of data collection, when a student from the previous year-group at the school committed suicide. This statement, written during Melanie's last year at school, was found in her computer after her death, and included in a published selection of her writings:

> Kids need to be taught that stress exists and is very real, and, most importantly that they can cope with it. (Giles, 1992, p. 241).

The research of Frydenberg and Lewis at the University of Melbourne offered a starting point for planning a study in the area of adolescent coping. They have developed a new measure, The Adolescent Coping Scale (ACS), which was in press when this study was carried out and is now published (Frydenberg and Lewis, 1993). They have commenced a data bank on the coping strategies of Australian adolescents.

Should further research confirm the validity of the measure, it could form the basis of identification of students at risk and the profiles generated from it could be used for programmes in the areas of individual counselling, group counselling, or life-skills education. An indication of the instrument's predictive validity would be of value to those considering its use. The study is a first attempt to address this issue.

CHAPTER 2: LITERATURE REVIEW

INTRODUCTION

This review will examine theoretical models and research in the areas of stress and coping, with particular reference to the adolescent age-group. Measures of stress and coping will be reviewed, and research directions and practical applications discussed. As the focus of the study is coping, this will be the main emphasis of the literature review. Stress will be considered in only enough depth to provide a context and background against which the study of coping can be understood.

STRESS

Concepts and Measures of Stress

The word "stress" has been in widespread use both in everyday speech and in a variety of professional areas since the early fourteenth century. It has always had a variety of meanings and been confusingly used to apply to a set of related concepts. The primary definition of stress in Webster's Dictionary is illustrative: "strain, pressure; especially

(a) force exerted upon a body which tends to strain or deform its shape;

(b) the intensity of such force;

(c) the resistance or cohesiveness of a body resisting such force". (McKechnie, 1962 p. 1801).

When this definition is applied to a human "body" - a whole individual - one can see the importance of the concept to psychology.

Psychological definitions of stress can be classified as stimulus, response or interactional definitions.

Stress as Stimulus

One research direction concentrates on stress as events in the environment impinging on individuals. Referring to stimulus events as "stressors" helps to reduce conceptual confusion. The concept of stress as external stimuli leads logically to measuring stress by listing, weighting, and adding common stressors such as death of a family member, loss of a job, marriage, birth of a child. The Social Readjustment Scale of Holmes and Rahe (1967) is the prototype of this kind of measure and is still widely used in research.

Holmes and Rahe made no distinction in scoring between positive and negative stressors, and derived their weightings by averaging the responses of a normative group. Later measures, such as the Life Experiences Survey of Sarason, Johnson and Siegal (1978) dealt with some of the limitations of the approach. They asked respondents to mark the events experienced as positive or negative and to rate their impact.

When stress is defined as stimulus, the main research questions seek explanations for physical and/or psychological ill-health. It is hypothesised that the experience of stressors leads to negative effects.

Early large-scale studies did show some significant relationships (Rutter, 1981), but more recent research has emphasised the extremely variable effect on individuals of apparently identical stressors (McCrae, 1984). A research review by Paykel in 1978 is summarised by Rutter (1981):

> the findings indicate effects of some importance, but equally it remains true that many major threatening life events are not followed by psychiatric disorder and conversely, that many disorders are not preceded by life events of any severity. Marked individual differences in response to stressors have been striking in all studies (p. 325).

Despite refinements in the measuring of stressors, this line of research has another important limitation There is little consideration of possible positive effects of stressors. Haan (1982) notes that taking this view to its extreme implies that "it is better not to have anything happen to one" (p. 255). Lazarus and Launier (1978) quote a memorable aphorism of Gordon Allport's: "the same fire that melts the butter hardens the egg" (p. 294).

Stress as a Response

Definition of stress as a response is exemplified by the "general adaption stress syndrome" described by Selye (1976). The concept involves a combination of physiological reactions such as heart rate and a variety of endocrine responses. An advantage of this approach is that existing physiological measurement techniques giving quantifiable results can be used. A disadvantage is that the people studied must be in a laboratory setting at the time, or soon after, they experience the stressor.

Research in this area tends to consist of discrete studies of one stressor and one or two physiological measures. Examples of stressors are examinations, hospital admission, loud noises. The stressors are apparently selected by the researchers on *a priori* grounds and are generally not evaluated in terms of how stressful the researcher, the average person, or

the person involved considers they might be. Nor are the responses evaluated in terms of their meaning to the individual. Selye (1976) did suggest that "good" and "bad" stress could be distinguished by using the terms "eustress" or "distress", but he did not follow through to indicate how this distinction could be operationalised.

A number of significant relationships between stressors and physiological responses have been found but none appear consistently across studies and individual differences in results are substantial. Questions of the meaning to the person of the stressor and of the physiological response remain unanswered.

After reviewing a number of studies involving both physical and psychological stressors, Rutter (1981) concludes "It remains quite possible that the physiological response to stressors may ultimately be linked with the development of psychopathology, but such a link has yet to be demonstrated" (p. 329).

Stress as Transaction

As research results were gathered from the two approaches just discussed, the need for a more complex definition of stress became apparent. Researchers began to wonder why individual differences were so marked, and introduced self-reports about cognitions and emotions (Lazarus, Averill and Opton, 1974). Thus began the development of definitions which emphasised the interaction between the individual and the environment.

Richard Lazarus and his many colleagues have been the main proponents of a transactional definition of stress which has inspired a large body of theoretical writing and much research. Folkman and Lazarus (1984)

claim that both stimulus and response definitions of stress are too circular to be useful:

> a stimulus is a stressor when it produces a stressful behavioural or psychological response and a response is stressful when it is produced by a demand, threat or load (p 15).

Their definition of stress is:

> Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being (Folkman and Lazarus, 1984, p. 19).

Two important new concepts are introduced in this definition: appraisal and resources. Appraisal is described by Lazarus as a cognitive process, where cognitive is used in a broad sense to include values and emotions. The concept is central to the view of stress as a transaction, and has been further refined into primary and secondary appraisal.

Primary appraisal is defined as "the judgement that an encounter is irrelevant, benign-positive or stressful" (Folkman and Lazarus, 1984, p. 53).

A stressful encounter is appraised as:

(i) harm-loss, where damage is already done;

(ii) threat, where harm-loss is anticipated;

(iii) challenge, where there is potential gain or growth.

Secondary appraisal is "the judgement concerning what might be done" (Folkman and Lazarus, 1984, p. 53). This involves the evaluation of available resources both in the environment and within the person.

There is still an element of circularity in a transactional definition of stress (Rutter, 1981) which seems impossible to avoid. The concept has also become so complex that measurement becomes very difficult. However, the expanded interactional definition has several advantages.

The wide individual differences found in response to stressors are partly explained by the concept of appraisal. In fact, the modifications made to life-events measures, such as subjective ratings for impact and direction, can be interpreted as asking respondents for information about appraisal. Another advantage of the transactional approach is that it allows for the effect of appraising a situation as a challenge, leading to the marshalling of resources and the achievement of a positive outcome. The definition provides a structure for developing measures of the various elements of the interaction, and for integrating the results of studies focussing on different elements.

With appraisal as a central concept, self-report is an obvious method of measurement. While many events can be intuitively, or by consensus, classified as probable stressors, we can only really know whether an event is stressful and how stressful it is, if the individual reports on appraisal.

Physiological measures of responses, demographic measures of stressors and of environmental resources, psychological measures related to internal resources or to responses, and behavioural measures may all be part of a rich fabric of research inspired by an interactional definition of stress.

Stress and the Unconscious

Theoretical discussion of defence mechanisms, as in the psycho-analytical formulations of Freud, provides a different way of looking at

stress. Here the stressors are mainly intra-psychic conflicts and the defence mechanisms are largely unconscious ways in which the individual tries to keep a psychological equilibrium (McCrae, 1984).

The unconscious nature of both the stressors and the responses mean that they can only be measured by clinical techniques. Research in this area is limited and has largely used clinical diagnoses of patient populations or personality test scores of normal populations. The theory about defense mechanisms has had a pervasive influence on thinking about stress and about coping.

Questions arise about how healthy functioning and adaptation can be conceptualised. In an interesting taxonomy, Haan (1977) suggests some answers. She takes each defence and links it with a related coping function in a healthy direction, and a related fragmenting process in an unhealthy direction. An example of such a trio is Empathy - Projection - Delusion (p. 39). In this manner, Haan has shown how positive responses to stressors, whether internal or external, can be conceptualised within a psycho-analytic framework, and gives further impetus to the study of coping responses to stressors. However, she fails to account for the possibility that a defense may be an adaptive response to some stressors.

Stress in Adolescence

Adolescent Stressors and Concerns

Adolescence is defined as the developmental period between puberty and adulthood, with both these physiological benchmarks confounded by factors of chronological age and cultural expectations. Collins (1991) in his discussion of research in adolescence, uses the age range of 10-19 years. The

"storm and stress" theories of adolescent development promulgated by Stanley Hall and Anna Freud (Collins, 1991) have been modified by studies on non-clinical populations (Hauser and Bowlds, 1990; Rutter, 1981). However, it is a period when adjustments must be made to meet major changes, challenges and demands. Petersen and Spiga (1982) claim that it is particularly useful to study stress in adolescents because there is a clear pattern of stressors, patterns of response to stress are sufficiently developed, and the patterns are predictive of later responses.

The "normative stresses", or stressors, of adolescence (Hauser and Bowlds, 1990, p. 392) can be classified as biological, psycho-social, cognitive and environmental. Biological changes intrinsic to adolescence centre around the development of full sexual maturity. During this period, the person experiences marked changes in endocrine activity, body size, body shape and secondary sexual characteristics. These changes may be gradual or quite sudden and individual schedules vary widely.

Psycho-social changes experienced by adolescents involve the growth in importance of the peer group and the development of intimate sexual relationships. At the same time, relationships between adolescents and their parents undergo significant changes usually involving conflict which may be severe.

Cognitive development is also significant during adolescence, although it now seems that Piaget's "formal operations" stage of abstract thought is not always attained by adulthood (Peterson and Spiga, 1982). The increase both in knowledge and in reasoning power affect the adolescent's ability to comprehend situations and arguments, and to solve problems and make decisions. Keating (1981) makes the point that cognitive development

can be stressful as it increases the adolescent's appreciation of personal, environmental and societal problems, sometimes leading to despair or alienation.

The environment of the adolescent beyond the family provides a wide range of expectations, challenges and even threats. In developed countries, adolescents spend most of this stage in some form of education or training, and are faced with demands related to achievement and vocational planning. Adolescents can also become exposed to potentially dangerous experiences with drugs, alcohol and cars. The increasing societal pressures and the flooding effect of the media on American adolescents are eloquently described by Elkind (1981); Australia is usually not far behind.

Some adolescents also experience non-normative stressors such as family breakdown, severe illness, handicap or abuse.

Studies of adolescent stressors, often referred to as "concerns", vary in methods used but consistently show the areas identified above. For example, Seiffge-Krenke identified eight "problem areas" of German adolescents: studies, teachers, parents, peers, opposite sex, self, future and leisure time (Seiffge-Krenke and Shulman, 1990). In her Australian study, Frydenberg (1989) identified nine concerns in three main areas: Achievement (employment, exams, marriage), Altruism (fear of nuclear war, third world issues, sexual equality) and Relationships (family, peers and friends, parents/independence).

In his review of adolescent research, Collins (1991) describes the study of adolescence as "the Cinderella, the neglected person of developmental psychology" (p. 1). The paucity of studies of adolescent stress is a prime

example of this neglect. Also, many of the studies which are available suffer a number of limitations. In a comprehensive research review, Compas (1987a) found inadequate measures, outcome measures restricted to the negative, confounding of life event and dysfunction, and failure to study mediating factors.

Adolescent Distress and Maladaptive Behaviours

Between 10 and 20% of adolescents show evidence of psychological disturbance considered serious (Hauser and Bowlds, 1990). This figure is not significantly different from the adult population, but indicates an area of responsibility for those concerned with adolescents and their future. Behaviours which are considered maladaptive and which are particularly identified with adolescence include substance use, suicide, eating disorders, depression and delinquency.

White (1989) has reviewed major American survey data indicating prevalence figures for maladaptive behaviours. Some illustrative figures will be given here.

Alcohol is "the number one psychoactive drug used by teenagers" (White, 1989, p. 264) with 4-5% of High School seniors admitting to daily use and 37% to heavy drinking. Marijuana, the next most popular substance, is used daily by about 4%, and the use of other drugs show much lower rates of habitual use. The percentages of adolescents who have tried the drugs is, of course, much higher. Smoking tobacco is an important health-risk behaviour, but not considered seriously maladaptive.

In USA, "adolescent suicide has increased 300% in the last 30 years. Suicide is now the third leading cause of death in adolescence" (White, 1989,

p. 144). It is widely believed that suicide figures are a significant underestimate due to under-reporting and mis-classifications of accidents and drug overdoses. As only about 2% of suicide attempts "succeed", these figures indicate serious levels of adolescent distress.

The eating disorders, anorexia nervosa and bulimia nervosa, are found overwhelmingly in females. While both disorders are known to have increased significantly in the last 20 years, prevalence figures are difficult to establish, especially for bulimia, which can be a hidden condition. Reported American rates for anorexia nervosa are 1-4%, and for bulimia nervosa range from 1-14%. Less severe, but potentially serious maladaptive eating behaviours are reported by up to two-thirds of adolescent females (White, 1989).

Feelings of mild to moderate depression are commonly experienced by adolescents, "forty to fifty percent of adolescents report experiencing moderate-to-severe symptoms of depression" (White, 1989, p. 113). Females make up over two-thirds of this group.

Delinquent maladaptive behaviours including stealing, law-breaking and running away are a very broad group without a single accepted definition. Self-report studies indicate that about 90% of American adolescents commit at least one act which could be considered delinquent although not usually discovered. However only about 2% of these adolescents adopt a delinquent life-style, a figure which does not seem to be increasing and consists of three times as many males as females (White, 1989).

Large scale surveys like those reported above have not been carried out in Australia. The most extensive is the Adolescent Health Survey recently conducted in Victoria for which some preliminary findings are available (Centre for Adolescent Health, March 1993). Although the results are not directly comparable, trends are similar, but prevalence rates are generally lower than the American rates. Episodes of "extreme bingeing" on alcohol are reported by 15-16% of Australian Year 11 students, while smoking marijuana more than monthly is reported by about 10%. Over one-third of Australian female adolescents engage in "marked dietary restraint". Only about 10% of Australian Year 11 students report moderate-to-severe symptoms of depression, all levels of depression are more common in females and there are significant links between depressive symptoms and smoking, marijuana use, alcohol consumption and maladaptive eating behaviour.

Just as research into the negative effects of stressors has turned towards the influence of factors which moderate or negate these effects, so attention has moved from studying distress and maladaptive behaviour in adolescents, towards factors associated with adaptive responses. Despite the normative and non-normative stressors experienced during adolescence, 80-90% survive without major disturbance. Research data about what makes the difference would be the basis of providing help for all adolescents who could benefit from improved functioning.

Research suggests a number of possible moderating factors, including temperament, family support, social support, self-esteem and coping skills. However, Hauser and Bowlds (1990) conclude from their research review

that "our knowledge of stress resistance in adolescence is in its earliest stages" (p. 408).

Measures of Adolescent Stress

Almost all measures of adolescent stress are based on the Holmes and Rahe (1967) model and consist of a list of potentially stressful events from which the adolescent checks those experienced. Items are generated by adolescents, by researchers, or both. Most measures ask for some subjective evaluation of the impact of the stressor, although the High School Social Readjustment Scale of Tolor, Murphy, Wilson and Clayton (Tolor and Fehon, 1987) uses normative weightings only.

Glyshaw, Cohen and Towbes (1989) used a measure called the Adolescent Life Experiences Survey where 46 items were checked and rated positive, negative or neutral, resulting in three scores with no indication of the strength of impact. The items were generated by researchers.

In the Life Events and Coping Inventory of Dise-Lewis (1988) there are 125 items generated by young adolescents in response to open-ended queries about "events that produce stress" (p. 486). Almost all the items have a negative implication. The response format is a 9-point Likert scale for the impact of those events experienced. Three scores are obtained: the number experienced, a weighted score using the respondent's own impact ratings, and a norm-weighted score using the mean of responses of a normative group.

Two measures report reliability data indicating some stability of responses. The Adolescent Family Inventory of Life Events and Changes developed by McCubbin, Patterson, Bauman and Harris (McCubbin, Needle

and Wilson, 1985) is unusual in its emphasis on the family and the organisation into six subscales; transitions, sexuality, losses, responsibilities and strains, substance use and legal conflict. Scores are for number of events and normative weights are used. The Adolescent Perceived Events Scale of Compas, Davis, Forsythe and Wagner (Compas, 1987a) was developed from a thorough analysis of responses to open-ended questions about daily hassles and major life events by a large sample of adolescents. Respondents check events experienced and rate as positive or negative and for impact.

The measures briefly reviewed here were selected as the most developed of those reported in the literature. The wide variation in sampling of stressors, scoring for direction and/or strength of impact, use of normative and/or subjective scores, and seriousness of psychometric analysis indicates there is as yet no consensus of approach towards the development of a reliable and valid measure.

COPING

Concepts and Measures of Coping

The conceptualisation of stress as an interaction or transaction between person and environment, combined with growing interest in individual differences in response to stressors, led to the emergence of coping as "The key to an understanding of stress responses" (Rutter, 1981, p. 336). Further stimulus was given to the study of coping by growing interest in adaptive responses and resilience to stressors, as well as maladaptive responses or deficits in adaptation (Frydenberg, 1989; Hauser and Bowlds, 1990). Thus the concept of coping is a relative late-comer to psychological writing and research. One of the earliest major publications is the edited

proceedings of the 1969 Conference on Coping and Adaptation (Coelho, Hamburg and Adams, 1974). This includes an early report of the work of Richard Lazarus and his colleagues (Lazarus, Averill and Opton, 1974) which continues to exert a powerful influence in the area of coping, as will be shown in the following sections.

Definitions of Coping

Any definition of coping must first establish the limits of the concept. Coping can be used so broadly as to be little different from "adaptation", or even "response" (Compas, 1987b). It can, alternatively, be narrowed according to the environmental situation or the response. An example of situation narrowing is the early work of Lazarus which concentrated on threat (Lazarus, Averill and Opton, 1974). An example of response narrowing is work concentrating on intra-psychic responses, especially defense mechanisms (Lazarus, Averill and Opton, 1974). Whether coping can, or should, be evaluated as to efficacy is a related issue which will be discussed later.

An early definition by the Lazarus group clearly indicates the elements they consider important:

> Coping consists of efforts, both action-oriented and intra-psychic, to manage (ie. master, tolerate, reduce, minimise) environmental and internal demands, and conflicts among them, which tax or exceed a person's resources (Lazarus and Launier, 1978, p. 311).

The references to "efforts", to the examples of "managing", and to "taxing demands" set boundaries around the concept so that it is

differentiated from the broad concept of adaptation, from automatic or habitual responses and from the connotation of success or mastery. Yet the definition is broad enough to cover behavioural, cognitive, and affective responses.

The current version of the definition states: "We define coping as constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Folkman and Lazarus, 1984, p. 141). The original elements remain, but the inclusion of "constantly changing", "specific" demands, and the concept of appraisal emphasise the process-orientation of the definition.

Most coping research quotes or paraphrases this definition (Carver *et al*, 1989; Compas, 1987b; Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Rutter, 1981; Wills and Shiffman, 1985). Where there are differences, they tend to narrow the definition rather than alter it in any fundamental way; for example Pearlin and Schooler (1978) omit reference to internal sources of stress. The Folkman and Lazarus definition quoted above stands as the most comprehensive and has been impressive in its generation of research.

Classifications of Coping

Analysis and classification of coping responses have been made in two main ways; from conceptual and from empirical bases. The two methods are often combined in research.

Conceptual classifications

Lazarus and Launier (1978) made an early classification of coping on two main dimensions: coping functions and coping modes. The two coping functions were labelled *Altering the Troubled Transaction* (instrumental) and *Regulating the Emotion* (palliation). Four coping modes were identified: *Information-seeking, Direct Action, Inhibition of Action,* and *Intrapsychic.* Any mode could be used in the service of any function. Other factors considered important by Lazarus and Launier were temporal orientation (past, present and future), appraisal (harm, threat or challenge, and maintenance) and focus (self or environment).

Most aspects of this multi-dimensional classification continue to be found in more recent classifications. The two functions, now labelled *Problem-focused* and *Emotion-focused* (Lazarus and Folkman, 1984), continue to appear regularly as can be seen in the following discussion. The "modes" are usually expanded into a larger number of "strategies", and often linked with specific functions. While versions of the *Information-seeking, Direct Action* and *Intrapsychic* modes can be found in later classifications, the mode *Inhibition of action* has tended to be replaced by cognitive strategies which indicate what is being done, such as ignore, worry or focus on the positive. The Lazarus group have not continued to include the other factors described by Lazarus and Launier (1978), nor have these been systematically included by other theorists, although appraisal and focus make occasional appearances.

Moos and Billings (1982) included appraisal as a third function category, *Appraisal-focussed,* and allocated three strategies to each function.

Of the four modes identified by Lazarus and Launier (1978), *Information-seeking* and *Direct Action* are linked by Moos and Billings with *Problem-focused Coping,* along with *Develop Alternative Rewards* a behavioural strategy.

The strategies allocated by Moos and Billings to *Emotion-focused Coping* are *Affective Regulation* and *Resigned Acceptance* which are intrapsychic, and *Emotional Discharge,* an emotion-focused behavioural strategy.

The *Appraisal-focused* strategies of Moos and Billings are *Logical Analysis,* which could be classified as an early stage of focussing on the problem; *Cognitive Redefinition* which is an intra-psychic strategy either emotion-focused or problem-focused; and *Cognitive Avoidance* which is an emotion-focused intra-psychic strategy. The category *Appraisal-focused Coping* does not, therefore, really add another dimension.

Glyshaw, Cohen and Towbes (1989) claim that "current coping research emphasises the distinction between two global coping strategies: behavioural (or problem-focused) coping and cognitive (or emotion-focused) coping" (pp. 607-8). This classificat[illegible] clearly implies that a cognitive strategy cannot be problem-focused nor a behavioural strategy emotion-focused which is not supported in other theoretical discussions (Compas, 1987b). Wills and Shiffman (1985) also classify coping responses into *Cognitive* and *Behavioural* but it is clear from their examples that both problem-focused and emotion-focused strategies feature in each group. Wills and Shiffman have a third category, *Acceptance,* which is apparently cognitive (eg. *Turn to Religion*) and does not add a different dimension.

A different approach is taken by Suls and Fletcher (1985) in their meta-analysis of a number of studies. They classify coping strategies as *Attention* which "focus on the source of stress and/or one's psychological/somatic reactions", and *Avoidance* which "focus attention away from either the source of stress or one's psychological/somatic reactions" (p. 250). Suls and Fletcher note "a complex relationship" (p. 252) between their classification and the problem-focused, emotion-focused distinction. Problem-focused strategies must involve attention, but emotion-focused strategies can involve attention or avoidance.

Maddi (1981) has suggested a similar classification: *Avoidance* and *Transformational* coping. However, both the labels and the descriptions have strong value connotations and take little account of most factors discussed here.

Pearlin and Schooler (1978) take yet another approach with their classification of coping as

1. Responses that change the situation.
2. Responses that control the meaning of the experience.
3. Responses that control the stress effect.

Study of their examples indicates that the first category covers problem-focused behavioural strategies, the second category covers cognitive strategies, both emotion-focused and problem focused, and the third category covers emotion-focused strategies, both cognitive and behavioural.

This review of theoretically derived classifications leads to the conclusion that there are three main dimensions: problem or emotion-focused, behavioural or cognitive and avoidance or attention. As discussed,

the inter-relationships are complex. When attempts are made to categorise strategies into combinations of these dimensions, results vary widely.

Empirical Classifications

Conceptual classifications of coping provide starting points for discussion and research, but have generally been found inadequate in analysing the "bewildering richness of [coping] behaviour" (Pearlin and Schooler, 1978, p. 4). As measures of coping were developed, more new categories of coping strategies appeared in the literature.

Most empirical classifications are based on the factor analysis of pools of items, each being a description of a specific coping strategy. In some research, the items are generated by the researcher directly from a conceptual classification (Folkman and Lazarus, 1984; Tolor and Fehon, 1987). In other cases items are obtained from the content analysis of responses to open-ended questions about coping strategies (Dise-Lewis, 1988; Pearlin and Schooler, 1978).

A number of researchers use various combinations of sources including conceptual classifications, open-ended questions, and items from other research (Carver *et al*, 1989; Endler and Parker, 1990a; Frydenberg and Lewis, 1993; McCrae, 1984; Sidle *et al*, 1969; Spirito *et al*, 1988; Wills, 1986; Folkman *et al*, 1986).

The number of categories obtained by factor-analysis varies widely from three (Endler and Parker, 1990a) through to 28 (McCrae, 1984). In one case, the same item pool elicited 11 factors in one study (Wills, 1986) and five factors, with the forced exclusion of many items, in a different study (Glyshaw *et al*, 1989).

Endler and Parker (1990a, b and c) factor-analysed their items and obtained three factors, *Task-oriented, Emotion-oriented* and *Avoidance.* Further factor analysis of the *Avoidance* sub-scale yielded two further factors, *Distraction* (to other situations or tasks) and *Social Diversion* (to people). Behavioural and cognitive strategies are included in all three sub-scales.

Where a large number of factors is established, some researchers group them into a smaller number of categories labelled "styles" by Frydenberg and Lewis (1993), and "functions" by Pearlin and Schooler (1978). Pearlin and Schooler allocated their factors into the three groups described in the Conceptual Classifications section. Frydenberg and Lewis performed a factor analysis on their 18 factors and labelled the resulting three factors *Solving the Problem, Reference to Others* and *Non-productive Coping.*

Stone and Neale (1984) carried out an interesting series of studies using an item pool developed from the literature and other coping measures to cover nine (later eight) conceptually-derived categories. In one of their studies, subjects were given training in the definitions of the eight categories and then asked to sort the items. Percentages of "correct" sorts ranged from 56% for *Relaxation* to 88% for *Religion.* Their conclusion that "different coping items can serve different functions for different people" (Stone and Neale, 1984, p. 896) is an important one, yet has received little attention in the coping literature.

Despite the increasing sophistication of the sorting techniques, the lack of consensus in classification continues to cloud the issue. The same item can be coded in many ways, as can be seen from Table 1.

TABLE 1: ALLOCATION OF ITEM TO COPING CATEGORY

Item	Classification	Reference
Think of my good points.	*Distraction*	Dise-Lewis (1988)
Think about the good times I've had.	*Avoidance-oriented Coping*	Endler and Parker (1990a)
Tried to look on the bright side of things, to find something good about the situation.	*Emotion-focused*	Folkman and Lazarus (cited Mangi, 1986)
Look on the bright side of things and think of all that is good.	*Focus on the Positive*	Frydenberg and Lewis (1993)
Try to notice only good things in life.	*Cognitive Coping*	Glyshaw *et al* (1989)
Try to think of the good things in your life.	*Developing Self-reliance*	Patterson and McCubbin (1987)
Counted my other blessings and focused on the good things in my life.	[a]*Distraction* (35%) *Religion* (35%) *Situation Redefinition* (35%)	Stone and Neale (1984)

Note: [a]Stone and Neale classified this item as *Distraction*. The percentage figures show the percentage of their subjects who classified the item in each of the three categories.

Empirically-derived categories show more diversity than conceptual categories, however analysis shows the conceptually-derived dimensions of problem or emotion focused, behavioural or cognitive, and avoidance or attention feature strongly. The addition is a category most often labelled "Seeking (or developing) social support" (Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Spirito *et al*, 1988; Stone and Neale, 1984). Closely related categories or sub-categories include *Peer Support, Parental Support, Professional Support, Adult Social Support, Social Diversion,*

Advice Seeking and *Invest in Close Friends* (Carver *et al*, 1989; Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Pearlin and Schooler, 1974; Wills, 1986). The frequent appearances of social support factors indicates the importance of this dimension in classifications of coping. Its relationship to the other dimensions is not clear at present.

Factors Associated with Coping

Definitions, theoretical discussions and research evidence all contribute factors which are closely associated with coping and complicate the interpretation of research findings and comparisons across studies. A brief outline of factors most often discussed in the literature on coping follows.

One conceptual difficulty is distinguishing a coping strategy such as seeking social support or religious solace from the personal resources of having social supports or religious beliefs.
A distinction is made here between factors within the person and factors within the situation, although this is sometimes an artificial distinction. As Olah *et al* have commented "Coping with stressful events is a process governed by individual and situational factors in a dynamic, bi-directional interaction" (1989, p. 935). Thus qualities of a stressor, such as strength or severity, cannot be seen as entirely separate from the person's appraisal. Appraisal of a stressor as threat, harm or challenge (Folkman and Lazarus, 1984; McCrae, 1984) and appraisal on dimensions of desirability, meaningfulness and change (Stone and Neale, 1984) depend on both individual and situational factors.

Cameron and Meichenbaum (1982) list a number of ways in which distorted perception can influence the experience of stress and coping, but, in general, researchers can only hope with Lazarus and Launier that "the fit between appraisal and reality is usually pretty good for most persons" (1978, p. 320).

The amount and quality of social support resources are complex factors which interact with stress and coping in a variety of ways. Family factors, peer and work relationships and religious support groups have all been shown to be significant influences (Pearlin and Schooler, 1978; Stone and Neale, 1984; Wills, 1986). In their research review, Cohen and Wills (1985) found evidence for two models of interaction. In the "buffering" model, social support affects the initial appraisal of a potentially stressful situation; in the "main effect" model, social support affects re-appraisal and coping responses.

Factors within the person

Psychological factors which have been shown to be related to coping are:

1. Attributional factors such as self-efficacy, mastery, learned helplessness and locus of control (Bandura, 1981; Dweck and Wortman, 1982; Hauser and Bowlds, 1990; Moos and Billings, 1982; Pearlin and Schooler, 1978; Roskies and Lazarus, 1980).
2. Factors measuring lability of emotions, such as anxiety (Glyshaw *et al*, 1989; Olah *et al*, 1989), depression (Glyshaw *et al*, 1989) resilience or hardiness (Compas, 1987b; Maddi, 1981), neuroticism (Tolor *et al*, 1987) and Type A personality (Roskies and Lazarus, 1980).

3. Self-esteem and self-confidence factors (Pearlin and Schooler, 1978).
4. Control factors which are less stable within the person and more related to particular stressors or situations (Pearlin and Schooler, 1978; Törestad *et al*, 1989).

Another set of factors related to coping are physical factors such as health and energy (Roskies and Lazarus, 1980; Stevens, 1988) age (McCrae, 1984; Rutter, 1981) and gender (Dise-Lewis, 1988; Folkman and Lazarus, 1980; Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Siddle, 1960; Stone and Neale, 1984).

The cognitive resources of the individual are also related empirically and conceptually to coping. These include:

1. Beliefs, values, attitudes, knowledge (Lazarus and Launier, 1978; Roskies and Lazarus, 1980; Stevens, 1988).
2. Problem-solving and intellectual abilities (Moos and Billings, 1982; Roskies and Lazarus, 1980; Stevens, 1988; Rutter, 1981).
3. Cognitive mediating variables or self-talk (Cameron and Meichenbaum, 1982; Pearlin and Schooler, 1978; Uhleman and Plater, 1990).

The history and experience of the individual will also affect coping. Factors in this group include:

1. Cultural background (Jerusalem and Schwartzer, 1989; Seiffge-Krenke and Shulman, 1990; Törestad *et al.*, 1989).
2. Previous experience with the same or similar stressor (Bandura, 1981)

3. The number and strength of concurrent or recent stress experiences (Folkman *et al*, 1984; Rutter, 1981).
4. Family environment factors (Shulman *et al*, 1987; Stern and Zevon, 1990).

Situational Factors

While individuals vary in their choice of coping strategies, some stressors tend to be more responsive to some strategies than others (Folkman and Lazarus, 1984; McCrae, 1984; Pearlin and Schooler, 1978). Influential factors include:

1. The severity of the stressor (Fleming *et al*, 1984; Kanner *et al*, 1981; Pearlin and Schooler, 1978).
2. Controlability and predictability (Stone and Neale, 1984; Törestad *et al*, 1989).
3. Temporal factors, especially in an on-going stress experience (Stevens, 1988; Suls and Fletcher, 1985).

Coping Efficacy

The development of coping as a concept in its own right for theoretical and research consideration, requires that coping be distinguished from similar concepts and from theories where the term is used with different connotations.

Psycho-analytic and ego psychology theories tend to contrast coping with defense and use coping to refer to "healthy", "reality-oriented" responses (Haan, 1977). Defenses are often considered in heirarchies, and are difficult to study, especially as distinct from outcomes (Lazarus and

Folkman, 1984). The everyday connotation of coping also has the implication of success (Stone and Neale, 1984).

The definitions of coping used in the research reviewed here follow the lead of Lazarus and Folkman who state "no one strategy is considered inherently better than any other" (1984 p. 134) and deliberately omit reference to efficacy. In this context, coping refers to purposeful efforts to deal with stress, and evaluation of efficacy is a separate issue.

Efficacy has been defined by Pearlin and Schooler (1978) as "the extent to which coping response attenuates the relationship between the life strains people experience and the emotional stress they feel" (p. 8). Coping efficacy is an important issue for a number of reasons. Haan (1982) refers to "the value-based conclusion of common sense that there are good and better and bad and worse ways of handling stress" (p. 256). The study and analysis of coping seem to be somewhat lacking in goal direction without consideration of efficacy. And finally, the task of helping people to cope "better" needs research findings for guidelines.

A variety of measures and outcome variables have been used in research on coping efficacy. Self-report of efficacy is the most direct approach, sometimes incorporated into the coping measure itself (Pearlin and Schooler, 1978; Uhleman and Plater, 1990). Outcome variables used to indicate efficacy include self report of physical symptoms, physiological measures and rates of illness or mortality (see review by Suls and Fletcher, 1985; Cohen and Lazarus, 1973; Uhleman and Plater, 1990).

Behavioural ratings by adults have sometimes been used as outcome variables with children or adolescents (Compas *et al*, 1988; Dise-Lewis, 1988).

Measures of behavioural outcomes, such as substance use (Patterson and McCubbin, 1987; Wills, 1986) represent another approach.

Psychological variables, such as anxiety, depression and self-esteem have a complex relationship with coping. They affect coping, as discussed in earlier, and they are affected by coping and can therefore be studied as outcome variables (Glyshaw *et al*, 1989; Olah *et al*, 1989). It is in this area that there is the greatest need for clear research questions.

From this research, some general principles of coping efficacy are emerging.

The Match of Strategy and Stressor

A frequent research finding is that there are relationships between particular stressors and the use of particular strategies.

Evidence that people are more likely to choose particular strategies to deal with particular stressors implies that they believe they have superior efficacy. Where both frequency and efficacy are measured, the results support this conclusion (Moos and Billings, 1982; Spirito *et al*, 1988). Pearlin and Schooler (1978) studied their subjects coping strategies in four "role areas"; marriage, parenting, household economics and occupation and found that coping strategies varied in their efficacy across the role areas. For example avoidance and withdrawal could be considered effective in dealing with occupational and economic stress, but were less likely to be considered effective for marriage and family stress.

Some stressful situations, such as diagnosis of a terminal illness or death of a spouse, are inherently unresponsive to some coping strategies,

and strategies allied to defenses (such as denial, or avoidance) can be effective (Lazarus and Folkman, 1984). As Compas (1987b) points out "no single style of coping is adaptive in all situations" (p. 400).

Repertoire of Strategies

A number of the research findings previously discussed indicate the value of a person having a broad repertoire of coping strategies. Stressors vary in their responsiveness to coping strategies, and people experience a wide variety of stressors throughout life. Even with the same stressor, strategies can vary in their efficacy at different times in a coping episode. Lazarus and Folkman found that in over 95% of coping episodes, a person uses both problem focused and emotion focused coping (Folkman *et al*, 1986). The large number of factors, both intrinsic and extrinsic to the person, which are related to coping were discussed earlier. They will affect the resources a person brings to the appraisal of a potentially stressful situation, the selection of a coping strategy, and its potential efficacy.

Pearlin and Schooler (1978) use a rather mixed metaphor to emphasise the value of a repertoire of strategies: "The magical wand does not appear in our results, and this suggests that having a particular weapon in one's arsenal is less important than having a variety of weapons" (p. 13).

Hierarchy of Strategies

The evidence that some coping strategies are a better match than others for particular stressors, does not preclude the possibility that some kinds of coping strategies may be associated with generally more favourable outcomes. Some research findings do support this thesis, but the lack of consensus about the classification of coping strategies, the variety of

measurement techniques and outcome measures, and the number of subject-specific studies make conclusions difficult.

Although slightly different labels are used, several studies which include a variety of stressors show that strategies most often linked with positive outcomes are problem-solving, taking direct action, seeking information and focussing attention on the situation. All the outcome measures discussed above were used in these studies (Glyshaw *et al*, 1989; Moos and Billings, 1982; Olah *et al*, 1989; Spirito *et al*, 1988; Suls and Fletcher, 1985; Tolor and Fehon, 1987 and Uhleman and Plater, 1990).

Social support is frequently mentioned as an important coping strategy but close examination often indicates that a resource is being considered rather than a strategy (Cohen and Wills, 1985; Compas, 1987b; Spirito *et al*, 1988).

Some studies have also examined links between coping strategies and negative outcomes such as anxiety, ill-health and substance use. Patterson and McCubbin (1987) conclude from their research: "While the focus of most coping research has been on the efficacy of coping behaviours in reducing stress, these findings suggest that we need to consider simultaneously coping behaviours which may contribute to or exacerbate stress" (p. 184). From the small number of studies addressing this issue, three kinds of strategies are suggested for discussion.

A strategy called *Escape* showed a significant positive correlation with anxiety in the study by Olah *et al* (1989). Suls and Fletcher (1985) found that *Avoidance* often had a negative effect in the long-term. Wills (1986) found a similar factor, ***Distraction***, to be associated with substance use. Patterson and

McCubbin (1987) found that the use of *Ventilating-feelings* correlated positively with substance use. In the study by Dise-Lewis (1988) the relationships between teachers ratings of coping and self-reports of coping strategies are difficult to interpret, but there are significant links between negative ratings and the strategies *Aggression* and *Self-destruction*.

The relationships between social support and adaptive or maladaptive outcomes are complex. Having social support as a resource is generally found to be an adaptive advantage (Rutter, 1981; Wills, 1986). However, there is evidence that turning to others as a coping strategy can be related to negative outcomes, especially substance use. Patterson and McCubbin (1987) found significant relationships between substance use by adolescents and the coping strategies *Investing in Close Friends* and *Developing Social Support*. Wills (1986) found that *Seeking Peer Support* was related to substance use in adolescents. Tolor and Fehon (1987) concluded from their study that "poorer adjustment is somewhat more likely to involve a more dependent response style" (p. 40).

Dise-Lewis (1988) also found evidence of some coping strategies having a negative effect. These were *Aggressive* and *Self-destructive* strategies and she concludes: "[my] data suggests that the presence of these negative strategies, more than the number or type of positive coping strategies, is connected with the presence of physical and psychological problems" (p. 498). *Aggression-coping* was also related to substance use in the study by Wills (1986).

The research evidence falls far short of providing guidelines for a hierarchy of coping strategies, even for particular types of stressor. However two broad conclusions can be reached. As Moos and Billings (1982) state

"There is growing evidence that the use of such strategies as logical analysis, cognitive re-definition, information-seeking, problem-solving action and affective regulation is positively related to some indexes of adaptation" (p. 226). And as Compas (1987b) concludes "[there are] coping behaviours which may contribute to or exacerbate stress" (p. 184). The evidence about these is less clear, but avoidance, turning against self or others, and being dependent on others may well be strategies likely to be unhelpful.

Developing Coping Efficacy

Consideration of coping efficacy leads naturally to considering how people could be helped to improve their coping. The discussion of coping efficacy suggests a number of ways in which such help, or training, could be approached. Cognitive Behaviour Therapy is the therapeutic approach, usually seen as closest in application to the coping theory and research allied to the Lazarus model (Cameron and Meichenbaum, 1982; Roskies and Lazarus, 1980).

Appraisal

The first element in a coping episode is the person's appraisal of the stressor as harm, threat or challenge and an evaluation of its strength, predictability and controlability. The more accurate the appraisal, the more likely the person would be to choose an effective coping strategy. Appraisal also involves the person assessing resources, both internal and environmental, with reasonable accuracy.

Many cognitive intervention programmes work on cognitive mediating variables or self-talk; aiming to achieve a decrease in negative or irrational and an increase in positive or rational self-talk (eg. Ellis and

Bernard, 1985). Such training may directly influence the person's self-appraisal and appraisal of a potential stressor, but this connection is not usually made explicit. An exception is the cognitive-behavioural "stress-innoculation" programme of Cameron and Meichenbaum (1982) where the first task is "developing and refining the client's appraisal skills" (p. 703). This is done by teaching a "scientific" approach including developing hypotheses, brainstorming alternatives and evaluating one's biases and cognitive strategies.

Coping Repertoire

The "competent coping person" (Roskies and Lazarus, 1980) will ideally have a wide repertoire of coping strategies which will prominently include those shown to be effective across a range of stressors.

Training programmes for particular strategies are abundant in the stress management literature. These include assertiveness (eg. Bower and Bower, 1991), visualisation (eg. Fanning, 1988) and relaxation (eg. Davis *et al*, 1982). Many group programmes tend to teach strategies with little apparent regard to either need or evidence about efficacy.

Cognitive therapists also work with the expressed or perceived needs of individuals to enlarge their repertoires of effective coping strategies. In individual work, assessment of inefficient or detrimental coping is possible and training may be tailored to need. Roskies and Lazarus (1980) claim that "clinicians have treated adequacy as if it were self-evident" (p. 51). This may be an exaggeration, but it appears that some links between research and treatment could be of benefit.

Another aspect of expanding a coping repertoire might be to increase the person's knowledge about coping; the elements of coping, the strategies, and what strategies work best, both generally and for specific stressors.

Coping Behaviour

Accurate appraisal and the possession of an appropriate coping strategy do not automatically result in the person carrying through at the appropriate behavioural or cognitive level. Other requirements are the ability to retrieve the strategy (Cameron and Meichenbaum, 1982; Roskies and Lazarus, 1980), and, as discussed earlier, the ability to "match" the stressor and the strategy, and consideration of the balance of emotion-focused and problem-focused coping. Once a strategy has been used, re-appraisal must be carried out and a further coping process may be necessary. When a coping episode is complete, recovery is the final task (Cameron and Meichenbaum, 1982; Stoyva and Anderson, 1982).

The factors associated with retrieval do not appear to have been studied systematically. Cameron and Meichenbaum suggest that training to improve retrieval should focus on the recognising of cues and on appropriate self-talk. The ability to match the coping response effectively to the stressor is a complex task requiring accurate appraisal of the stressor, possessing and retrieving the strategy or strategies, and making the behavioural or cognitive response. Balancing emotion-focused and problem-focused coping is a part of this. Such a process is not specifically examined in the literature on training.

The question of recovery from a stress and coping episode (where this is possible) has mostly been approached by training in relaxation or meditation and by feedback techniques (Stoyva and Anderson, 1982). As Stoyva and Anderson point out, such methods are often successful but their use is seldom preceded by analysis to establish whether this is the area of inadequacy. The coping-rest model of stress management designed by Stoyva and Anderson is an attempt to include such an analysis in training and treatment.

The role of practice is another important factor. Training may incorporate an element of practice or rehearsal which may be visualised in a simulated or laboratory setting or carried out in a real situation. Techniques such as desensitisation and behaviour rehearsal make extensive use of practice (eg. Houston, 1982). More research evidence is needed about the relationship of the techniques to coping strategies.

Training in the area of coping behaviour may also require that the person reduces the use of inappropriate strategies. Training programmes have most often addressed this by alerting people to their negative self-talk and teaching alternative messages (Uhleman and Plater, 1990). The inclusion of research findings about efficacy of strategies and responsivity of stressors seems likely to lead to improved success rates for such programmes.

Associated Factors

A number of factors associated with coping were discussed earlier. Training programmes and treatment methods have been advocated for many of them. It is beyond the brief of this discussion to detail these;

however an important question needs to be asked and answered. What is the relationship between training focused on coping and training focused on factors such as self-efficacy or anxiety?

<u>Measures of Coping</u>

Coping is a complex dynamic process which is closely related to a number of other complicating factors. While there is general agreement on broad parameters, no consensus has been reached with the classification of strategies. Thus, measurement of coping is a difficult task, both conceptually and in application. A number of measures have been described in the literature, and these will be discussed with reference to the approaches adopted. The only statement which covers all measures is that respondents are asked to report on their responses to stressful situations.

Stressors

Some measures make no attempt to describe or limit the stressor to be considered (Dise-Lewis, 1988; Patterson and McCubbin, 1987; Wills, 1985). For example Dise-Lewis asks "assess whether [you] would use the particular strategy in a stress situation" (p. 486). Most measures, however, deliberately allow instructions to be varied to indicate either a general response or response to a stressor identified by the respondent, or by the person administering the measure (Folkman and Lazarus, 1986; Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Spirito *et al*, 1988).

Stone and Neale (1984), Billings and Moos (1984) and Uhleman and Plater (1990) used only self-selected, specific stressors for their measures. For self-selected stressors, respondents can also be asked to evaluate the stressor. Stone and Neale (1984) included evaluation of control, desirability, change,

predictability, meaning, and severity in one version of their measure. Most measures do not ask for any evaluation.

A final group of measures presents the respondent with descriptions of hypothetical situations and ask for hypothetical responses (Jerusalem and Schwarzer, 1989; Olah *et al*, 1989; Sidle *et al*, 1969; Tolor and Fehon, 1987).

Strategies

The way in which the respondent is asked to report on coping, and how the responses are categorised for interpretation, provide the next source of variability in approach. In this discussion, "item" will be used to refer to any coping statement to which a respondent reports. "Strategy" will be used for a category of coping used in analysis. In some measures a strategy may consist of only one item, but usually strategies are sampled by several specific items. A strategy may also be called a "scale" or "sub-scale".

A few measures are completely open-ended, asking respondents, for example, "What did you do or would you do in this situation?" (Olah *et al*, 1989, p. 936). Uhleman and Plater (1990) and Sidle *et al* (1969) also used this method. The responses are then content-analysed by raters and sorted into categories. In the studies just mentioned the categories were pre-selected on conceptual grounds.

Most measures use the more economical approach of providing the respondent with a number of items and asking whether, or how much, they are used. The number of items varies widely from ten (Spirito *et al*, 1988) to 118 (McCrae, 1984). Such measures include those of Billings and Moos (1984), Dise-Lewis (1988), Folkman and Lazarus (1984), Frydenberg and Lewis (1993), Jerusalem and Schwarzer (1989), Patterson and McCubbin (1987), Sidle

et al (1969), Spirito *et al* (1988), Stone and Neale (1984), Tolor and Fehon (1987).

The lists of items are initially derived from conceptual classifications, analysis of open-ended responses or a combination. Many measures use items from other scales.

Items are usually grouped into pre-determined categories so that the measure provides scores for different strategies. This may be done on a conceptual basis (Spirito *et al*, 1988; Billings and Moos, 1984; Tolon and Fehon, 1987) or more usually by factor analysis during the construction of the measure (Dise-Lewis, 1988; Jerusalem and Schwarzer, 1989; Patterson and McCubbin, 1987; Pearlin and Schooler, 1978; Wills, 1986). A combination of both methods was used by Frydenberg and Lewis (1993) and Folkman and Lazarus (1986).

Stone and Neale (1984) were particularly concerned about respondents "mis-interpreting" items; that is relating them to strategies other than the one pre-determined. This led them to develop an unusual method where they provided respondents with descriptions of eight broad, conceptually-derived strategies and asked them to indicate which strategies they used in a stressful situation, and freely describe what they did.

The number of strategies in a measure also varies widely, from a broad division of two; emotion-focused and problem-focused (eg. Seiffge-Krenke and Shulman, 1990) through a popular range of 8 to 10 (eg. Spirito *et al*, 1988; Wills, 1986) to large numbers such as 18 (Frydenberg and Lewis, 1993).

Some measures are frequently used more like item-pools than scales, with researchers doing their own factor analysis, naming their own factors and omitting items which fail to load significantly on them. The Ways of Coping Checklist (Folkman and Lazarus, 1986) and an un-named measure by Wills (1985) are two measures which have been widely used in this way.

Most of the item scales also ask for an indication of the frequency with which a strategy is used, usually on a 4-point Likert scale. Only a few ask for an evaluation of efficacy as well. Uhleman and Plater (1988) asked for a yes or no response to "do you feel the coping strategy used in this situation resulted in a positive outcome" (p. 7). Spirito *et al* (1988) used a 5-point Likert scale for efficacy.

Psychometric Standards

There are a number of difficulties associated with the setting of standards to evaluate measures of coping. Moos and Billings (1982) claim that "researchers should recognise that psychometric procedures such as internal consistency and factor-analytic techniques may have only limited usefulness in evaluating the adequacy of measures of coping" (p. 225). However, more recent work emphasises the need for higher standards to be set (Endler and Parker, 1990c).

In the literature of coping measurement there are only limited reports of the statistical properties of the measures. Many were developed or adapted principally for research use and are unpublished. Even the most frequently used measure, the Ways of Coping Checklist (later Questionnaire) of Folkman and Lazarus (1986), has had no standard scoring or administration procedure. Endler and Parker comment that "there are few

other research areas in psychology where such an approach to a 'standardised' test would be considered methodologically acceptable" (1990c p. 7).

In the following discussion, only measures suggested for wider research or clinical use are included.

Validity

As noted earlier, sub-scales of measures (strategies) have usually been obtained from factor analysis of a large number of items. There is a marked lack of consensus about the type of factor analysis and what to do with items loading variously on a number of factors. For example, Frydenberg and Lewis (1993) used an oblique solution, Glyshaw *et al* (1989) an orthogonal. Glyshaw accepted items which loaded above 0.3 on more than one factor (1989, p. 613) while Frydenberg and Lewis did not. Standards used for retaining or discarding items in a measure also vary widely.

The stability of the factor structure of a measure must be questioned when different analyses fail to replicate factors. The Folkman and Lazarus items produced different sets of factors in different studies (1985, 1986) while Glyshaw *et al* (1989) using Wills' (1986) items did not find all the factors that he did. Two recent measures using more stringent approaches are Frydenberg and Lewis (1993) and Endler and Parker (1990a).

Inter-correlations between sub-scales is yet another area for variation. In part this is related to the number of categories into which coping is subdivided, and in part the standards set by the researchers. Folkman and Lazarus (1985) and Carver *et al* (1989) report inter-correlations above 0.6

which is considered an unsatisfactory level by many others (Endler and Parker, 1990a; Frydenberg and Lewis, 1993).

The variation in classification and measurement of coping makes it very difficult to test a measure for concurrent validity by using another measure of coping. Two rare reports are Spirito *et al* (1988) and Endler and Parker (1990a).

Spirito *et al* compared results on their brief measure, Kidcope, with results on A-COPE (Patterson and McCubbin, 1987) and the Coping Strategies Inventory (CSI), an unpublished measure by Tobin, Holroyd and Reynolds (cited Spirito *et al*, 1988 p. 559). They predicted that the highest correlations would be between strategies appearing "quite similar" (p. 561). For Kidcope and CSI, the predicted correlations were all among the highest, five out of seven were significant and no other correlations were significant. For Kidcope and A-COPE, relationships were similar but not as strong, which Spirito *et al* explained was because "factor scores on the A-COPE are more specific and less cognisant with the ones chosen for the Kidcope" (p. 566).

Endler and Parker compared their three-factor measure with one eight-factor version of the Folkman and Lazarus items. They predicted and found significant relationships between scores on their task, emotion and avoidance sub-scales and similar Folkman and Lazarus sub-scales.

Whether the concurrent validity of a coping measure can be tested by use of another criterion is also an issue. Dise-Lewis (1988) describes using measures of anxiety, depression, "role-distress" and psychosomatic symptoms as validity data. Endler and Parker (1990a) also use this approach

for their Multi-dimensional Coping Inventory (later Coping Inventory for Stressful Situations).

While the relationships between coping and related factors may be multi-directional, it would seem that a valid measure of coping should show some significant relationships. Testing specific research hypotheses rather than calculating a large set of correlations would be preferable, but is rare in the literature. An exception is the study of Endler and Parker (1990b). Using self-report measures, they found that the coping strategies of subjects with a high number of depressive symptoms differed from those with few symptoms on both task-oriented and emotion-oriented coping.

Studies extending over a significant length of time and enabling the study of predictive validity are even more rare. Glyshaw *et al* (1989) used prospective regression analysis over a five month interval, and found significant negative relationships between "problem-solving coping" and depression, and between "social-entertainment coping" and anxiety for young adolescents, but no significant relationships for older adolescents.

Face validity is considered important by some researchers and not by others. Endler and Parker (1990c) are unusually specific about eliminating items on the judgement that they lacked face validity. Measures such as the LECI of Dise-Lewis and the A-Cope of Patterson and McCubbin include some factors which are very difficult to interpret and to compare with other measures. They would appear to benefit from pruning to improve face validity.

The adequacy of the sample of coping responses covered by the measure is another aspect of validity. The ways in which this can be done

were discussed earlier. The measures reviewed here vary widely in the thoroughness of their sampling. The practice of dropping items for different populations and analyses, as discussed earlier, must severely affect the sampling validity of many measures. Of the measures reviewed here, the ACS of Frydenberg and Lewis (1993) has the most thorough approach to sampling. They used content analysis of open-ended responses, factor analyses, a literature review and checks for language suitability and face validity.

Reliability

Almost all coping research considers coping as a transactional process and researchers often make such statements as "stability of response is not an entirely appropriate way to assess scale reliability" (Frydenberg and Lewis, 1993, p. 36). Moderate, rather than high, levels of reliability are therefore generally thought acceptable. Test-retest correlations and internal consistency coefficients (usually Cronbach alpha) are the two statistical methods used.

Reports of test-retest reliability follow the pattern of validity test results, with few examples and a range of coefficients reported by researchers. Spirito *et al* (1988) carried out four test-retest correlations at time intervals of three days to 10 weeks. Their Kidcope measure consists of only 10 items which are rated for frequency and efficacy. Frequency correlations ranged from .56 to .72 at three days, but declined rapidly and at 10 weeks, the range was .15 to .43. Efficacy ratings also declined but not as markedly. After one week, scarcely any coefficients reached .5, indicating low reliability of the measure over time.

Dise-Lewis (1988) reports test-retest reliability of items after an interval of 11 weeks. These ranged from -.13 to .61 with a median of .32. She reports "the coefficient representing the stability of the set of coping strategies was .98" (p. 493) but does not indicate how this was computed.

There are higher test-retest correlations for some measures. Glyshaw *et al* (1989) reported correlations "in the .6 neighbourhood" (p. 419) after an interval of five months for their five-factor adaptation of Wills' items. Endler and Parker (1990a) report a range of .51 to .73 after six weeks for their three-factor measure. Frydenberg and Lewis report correlations of .44 to .84 after two weeks for their 18 sub-scales. Only one sub-scale is below .5.

Tests of internal consistency of factors or sub-scales are more often reported, but few researchers have been explicit about the standards appropriate. Reported alpha coefficients can be as low as .44 (Moos and Billings, 1982), however where a minimum acceptable level is indicated, it is about .65 (Endler and Parker, 1990a; Frydenberg and Lewis, 1993; Stone and Neale, 1984). Stone and Neale abandoned their measure using classified items because the alpha coefficients were "unacceptable". Endler and Parker report consistently high coefficients, all above .69. Frydenberg and Lewis are doing further work on their two sub-scales with alphas below .65.

For measures which have an open-ended response format and use raters to categorise the responses (Olah *et al*, 1989; Sidle *et al*, 1969; Uhleman and Plater, 1990) inter-rater reliability is a further area to be considered. Satisfactory figures are reported in all these studies.

Coping in Adolescence

The normative stressors and developmental tasks of adolescence require effective coping strategies for a satisfactory transition to adulthood. Stressful situations will be met throughout life, and their management will be influenced by the person's knowledge and use of coping strategies. Patterns of coping begin to be established in adolescence, and ineffective coping can lead to maladaptive behaviour. In 1986, Seiffge-Krenke found when reviewing 20 years of coping research, only 7.2% of studies dealt directly with adolescents (Seiffge-Kreuke and Shulman, 1990). The proportion has increased since then, but there is still much to be learnt and a need for valid, reliable measures designed for adolescents.

Adolescents' Coping Strategies

A number of studies have investigated the coping strategies used by adolescents. Most findings are, in part, a function of the classification structure of the measure used, so that comparisons and the establishment of general principles are somewhat limited. Further difficulties in making comparisons across studies relate to the variety of stressors studied, whether stressors are specified or not, and the response format used. Research findings will be discussed in terms of the comparative frequency of strategy use, relationships between stressors and strategies, differences in age, gender and culture, and relationships between coping and adjustment measures.

Comparative use of Coping Strategies

Where only the broad categories of problem-focused and emotion-focused strategies are used, typical findings are that adolescents regularly use

both categories (Compas, 1987; Compas *et al*, 1988). Seiffge-Krenke and Shulman (1990) used three broad categories of *Active Coping* (behavioural, problem-focused, attention-oriented), *Internal Coping* (cognitive, problem focused, attention-oriented) and *Withdrawal* (avoidance). Adolescents in their studies used *Withdrawal* (described as "dysfunctional") less than the other two categories.

More useful information can be obtained from studies using a larger number of coping categories. Table 2 shows the findings of five studies using the category labels of each study, which emphasises the difficulty of making comparisons and drawing conclusions.

It seems that adolescents are most likely to use attention-oriented, behavioural strategies which focus on either the problem or the emotion, and to seek social support, often from friends. They are least likely to seek professional support or use avoidance-oriented strategies. Findings on the cognitive strategies *Focus on the Positive* and *Wishful Thinking* are contradictory.

Relationships between Stressors and Strategies

Research into the coping responses of adolescents to different kinds of stressors is particularly limited and fragmented. This point is made by Compas *et al* (1988) who note that research with adults shows "considerable variability in coping across situations" (p. 405). Findings by Compas *et al* (1988) and Wills (1986) suggest that adolescents may show greater consistency than adults, but this conclusion must be tentative.

A study by Frydenberg and Lewis (1990) using an adapted form of the Ways of Coping Checklist (Folkman and Lazarus, 19886) asked adolescents to

TABLE 2

ADOLESCENTS' USE OF COPING STRATEGIES

Strategies Used Most	Strategies Used Least	Measure	Reference
Relax *Work* *Solve Problem* *Physical Recreation*	*Seek Spiritual Support* *Seek Professional Help* *Social Action*	Adolescent Coping Scale	Frydenberg and Lewis (1993a)
Problem-focused *Focus on Positive* *Wishful Thinking*	*Keep to Self* *Tension Reduction*	Ways of Coping Checklist (adapted)	Frydenberg and Lewis (1990)
Positive Action *Seek Information* *Focus on Positive* *Seek Support*	*Blaming Others* *Detaching Self* *Preparing for Worst*	Unpublished research measure	Tolor and Fehon (1987) (NB. Males only)
Relax *Friends* *Self-reliance* *Humour*	*Seek Professional Support* *Avoiding Problems*	Adolescent Coping Orientation for Problem Experiences	Patterson and McCubbin (1987)
Problem-focused *Seek Social Support*	*Keep to Self* *Focus on Positive*	Open-ended measure	Stern and Zevon (1990)

identify a concern from each of the three areas of Achievement, Altruism and Relationships. A major conclusion from this study is "that a profile or pattern of coping exists for students [adolescents] which is similar and relatively independent of concerns" (p. 12).

However, the study also showed variation in the emphasis placed on strategies used for different stressors. Achievement and Relationship stressors generally elicited similar patterns of coping responses, where *Solve the Problem, Seeking Social Support, Keep to Self* and *Self-blame* were all used more frequently than for Altruistic concerns. Two other findings were that *Focus on the Positive* was used more for Achievement than Altruism and Relationship concerns, while *Tension Reduction* was used more strongly for Altruistic concerns.

In two later studies using the Adolescent Coping Scale, Frydenberg and Lewis found very similar patterns of preferred coping strategies for general concerns and both family concerns (April, 1993) and achievement concerns (1993).

Gender Differences

Almost all studies have found some significant differences between the use of coping strategies by male and female adolescents. An exception is Olah *et al* (1989) who used a broad and atypical categorisation of strategies (*Constructive, Passive* and *Escape*) which may have masked differences.

The most robust finding is that females use significantly more strategies which involve seeking social support, including friends and family (Frydenberg and Lewis, 1991, April 1993, in press; Patterson and

McCubbin, 1987; Seiffge-Krenke and Shulman, 1990; Stark *et al*, 1989). The factor labelled *Stress-recognition* by Dise-Lewis (1988) was also used more by females and contains a predominance of items usually found in a social support category.

Other replicated findings are that females are more likely to use the strategies of *Wishful Thinking, Emotional Expression* and *Tension Reduction* (Frydenberg and Lewis, 1991, April, 1993; Spirito *et al*, 1988). Single studies have found females using more *Self-blame* (Frydenberg and Lewis, 1991), *Withdrawal* (Seiffge-Krenke, 1990) and *Self-reliance* (Patterson and McCubbin, 1987). A mega-category, *Non-productive Coping* was used by more females than males in another Frydenberg and Lewis study (in press). Females also tend to have a higher overall response rate (Dise-Lewis, 1988; Patterson and McCubbin, 1987) which partly explains the greater number of differences in the direction just discussed.

Males show much less consistency across studies. Strategies which they use more than females are all avoidance-oriented, however, including *Physical Recreation* and *Ignore* (Frydenberg and Lewis, 1991, April, 1993), *Resigned Acceptance* (Spirito *et al*, 1988), *Wishful Thinking* (Stark *et al*, 1988), and *Humour* (Patterson and McCubbin, 1987).

When considering these findings, it must be remembered that there are many more similarities than differences between males and females.

Age Differences

Considering the wide age-range of the adolescent period, and its importance as a developmental stage, it is surprising that few studies examine adolescent coping across age levels. Results of these studies, again

partly a function of the coping categories used, do not form an interpretable pattern.

Stark *et al* (1989) found no differences across the age-range 14-17. Stern and Zevon (1990) found none for school/work stressors, but younger adolescents used more emotion-focused strategies (all avoidance oriented) than older adolescents when responding to inter-personal stressors.

In contrast, a trend found in three studies suggests that older adolescents use less problem-focused and more emotion-focused coping strategies (Compas *et al*, 1988; Frydenberg and Lewis, in press; Sieffge-Krenke and Shulman, 1990). The specific results of Frydenberg and Lewis showed younger adolescents using more *Work* strategies, and older adolescents more *Tension Reduction* and *Self Blame*.

Cultural and Ethnic differences

Cross-cultural comparisons of adolescent coping are extremely rare in the literature. Most studies are with American adolescents. Frydenberg and Lewis (1990-3) are building a series of studies with Australian adolescents, while Olah, Törestad and Magnusson (1989) provide some Hungarian data. Only three studies were designed as cross-cultural and allow meaningful comparisons.

Two studies compared German adolescents with Turkish (Jerusalem and Schwarzer, 1989) and Israeli (Seiffge-Krenke and Shulman, 1990) adolescents. Frydenberg and Lewis (in press) divided their Australian adolescents by ethnic background (language spoken at home) into three groups: Anglo-Australian, European-Australian and South-East Asian-Australian.

The findings of Jerusalem and Schwarzer (1989) are limited by two main factors; their subjects were all male apprentices, and they used only the broad coping classifications of *Emotional* and *Instrumental* (problem-focused). Their main finding was that "culture is a stronger predictor of emotional coping tendencies than of preferences for problem-focused coping" (p. 791), with Turkish adolescents using more emotional strategies.

Seiffge-Krenke and Shulman (1990) found that "coping behaviour is comparable in both countries" (p. 371) but German adolescents used more *Active* (behavioural) and Israeli adolescents more *Internal* (cognitive) coping. They also found that although the same three factors emerged from separate factor analyses of items, some items loaded on different factors for the two cultural groups.

Frydenberg and Lewis (in press) found a number of significant differences, even though all their subjects had common experiences at school and in the community. Anglo-Australians used more *Tension Reduction* and less *Focus on the Positive* and *Work* strategies than the other groups. The South-East Asian group were more likely to use *Social Action, Work* and *Professional Help,* while the European-Australians used *Spiritual Support* more than the other groups.

Coping and Adjustment

Some important research questions in the area of adolescent coping are those which seek relationships between the use of coping strategies and indices of adjustment. Unless such relationships can be established, the validity of coping measures is questionable, and programmes to develop effective coping lack a sound research base.

The studies reviewed here use a variety of approaches. One approach is to compare the coping strategies used by an identified maladjusted group with those used by a control or contrasted group. The most common method is to correlate coping with concurrent measures or reports of adjustment. Finally a very few studies use a longitudinal approach. All measures used vary widely.

Two studies used an identified group of maladjusted adolescents. Roberts (1982) used an open-ended interview technique with "runaways" and a "normal control group". The runaways used more behavioural, avoidance-oriented strategies and less problem-focused or social support strategies. A similar finding was made by Spirito *et al* (1989) in a study of three groups: suicide-attempters, distressed but not suicidal adolescents and a normal group. The suicide-attempters used the strategy *Social Withdrawal* more than either of the other two groups.

Studies correlating coping with other self-report measures are reviewed next. Olah *et al* (1989) found a measure of anxiety correlated negatively with *Constructive* coping and positively with *Escape* coping. Jerusalem and Schwarzer (1989) found emotion-focused coping correlated with anxiety. Tolor and Felon (1987) divided a normal group of male adolescents on the basis of neuroticism test scores. They found a tendency for the "better adjusted" to use more coping strategies related to behavioural problem-solving and less dependence on others than the "poorly adjusted" group.

Compas *et al* (1988) found a negative correlation between the use of problem-focused strategies and reports by adolescents and their mothers of emotional and behaviour problems. There was a positive correlation

between these reports and emotion-focused strategies. Dise-Lewis (1988) used parent and teacher ratings as well as self-report measures of anxiety, depression and "role distress". The a-typical coping factors found and the enormous number of correlations generated with very low figures showing significance, make her results difficult to interpret in this context.

Patterson and McCubbin (1987) used substance use as a comparative measure and found positive correlations with the coping strategies *Invest in Close Friends* and *Develop Social Support*. The study of Wills (1986) showed a similar result over a two year period, with substance use showing a positive relationship with *Peer Support, Aggression* and *Distraction* coping, and a negative relationship with *Behavioural, Cognitive* and *Relaxation* coping strategies. Glyshaw *et al* (1989) used a five-month time interval and found *Problem Solving* coping negatively related to depression and *Social Entertainment* coping negatively related to anxiety for young adolescents. No significant relationships were found for older adolescents.

Measures of Adolescent Coping

The measures of coping discussed earlier included measures developed specifically for adolescents. In this section the adolescent measures most fully developed and described in the literature will be reviewed. Only measures specifically designed for adolescents and using adolescents as the normative group are included. Measures with an open-ended response format requiring content analysis or classification of responses by trained raters are excluded, as the focus is on measures suitable for use in an applied or clinical setting. Information on measures previously discussed under general headings is summarised.

Measures are briefly evaluated on the basis of psychometric properties, and coverage of the three dimensions of coping previously identified; problem or emotion-focused, behavioural-cognitive and avoidance-attention. The inclusion of the positive and negative aspects of seeking social support is also examined. For each measure, the items comprising each sub-scale were inspected and classified by this author (see Table 3). No such classification was done by the authors of the measures.

The Life Events and Coping Inventory (LECI) (Dise-Lewis, 1988)

This is a dual measure of stress and coping with 42 coping items to be related to an unspecified stressor and a 9-point Likert response format for frequency. The normative group were aged 11-14 years. Items were developed from responses to open-ended questions. Factor analysis produced five factors with satisfactory Chronbach Alpha coefficients.

Dise-Lewis labelled the factors *Aggression, Stress-recognition, Distraction, Self-destruction* and *Endurance. Stress-recognition, Distraction* and *Endurance* in particular, lack face-validity, have very similar items in different factors, and are difficult to relate to classifications used in other measures. Inspection of the items shows very few which could be classified as problem-focused, or cognitive, or attention strategies (see Table 3). This probably explains the unusual factor structure and limits the value of the measure, especially for studying effective coping. Increasing the sampling validity of the items, by adding some conceptually-based items and considering the face validity and logical structure of factors would be likely to improve the measure. The use of a nine-point response scale is also unusual and is not justified by the author. It appears unnecessarily complex, especially for the age-group.

TABLE 3

COMPARISON OF ADOLESCENT COPING MEASURES

			Problem or Emotion Focus % of Sub-scales				Behavioural or Cognitive % of Sub-scales				Attention or Avoidance % of Sub-scales				Social Support % of Sub-scales		
MEASURE	No. of Items	No. of Sub-Scales	Prob-lem	Emo-tion	Both	Unclear or Neither	Behav-ioural	Cog-nitive	Both	Unclear or Neither	Atten-tion	Avoid-ance	Both		Posi-tive	Nega-tive	
LECI	42	5		40	60		20		80			40	60		40		
KIDCOPE	10	10	20	50	20	10	30	60	10		50	50			10		
A-COPE	54	12	8	67	25		42	17	42		50	50			33		
ACS (long)	79	18	33	56	6	6	44	33	17	6	56	44			22	6	
ACS (short)	18	3	33		33	33	67		33		33	33	33		67		

Kidcope (Spirito, Stark and Williams, 1988)

This is a measure of only 10 items selected on conceptual grounds to cover 10 categories of coping. The authors wanted a brief measure for clinical and repeated use, especially with one stressor or a small range of stressors. The response format consists of 4-point and 5-point Likert scales for frequency and efficacy respectively. The normative groups were adolescents aged 13-17. As the authors note "The psychometric properties of such a checklist are ..... problematic" (p. 558), however the validity and reliability studies, as previously discussed, indicate that the measure has promise for the type of use intended.

As each sub-scale is only one item, classification on the dimensions of problem or emotion focused, behavioural or cognitive, and attention or avoidance is straightforward. The ratio of emotion-focused to problem-focused (see Table 3) seems unbalanced, perhaps due to the authors' emphasis on health-related stressors where the adolescent has limited control. For more reliable and deeper study of the coping strategies used by an individual or a group, a larger sample of strategies would be required. The inclusion of an efficacy measure is an advantage of Kidcope.

The Adolescent Coping Orientation for Problem Experiences (A-COPE) (Patterson and McCubbin, 1987)

This is a 54 item measure developed from a larger number of "coping behaviour items" elicited from adolescents in structured interviews. The authors were content that the original set of items satisfactorily represented the theoretical classifications of coping used by Maddi (1981) and Pearlin and Schooler (1978). Factor analyses were conducted on the responses of a

normative group of High School students, using the response format of a 5-point Likert scale for frequency. Patterson and McCubbin then deleted items rarely used, with minimal variance or loading insufficiently on any factor.

Of the twelve factors, or "coping patterns", all but two have alpha reliabilities above .65, and item loadings are also generally satisfactory with only five falling below .40. Analysis of the factors shows a strong emphasis on emotion-focused and behavioural coping strategies. This is perhaps due to the stated focus of the open-ended data gathering, and to the choice of coping classifications which do not separate the emotion-focused from problem-focused nor the behavioural-cognitive dimension. The avoidance-attention dimension is evenly covered. The positive aspects of seeking social support are strongly present in this measure, but negative aspects are not identified.

The Adolescent Coping Scale (ACS) (Frydenberg and Lewis, 1993)

This is a 79 item measure designed for use with unspecified stressors (General Scale) or an identified stressor (Specific Scale) and the response format is a 5-point Likert scale for frequency. The items were developed from both empirical and conceptual research, tested for language and reliability, and evaluated for conceptual clarity. Normative groups were Australian adolescents aged between 12 and 18 years.

Eighteen factors were identified and shown to be sufficiently distinct; All but two factors have satisfactory reliability as discussed earlier. The face-validity and logical structure of the factors, or sub-scales, relate well to the conceptual classification. As seen in Table 3 there is a balance between problem and emotion focused sub-scales, with only one scale including both

types of strategies (*Seek Social Support*). Both behavioural and cognitive strategies are well covered and the majority of sub-scales are clearly one of these. Sub-scales are also fairly evenly divided on the attention-avoidance dimension.

Unique features of the ACS in this company are the inclusion of a non-coping sub-scale (which is neither problem nor emotion focused, behavioural nor cognitive) and the inclusion of a sub-scale (*Seek to Belong*) tapping the negative aspects of social support.

Factor analysis of the 18 factors led to the identification of three super-ordinate "styles"; *Solving the Problem, Reference to Others* and *Non-Productive Coping.* Research on the styles is in an early stage.

The length of the measure is recognised as a handicap, and a Short Form comprising the most representative item from each factor is also available. These 18 items are combined into three sub-scales which are equivalent to the "styles" just mentioned. Statistical analyses comparing the short and long forms, and investigating the factor structure of the short form indicate its value as a reliable measure when time is a limiting factor. However, Table 3 shows that the separation of coping dimensions is greatly reduced and the tapping of the negative aspects of social support has been lost.

Summary

From this review, the Adolescent Coping Scale emerges as a measure with comparatively strong psychometric properties, and a comprehensive conceptual and empirical basis which provides a broad sampling of the dimensions of coping. While the number of strategies seems large, they are particularly discrete. As McCrae (1984) concluded from his research with

adults, "no list of coping responses can be claimed to be complete" (p. 923) and "although it would be more convenient for researchers if a small number of strategies could be identified, these data suggest that a large number may be more useful" (p. 927). The development of the Short Form offers a viable alternative which retains many of the features of the Long Form.

Developing Adolescents' Coping Efficacy

Much of the adolescent coping literature concludes with comments such as "the results do suggest that a reliance on problem-solving coping is beneficial, and that perhaps instruction in this coping strategy should be included in preventive programs in the schools" (Glyshaw *et al*, 1989, p. 621). Similarly, there are a number of programmes which aim to teach adolescents such techniques as relaxation, assertiveness, and cognitive analysis (eg. the Lifeskills programmes, Hopson and Scally, 1979, 1982).

The general principles of coping efficacy suggest that for maximum benefit a programme should combine at least four essential elements:

1. Research evidence about the efficacy of coping strategies for relevant normative or non-normative adolescent stressors.
2. A reliable and valid assessment of the adolescent participants' use of coping strategies.
3. Research evidence about the many factors associated with coping.
4. A training procedure or set of procedures shown to be effective in increasing or decreasing particular coping strategies, or related factors.

Lack of consensus about the classification of coping has limited the generalisability of research findings, however there are enough trends, as discussed earlier to provide some starting points for teaching about efficacy. Recent measures such as A-COPE, Kidcope and the Adolescent Coping Scale, could be used with some confidence. More research is required which links coping with the many related factors, and although researched training programmes exist, they are not linked to the coping research.

An example of a promising training programme is the "Cognitive Stress-Reduction Intervention Programme for Adolescents" of Hains and Szyjakowski (1990) which is based on the "stress-innoculation" programme of Meichenbaum (Cameron and Meichenbaum, 1982). The "thought-listing task" to an imagined stressful situation could be considered as a measure of cognitive coping strategies. Other measures given before and after the comprehensive training (group and individual sessions) were of anxiety, anger, self-esteem and depression. All measures showed significant improvements after training and at follow-up after 10 weeks, although the training was not directly related to the results of the coping measure.

This programme could be recommended for adolescents who had shown a deficit in the area of cognitive coping when combined with evidence that cognitive coping strategies were effective for managing the stressors concerning the adolescents . Other adolescents might benefit much more from training in other coping skills or in training to reduce the use of coping strategies shown to be ineffective or harmful.

The approach being suggested here is supported by the case study of a hospitalised adolescent using the stress and coping theories of Lazarus. Stevens (1988) concluded:

> The process nature of stress and coping was highlighted in the unfolding story of Juan's hospitalization. Different threats were encountered at differing points during his hospitalization. Strategies for managing these threats were directly related to the nature of the stressful encounters: situations perceived as unchangeable elicited emotion-focused coping, and situations in which a direct instrumental action might alter the stressor evoked problem-focused strategies. (p. 58).

From a theoretical viewpoint, Peterson and Spiga (1982) recommend:

> ...assessment of developmental stress, situational stress, and individual stress, together with evaluation of coping resources in the individual and the environment. In this way, we might be able to identify who most needs intervention and how that intervention should be provided. The ultimate solution to stress at adolescence is adulthood, but many adult, as well as adolescent, years would be improved with effective intervention during adolescence. (p. 525)

RESEARCH DIRECTIONS

This research and literature review has given the areas of stress and coping a broad-brush treatment, followed by more detailed attention to stress and coping in adolescence, with particular emphasis on measures of adolescent coping. Discussion of research directions will follow this narrowing of focus and examine ways in which future research could broaden and deepen our knowledge about how adolescents cope with stress.

An Australian context is envisaged, but the principles would apply to other settings.

The literature shows general agreement about the nature of coping and the importance of coping as part of adjustment to the stressors of life. However a major problem with coping research has been lack of consensus about a classification of strategies. Measures of coping have been designed around a variety of theoretical or empirical classifications. Reviewers must sift through research findings seeking those where the coping strategies measured are a "good enough" match to allow comparison. The low psychometric standards of most measures, and variations in the classification of items (see Table 1) compound the difficulties.

A basic requirement, therefore, for research into adolescent coping is the development of reliable, valid, well-constructed measures standardised on adolescent normative groups. It seems that using a measure developed within the relevant culture or country would be most likely to sample the coping responses of the population adequately, and to minimise differences in the interpretation of items. In Australia, the Adolescent Coping Scale of Frydenberg and Lewis (1993) is a very promising measure.

As such measures become available, it would be possible to plan co-ordinated research to build a picture of adolescent coping, including how coping relates to environmental and intra-personal factors and to outcomes. The application of research findings to programmes and interventions designed to develop the coping efficacy of adolescents would be a further research direction.

Given the large number of factors believed to be associated with coping, the scope of such research is daunting. The advantage of co-ordinated research using one good measure is that studies could be designed to test one, or a few, specific hypotheses. This approach would give findings more likely to be reliable and meaningful than those of studies comparing a large number of factors without clear research questions.

One set of research questions could seek to test hypothesised relationships between the reported use of coping strategies and a variety of pre-existing factors within the person; psychological, physical, cognitive or experiential. Another set could seek relationships between coping strategies and a variety of environmental factors; family, community, peer and school or work.

A further set of research questions could seek relationships between coping strategies and outcome variables; psychological or behavioural. Questions about the efficacy of different strategies, or types of strategies, with different stressors and about positive and negative outcomes would also come into this group. In all these areas there have been individual studies, using various measures, which provide excellent hypotheses awaiting re-examination and integration with other findings.

Another important research direction would seek validation of self-report measures of coping by studying what adolescents actually do and how this relates to what they say they do. The internal, unobservable nature of many coping strategies makes such research difficult. The use of behavioural ratings by adults or peers close to the adolescent, case-studies, and diary-keeping methods all seem promising ways to provide the required information. As Stern and Zevon (1990) note, the study of adolescent

coping "in the context of naturally occurring stressors" (p. 300) is an important part of coping research, which increases the validity of findings.

Longitudinal studies would be another valuable research direction. Studies of adolescent coping through the entire process of responding to a stressful event from initial appraisal to evaluation of the outcome would provide much useful information. Prospective longitudinal studies such as that of Wills (1986), where outcomes are separated in time from coping measures, are another area where further research would be valuable.

Such a comprehensive body of research findings would provide a sound basis for work with adolescents in applied settings. Factors found to place adolescents "at risk" could be identified, and combined with findings about the efficacy of coping strategies to provide guidelines for programmes, counselling, or interventions for individuals, groups or communities. Such programmes could themselves be incorporated into the co-ordinated research, with the coping measure included in pre-programme assessment, the results used to help programme planning, and the measure used again as part of programme evaluation.

While refining the Adolescent Coping Scale and since its publication in a research edition (1993), Frydenberg and Lewis have carried out a number of studies (1990-1993). Perhaps this is the beginning of a research programme like that outlined above. The study reported here was planned as a contribution to the data-base from a different setting, and to provide some indication of the predictive validity of the measure. The research questions are examples of seeking relationships between reported use of coping strategies and outcome variables. Behavioural ratings by parents and teachers are incorporated into the research design and a naturally occurring

stressor is used to maximise validity. Most importantly, however, the research was planned with the goal of obtaining information which would be of practical use for adults who are close to adolescents, either in professional or personal roles, and therefore to benefit adolescents themselves as they face the challenges of this developmental stage of their lives.

CHAPTER 3: METHOD

RESEARCH QUESTIONS

Main Question

Do self-reports of coping styles predict adolescents who will report significant anxiety when facing a stressful event?

Subsidiary Questions

1. Do self-reports of coping styles predict the self-confidence with which adolescents will face a stressful event?

2. Do self-reports of coping styles relate to the observed adjustment levels of adolescents facing a stressful event?

3. Can self-reports of coping styles provide information of value for planning programmes to develop coping efficacy?

PARTICIPANTS

Students in their final year of secondary school at an independent college for girls were selected for this research. Their age range at the beginning of the year was 16-18 years. Because it is a fee-paying school, families are mostly above the average in financial and educational levels. Approximately one-third of the students are boarders at the school, coming from families in rural areas or from overseas. About 90% of the student population are Caucasian; 10% are Asian, mainly Chinese, Malaysian or Indian.

Of 151 students enrolled, 141 students completed the first round of measures in March. Complete results were obtained on 107 students, with a further 29 completing all student measures and teacher ratings, missing only the parent rating measures.

INSTRUMENTS

Measure of Coping

The Adolescent Coping Scale (Frydenberg and Lewis, 1993) has been described in Chapter 2. The Scale was in press at the time of the study, and used by permission of the authors. Table 4 shows the 18 sub-scales, the number of items in each, and the reliability data reported by Frydenberg and Lewis (1993). Table 5 shows the three styles, which the measure also identifies, and their relationship to the sub-scales, or coping strategies.

The review of available measures of adolescent coping in Chapter 2 shows that the ACS stands up extremely well on psychometric criteria of reliability and validity. It is based on clear conceptual analysis and extensive empirical research carried out with Australian adolescents.

The ACS consists of 79 items, each a description of a coping response, to be answered on a 5-point Likert Scale (Appendix 1). There are two forms of the Scale. The General Form asks respondents to indicate what they do to cope with "concerns or worries" in general, the Specific Form asks respondents to identify a concern in an area specified by the person administering the Scale, or in an area selected by the respondent.

TABLE 4: THE ADOLESCENT COPING SCALE:
DESCRIPTIVE STATISTICS (GENERAL FORM) (N = 643)

Scale	k	$\bar{X}$	SD	Alpha	r_{xx}
1. Seek Social Support	5	14.2	4.4	.80	.81
2. Focus on Solving the Problem	5	16.2	3.7	.72	.71
3. Work Hard and Achieve	5	17.9	3.5	.68	.66
4. Worry	5	15.1	4.3	.73	.77
5. Invest in Close Friends	5	15.4	4.6	.74	.84
6. Seek to Belong	5	15.2	3.8	.67	.75
7. Wishful Thinking	5	15.5	4.3	.67	.74
8. Not Coping	5	10.8	3.4	.58	.69
9. Tension Reduction	5	11.6	4.4	.69	.75
10. Social Action	4	6.8	2.9	.70	.50
11. Ignore the Problem	4	9.6	3.2	.68	.57
12. Self-Blame	4	10.9	3.6	.76	.74
13. Keep to Self	4	11.3	3.5	.70	.49
14. Seek Spiritual Support	4	7.5	4.1	.85	.81
15. Focus on the Positive	4	12.2	3.3	.68	.58
16. Seek Professional Help	4	6.9	3.4	.84	.72
17. Seek Relaxing Diversions	3	11.4	2.4	.54	.44
18. Physical Recreation	3	9.6	2.7	.64	.60
			Median	.70	.72
			Mean	.71	.69

Note: Data from Frydenberg and Lewis (1993).

TABLE 5: THE ADOLESCENT COPING SCALE: STYLES

Style	Solve the Problem	Non-productive Coping	Reference to Others
Sub-scales	Social Support	Worry	Social Support
	Solve Problems	Belong	Spiritual Support
	Phys. Recreation	Wishful Thinking	Professional Help
	Relax	Not-cope	Social Action
	Friends	Ignore	
	Belong	Tension Reduction	
	Work	Keep to Self	
	Focus on Positive	Self Blame	

Measures of Anxiety and Self-confidence

The State-Trait Anxiety Inventory (STAI, Form Y) was developed by Speilberger (1983) as a revision of an earlier scale. It is a self-report questionnaire with 20 items for State Anxiety and 40 for Trait Anxiety, with response choices of: not at all, somewhat, moderately so and very much so. The STAI has been widely used in research (eg. Hains and Szyjakowski, 1990; Houston, 1982) and was selected as an adequately valid and reliable measure, not threatening to students and quick to administer. Only the State Anxiety measure was used in this study.

The Competitive State Anxiety Inventory (CSAI-2) is an adaptation by Robert Kirkby (Personal Communication, September 1991) of a questionnaire designed to measure anxiety before an athletic competition (Martens *et al*, 1990). The original inventory consists of 27 items which are statements about physical symptoms, thoughts or feelings, with response choices of: not at all, somewhat, moderately so, very much so. There are three sub-scales, each of nine items. These are: Cognitive State Anxiety, Somatic State Anxiety and State Self-confidence. Kirkby's adaptation is headed "Pre-exam Inventory" and substitutes "exam" for "competition" in the instructions and in two items (Appendix 2).

Behavioural Ratings

The Child and Adolescent Adjustment Profile (CAAP) was developed by Ellsworth (1981) as a measure suitable to obtain information about the observed adjustment of children and adolescents within the age-range 3-19. The scale is designed to be completed by parents, teachers, counsellors, or other adults in the child's environment. It consists of 20 behavioural

statements to be rated as observed during the last month: never, rarely, sometimes or often. Thus the scale can be completed quite quickly, and is not an overly demanding task to request of parents or school staff.

The CAAP scale provides adjustment scores in five areas labelled Peer Relations, Dependency, Hostility, Productivity and Withdrawal. For this research, four adaptations were made to the wording to increase the face validity of the scale for the raters. The name was abbreviated to Adolescent Rating Scale, he/she was changed to she, "youngster" was changed to "student", and the item "invited others to play" was changed to "invited others to social activities".

PROCEDURE

Questionnaire Administration

All measures were administered to the students in classrooms, in regular school time, with the permission of the Principal. The researcher is a psychologist at the school, known to all students. Teachers who helped with administration were requested to use the instructions provided verbatim.

The Adolescent Coping Scale was administered in March, a time believed to be early enough in the year to contrast with the second testing, but late enough for the students to be established as Year 12 students. Both forms were administered in one sitting. Instructions for the Specific Form were "identify a concern related to your achievement this year as a Year 12 student. Think of something that concerns you about exams, TEE [external exam] results, study, learning, a particular subject, getting into University".

The measures of anxiety were administered in November, two days before the students left school to prepare for, and take, their external exam. Students absent on the day were sent a copy of the questionnaires to complete and return. Anxiety and Self-confidence measures were obtained for 136 students. The State Trait Anxiety Inventory and the Competitive State Anxiety Inventory were administered in one sitting in that order.

Behavioural Rating Collection

Behavioural ratings were obtained on The Child and Adolescent Adjustment Profile from teachers and parents. The teachers were the six Year 12 form teachers, who saw the students at least three times per week for a 20 minute period, and kept up-to-date with their achievement and concerns or problems. Parents of day students were requested to help with research on "stresses faced by adolescents and how best to help them learn positive ways of coping". For boarding students, ratings were requested from Boarding House staff in a "loco parentis" role. These ratings were requested immediately after the external exam.

School staff completed all their questionnaires. The response rate from parents was 78% after reminders and duplicate questionnaires were sent.

Identification of Sub-groups

The three styles derived from the ACS sub-scales (see Table 5) were used to identify sub-groups of students.

Frydenberg and Lewis (1991) describe the three coping styles as:

Solve the Problem: "represents a style of coping characterised by working at solving the problem while remaining optimistic, fit, relaxed and socially connected".

Non-Productive coping: "primarily reflects a combination of what may be termed non-productive coping and avoidance strategies which are empirically associated with an inability to cope".

Reference to Others: "is characterised by reference to others whether peers, professionals or deities". (p. 6)

Review of the coping research literature, especially in coping efficacy, suggests that the strategies included in *Solve the Problem* are those most likely to be effective in stressful situations. The strategies which make up the style *Non-productive Coping* are least likely to be effective and may have a deleterious effect. The factor of social support represented by the style *Reference to others* can have either positive or negative implications which are not separated in this Style. The identification of sub groups was therefore planned without using the style *Reference to Others*. The Specific Scale (Achievement) was used as it most closely related to the identified stressor which was the external Year 12 exam.

As a first step, cut-off scores for the highest and lowest quartiles of the frequency distributions for each coping style were determined. Each student was then classified as High, Medium or Low for each style. Three sub-groups were then identified. The "At-risk" sub-group had scores which were High or Medium on *Non-productive Coping* and Low or Medium on *Solve the Problem,* but not Medium on both. The "Effective Copers" sub-group had scores which were Low or Medium on *Non-productive coping* and High or Medium on *Solve the Problem.*

The "A-typical" sub-group were those who scored High on both styles or Low on both styles. These results were not included in the analysis of results. Table 6 summarises this classification.

TABLE 6: CLASSIFICATION OF SUB-GROUPS

	COPING STYLE		
Sub-Group	*Non-Productive*	*Solve the Problem*	Exclusion Factor
"At-risk"	High or Medium	Medium or Low	not both Medium
"Effective Copers"	Medium or Low	High or Medium	-
"A-typical"	High or Low	High or Low	not one High, one Low

Notes: High = top quartile of frequency distribution
Medium = middle half of frequency distribution
Low = lowest quartile of frequency distribution

EITHICAL CONSIDERATIONS

This study was carried out within the counselling department of the school, where standard recommended procedures for confidentiality were followed. Before data processing, each student's name was replaced by a code number and all participants were assured of this procedure.

The student participants in the study all left school soon after the final data collection. It was therefore not possible to provide feedback or to follow up results with them. They were told that the staff of the counselling department were available to discuss any questions or concerns they might have. The researcher also explained to the students that their participation would provide information which could benefit future Year 12 students.

CHAPTER 4: RESULTS

WHOLE GROUP RESULTS

The results of all measures used with the group of Year 12 students are detailed here, and compared with normative information on the measures.

Coping Measure - General Form

Results for the group on the Adolescent Coping Scale (General Form) are given in Table 7. The group profile is shown in Appendix 3, using the form provided in the ACS. The most favoured and least favoured coping strategies reported by these students, and their relative frequency, can be seen. *Relax, Solve the Problem, Social Support* and *Work* were the strategioes used most, while*Social Action, Spiritual Help, Professional Help* and *Ignore* were the strategies used least.

In Table 8, the group's results are compared with data from Frydenberg and Lewis (in press) which is the most comprehensive normative data available on this new measure. As the use of coping strategies has been shown to vary with gender and age, comparisons are made with female students across Years 7 to 12, with male and female students in Years 11 and 12, and with all students in Years 7 to 12. Results on the General Scale are used, as no normative data are available for the Specific Scale (Achievement).

TABLE 7: ADOLESCENT COPING SCALE RESULTS (GENERAL FORM)
N = 141

Sub-scale	Number of Items	Mean Score	S.D.	Mean Adjusted Score [a]	Rank
1. Social Support	5	17.3	4.75	69.2	3.0
2. Solving Problem	5	18.0	2.86	72.0	2.0
3. Work	5	16.5	2.27	66.0	4.0
4. Worry	5	15.8	3.97	66.3	5.0
5. Friends	5	14.9	3.84	59.6	9.0
6. Belong	5	14.7	3.27	58.8	10.5
7. Wishful Thinking	5	14.7	4.03	58.8	10..5
8. Not Cope	5	10.6	2.86	42.4	14.0
9. Tension Reduction	5	12.8	3.34	51..2	13.0
10. Social Action	4	7.2	2.47	36.0	18.0
11. Ignore Problem	4	8.5	2.88	40.5	15.0
12. Self-Blame	4	12.2	3.23	61.0	8.0
13. Keep to Self	4	10.8	3.42	54.0	12.0
14. Spiritual Support	4	7.3	3.87	36.5	17.0
15. Focus on Positive	4	12.6	2.71	63.0	6.0
16. Professional Help	4	7.7	3.15	38.5	16.0
17. Relax	3	11.1	2.12	77.7	1.0
18. Physical Recreation	3	8.9	2.48	62.3	7.0

Style	Number of Items	Mean	S.D.	Average Item Mean
Solve the Problem	35	114.1	13.45	3.26
Non Productive	37	100.1	16.11	2.71
Reference to Others	17	39.5	10.07	2.32

Notes: [a]using formula of Frydenberg and Lewis (1993, p. 27) to adjust for differing numbers of items

TABLE 8: ADOLESCENT COPING SCALE: COMPARATIVE RESULTS

(GENERAL FORM)

Sub-scale	Mean Adjusted Score				Rank			
	N= 141 Year 12 Female	N = 673 Yrs 7-12 Male & Female	N = 343 Yrs 7-12 Female	N = 87 Yrs 11-12 Male & Female	Year 12 Female	Yrs 7-12 Male & Female	Yrs 7-12 Female	Yrs 11-12 Male & Female
1. Social Support	69.2	56.8	61.6	59.6	3	10	8	9
2. Solving Problem	72.0	64.8	65.6	66.8	2	4	3	3
3. Work	66.0	71.6	70.8	68.4	4	2	2	2
4. Worry	63.2	60.4	61.6	59.2	5	9	8	10
5. Friends	59.6	61.6	64.0	62.0	9	5	5	4
6. Belong	58.8	60.8	62.0	60.4	10.5	8	6	8
7. Wishful Thinking	58.8	62.0	64.4	61.2	10.5	6	4	5
8. Not Cope	42.4	43.2	45.2	45.2	14	15	15	15
9. Tension Reduction	51.2	46.4	50.4	52.0	13	14	13	13
10. Social Action	36.0	34.0	33.0	30.0	18	18	18	18
11. Ignore Problem	40.5	48.0	46.5	50.5	15	13	14	14
12. Self-Blame	61.0	54.5	56.0	61.0	8	12	11	6
13. Keep to Self	54.0	56.5	55.0	58.5	12	11	12	11
14. Spiritual Support	36.5	37.5	39.5	35.5	17	16	16	16
15. Focus on Positive	63.0	61.0	61.0	57.0	6	7	10	12
16. Professional Help	38.5	34.5	33.5	33.0	16	17	17	17
17. Relax	77.7	79.8	79.1	80.5	1	1	1	1
18. Physical Recreation	62.3	67.2	61.6	60.9	7	3	8	7

Style	Mean Score				Average Item Mean			
Solve the Problem	114.2	112.2	113.3	110.9	3.26	3.2	3.24	3.17
Non-Productive	99.9	99.9	102.4	103.9	2.71	2.7	2.77	2.81
Reference to Others	39.5	35.4	36.6	34.6	2.32	2.1	2.15	2.04

Note: Results for Year 12 females are from the current study. All other data from Frydenberg and Lewis (in press)

TABLE 9: ADOLESCENT COPING SCAL⁻ ꜗ ESULTS (GENERAL FORM)
MOST AND LEAST USED STR GIES

	Current Study	Years 7 - 12 Male & Female	ars 7 - 12 Female	Years 11/12 Male & Female
Strategies Used Most	*Relax* *Solve Problem* *Social Support* *Work*	*Relax* *Work* *Phys Recreation* *Solve Problem*	*Relax* *Work* *Solve Problem* *Wish Thinking*	*Relax* *Work* *Solve Problem* *Friends*
Strategies Used Least	*Social Action* *Spiritual Help* *Professional Help* *Ignore*	*SocialAction* *Professional Help* *Spiritual Help* *Not Cope*	*Social Action* *Professional Help* *Spiritual Help* *Not Cope*	*Soc ialAction* *Professiona Help* *Spiritual Help* *Not Cope*

Note: data from Table 8

Strategies used most and least by the four groups are summarised in Table 9. There is considerable similarity across all groups in the four strategies used most, with *Relax, Work* and *Solve the Problem* used consistently frequently. *Social Support* is used more frequently by the Year 12 females compared with the other three groups.

Social Action, Seek Spiritual Support and *Seek Professional Support* are consistently the lowest ranking strategies for all groups, while *Ignore* and *Not Cope* also have very low rankings for all groups.

Results on the three coping styles are also similar across the groups, with the identical rank order of *Solving the Problem* first, then *Non-productive Coping,* and finally *Reference to Others.*

Coping Measure - Specific Form

The scores on the ACS Specific Scale are for a self-selected stressor in the area of academic achievement. The group's results are given in Table 10, and compared with results on the General Scale. The group profile is

TABLE 10: ADOLESCENT COPING SCALE RESULTS:
STRATEGIES AND STYLES (GENERAL AND SPECIFIC FORMS)
N = 141

	MEAN SCORE		MEAN ADJUSTED SCORE		RANK	
Strategy	General	Specific	General	Specific	General	Specific
1. Social Support	17.3	16.6	69.2	66.4	3	5
2. Solve Problem	18.0	17.7	72.0	70.8	2	2
3. Work	16.5	16.9	66.0	67.6	4	4
4. Worry	15.8	17.1	63.2	68.4	5	3
5. Friends	14.9	13.1	59.6	52.4	9	10
6. Belong	14.7	12.4	58.8	49.6	10.5	11
7. Wishful Thinking	14.7	14.0	58.8	56.0	10.5	9
8. Not Cope	10.6	9.2	42.4	36.8	14	16
9. Tension Reduction	12.8	12.2	51.2	48.8	13	13
10. Social Action	7.2	7.1	36.0	35.5	18	17
11. Ignore Problem	8.5	7.6	40.5	38.0	15	15
12. Self-Blame	12.2	11.9	61.0	59.5	8	6
13. Keep to Self	10.8	9.9	54.0	49.5	12	12
14. Spiritual Support	7.3	6.8	36.5	34.0	17	18
15. Focus on Positive	12.6	11.4	63.0	57.0	6	8
16. Professional Help	7.7	8.6	38.5	43.0	16	14
17. Relax	11.1	10.2	77.7	71.4	1	1
18. Physical Recreation	8.9	8.3	62.3	58.1	7	7

	MEAN SCORE		ADVERAGE ITEM MEAN	
Style	General	Specific	General	Specific
Solve the Problem	114.16**	106.86**	3.26	3.03
Non Productive	99.95**	94.59**	2.70	2.56
Ref'ce to Others	39.55	39.19	2.33	2.30

Note: ** Differences between means are significant, $p < .01$

given in Appendix 3. Looking at the top five strategies, *Relax, Solve Problem* and *Work* are in the same positions (Ranked 1, 2 and 4), with *Social Support* and *Worry* alternating ranks 3 and 5 for General and Achievement concerns. Considering the least used strategies, again the same five feature at the bottom of the list, with some interesting minor variations.

Results for the three Coping Styles again show the same rank order, but means for each style are higher for the General Scale than for the Specific Scale. Independent t-tests were conducted for each pair of means. For *Solve the Problem* and for *Non-Productive Coping*, the differences were significant well below the alpha level set at .05 (t values were 6.65 and 4.45 respectively). For *Reference to Others*, the difference was not significant.

Anxiety and Self-confidence Measures

Results for the Spielberger State Anxiety Measure and for Examination Anxiety and Self-confidence as measured by the CSAI-2 (Kirkby adaptation) are given in Table 11. In each case, the group mean was compared with the appropriate normative group using a one-sample t-test. All four t-values were significant below the alpha level set at .05. The standard deviations for experimental and normative groups were comparable for each measure.

The mean for the group on State Anxiety is significantly higher than the mean for Spielberger's normative group of female High School students across Grade levels. On the CSAI-2 measure of cognitive anxiety, the group's mean is almost one standard deviation above the mean for the normative group. On the CSAI-2 measure of somatic anxiety, the group

TABLE 11

ANXIETY AND SELF-CONFIDENCE RESULTS

		MEASURE			
		State Anxiety (STAIS) (a)	Cognitive Anxiety (CSAI-2) (b)	Somatic Anxiety (CSAI-2) (b)	Self Confidence (CSAI-2) (b)
Current Study (c)	Mean	46.31	26.58	18.30	18.06
	S.D.	12.95	6.07	5.94	4.98
Normative Group	Mean	40.54	21.89	21.48	16.46
	S.D.	12.8	5.29	5.49	4.62
	t-value	4.94**	8.65**	5.98**	3.6**

Notes:

(a) Normative data from Spielberger (1983) for American Female High School students, N = 222

(b) Normative data from R. Kirkby (personal communication, July 1993) for Australian Female High School students, N = 216.

(c) N = 125

** denotes $p < .01$

mean is significantly lower than the normative group, while on the Self-confidence measure, the group mean is significantly higher.

Pearson r correlations were computed for the three anxiety measures. The State Anxiety (STAI) correlated .629 with Cognitive Anxiety and .519 with Somatic anxiety as measured by the adapted CSAI-2. The Cognitive and Somatic sub-scales correlated .415 with each other.

Parent and Teacher Ratings

The results of the Child and Adolescent Adjustment Profile (CAAP) ratings by parents and teachers are shown in Table 12. In Ellsworth's (1981) norms, t-scores are calculated separately for parents and teachers. Scores for Peer Relations and Productivity are in the reverse direction of scores for Dependency, Hostility and Withdrawal.

The means of parent ratings were in the Average adjustment range for each of the five areas. Means for peer relationships and withdrawn behaviour were lowest, while Dependency (ie. independence) and Productivity were highest.

The mean teacher ratings were also all in the Average adjustment range. The means for Dependency, Peer Relations, Withdrawal and Productivity were all quite high, with only the Hostility mean in the narrow mid-range.

Differences between the mean ratings of parents and teachers were minimal. The t-scores for Dependency, Productivity and Hostility were almost identical, while the teachers tended to rate Peer Relations and Withdrawal more towards a "Good" level of Adjustment.

TABLE 12

CHILD AND ADOLESCENT ADJUSTMENT PROFILE RESULTS

	PARENT RATINGS (a)				TEACHER RATINGS (b)			
Dimension	Mean (c)	S.D.	t-score (d)	Adjustment level (e)	Mean (c)	S.D.	t-Score (d)	Adjustment level (e)
Peer Relations	11.8	2.93	43	Low Average	12.2	2.93	55	High Average
Dependency	8.3	3.11	56	High Average	7.5	2.35	55	High Average
Hostility	8.4	3.04	54	Average	6.7	4.36	53	Average
Productivity	13.9	2.66	57	High Average	13.11	2.51	58	High Average
Withdrawn	8.7	2.74	44	Low Average	7.4	2.37	58	High Average

Notes:

(a) N = 107. Includes ratings by Boarding House staff for Boarding students

(b) N = 126

(c) Range = 4-16

(d) Range = 20-70

(d) & (e) Normative data from Ellsworth (1981)

SUB-GROUP RESULTS

Table 13 shows the results of the "At-risk" and "Effective Copers" sub-groups on the anxiety and self-confidence measures. As noted previously, not all students completed all measures, but the drop-out rates were not at a level deemed to affect the results. The "At-Risk" sub-group reduced from 37 to 30 for the Spielberger anxiety measure, and to 31 for the CSAI-2 (84%). The "Effective Copers" sub-group reduced from 80 to 71 and 72 (90%). The "A-typical" sub-group, whose results were not used in this analysis, reduced from 24 to 21 (87%).

Independent t-tests were computed for the mean scores of the two sub-groups on the measures of anxiety and self-confidence. Assumptions of normality and homogeneity of variance were met and the alpha level was set at .05. For all three anxiety measures, the "At-risk" sub-group showed a higher level than the "Effective Copers" sub-group. For State anxiety the means were 51.50 and 44.04. This was a significant difference, $t(99) = 2.64$, $p < .01$. For Somatic Anxiety, the means were 21.13 and 16.83, also a significant difference, $t(101) = 3.5$, $p < .01$. The means for Cognitive Anxiety were 27.94 and 26.07. This difference was not significant.

The Self-confidence measure gave means of 16.16 for the "At-risk" group, and 19.12 for the "Effective Copers" group, indicating significantly higher self-confidence for the "Effective Copers" group, $t(101) = 2.82$, $p < .01$.

The results for the two sub-groups on the parent and teacher ratings were compared by the same statistical method. There were no significant differences between the means of the "At-risk" and "Effective Copers" sub-groups on any of the ten rating categories.

TABLE 13
SUB-GROUP RESULTS ON ANXIETY AND SELF-CONFIDENCE

Sub-group		MEASURE			
		State Anxiety (STAIS)	Cognitive Anxiety (CSAI-2)	Somatic Anxiety (CSAI-2)	Self Confidence (CSAI-2)
"At-risk" (a) N = 30 (c) N = 31	Mean	51.50 (a)	27.94 (c)	21.13 (c)	16.16 (c)
	S.D.	12.81	7.74	7.42	4.84
"Effective Copers" (b) N = 71 (d) N = 72	Mean	44.04 (b)	26.07 (d)	16.83 (d)	19.12 (d)
	S.D.	13.07	5.41	4.81	5.03
	t-value	2.64**	1.40	3.50**	2.83**

** denotes $p < .01$

The "A-typical" sub-group is really two sub-groups characterised by consistently high or low response-rates on the ACS, which prevents comparison of their coping styles. Appendix 4 summarises their results on the three coping styles, compared with the group as a whole. Also shown in the Appendix is a summary of the "A-typical" sub-groups' responses to the Anxiety and Self-confidence measures. Small numbers, over-lapping groups and differences in standard deviations prevent meaningful statistical analysis. However there appears to be a consistent trend for the "High" and "Low" responders to respond in a similar fashion to the three Anxiety measures.

CHAPTER 5: DISCUSSION

COPING, ANXIETY AND SELF-CONFIDENCE RELATIONSHIPS

The main research question for this study asked whether the Adolescent Coping Scale could be used to predict students who would later report high levels of anxiety when facing a stressful event. The data indicate a strong relationship between the kinds of coping strategies reported and later reported levels of anxiety and self-confidence. Within a population reporting very high levels of cognitive and state anxiety, those reporting that they emphasised problem-solving coping strategies were less anxious and more self-confident shortly before taking an external examination than those emphasising non-productive and avoidance coping strategies.

These findings were consistent across two different measures, including three Anxiety scales and a Self-confidence scale. On only one anxiety scale, Cognitive Anxiety, was the difference between the sub-groups not statistically significant, and there the very high population mean would have created a ceiling effect. The eight-month time difference between the two data collections reduces the likelihood of the measures being confounded.

The students in this study were all female and from an a-typical school. Comparisons were made between their results on the ACS and the larger and more representative samples of Frydenberg and Lewis (in press), so that the relevance of the study to a wider population could be estimated. Tables 9 and 10 show comparative results for the current study and three other adolescent populations. Three of the four most-used and least-used strategies are identical for all four groups. Results on the coping styles,

where strategies are combined, are also comparable across the groupings. Thus it can be concluded that implications drawn from this study are likely to apply to the general population of Australian Senior High School students.

COPING AND BEHAVIOURAL RATINGS

The behavioural ratings by parents and teachers on the dimensions of the Child and Adolescent Adjustment Scale did not differentiate between the "At-risk" and the "Effective Copers". All mean ratings for all dimensions were in the Average Adjustment range. So, according to this measure, neither parents nor teachers observed behavioural signals in students whose self-reports showed some inadequacies in coping and very high levels of anxiety before their external examination.

The parents of the two student sub-groups were, of course, two different groups of people and may have had only a limited basis for comparison when making their ratings. However, the four Boarding House staff who made the parent ratings for approximately one third of the students and the six form-teachers who made the teacher ratings would be expected to have appropriate informal normative standards.

The implications of these findings could be that adolescents disguise their anxieties from significant adults in their lives, or that the adults cannot or do not wish to see the signs. However doubts about the CAAP Scale limit the conclusions which can be drawn. These doubts are discussed below.

GROUP PROFILE

As the Adolescent Coping Scale is a new measure, it is of interest to see what descriptive information it can provide about a group of students, and what implications can be drawn.

For general stressors, these Year 12 female students report the most frequent use of a range of strategies matching those which research indicates are likely to be effective. They attend to both the problem and the accompanying emotions with cognitive and behavioural methods, and make use of social support in a positive manner. Their use of emotion focused, avoidance-oriented strategies is not high, with *Worry* and *Self-blame* the avoidance strategies used most. They indicate little perceived need for professional or spiritual help. Some research has shown *Wishful Thinking* to be used frequently by females; a finding not replicated here.

The pattern of coping strategies for a specific stressor related to academic achievement is very similar to that for general stressors, the main difference being that *Worry* is used more and *Social Support* is used less for the academic concern. Also, as shown in Table 10, the total scores, indicating frequency of strategy use, are significantly lower for the Specific Scale. This may be due to the relatively low level of control students have over an external examination, as well as the limitation of scope expected by specifying the type of stressor.

The anxiety and self-confidence measures provide profile information about the group of students at a particular time of stress (Table 11). The Cognitive Anxiety scale of the CSAI-2 and the State Anxiety Scale (STAIS), which mostly taps cognitive aspects of anxiety, indicate very high levels of

cognitive anxiety. Despite this, the general level of self-confidence was high and somatic symptoms of anxiety were reported less than is often found in a female group (eg. Siddique and D'arcy, 1984. There was no evidence that parents or teachers were aware of the high anxiety levels, but the question was not asked directly.

In summary, the group of students report making frequent use of a range of effective coping strategies. *Worry* and *Self-blame* were the highest used of the less-effective strategies. When a challenging academic-stressor is imminent, the group tends to respond with high levels of cognitive anxiety, while maintaining self-confidence and reporting a low level of somatic anxiety.

CONSIDERATION OF MEASURES

The study is a first attempt to investigate the predictive validity of the Adolescent Coping Scale. The finding that the two sub-groups, identified by their ACS results, did differ in the predicted direction on anxiety and self-confidence when stressed provides support for the Scale's validity. An evaluation of the ACS compared with other adolescent coping measures, as well as consideration of cultural and language factors, suggests the measure is particularly appropriate for the investigation of Australian adolescent coping.

One problem with the ACS, as shown in this study, is its susceptibility to the "yea-saying" and "nay-saying" response sets. The length of the measure, and the need for all items to be uni-directional on a coping measure, probably exacerbate this problem, which is a potential one for all questionnaires. It is a concern that these respondents made up 12% of the

total group, and although some discrimination is possible on the 18 strategies, it was not possible to interpret their results on the three styles.

The State-Trait Anxiety Inventory of Spielberger is a well-validated measure while the Kirkby adaptation of the CSAI-2 to a pre-examination inventory is a recently developed measure which to date has had only limited use as a research instrument. The correlations of the Cognitive Anxiety and Somatic Anxiety sub-scales with the State Anxiety (STAIS) were respectively .629 and .519, suggesting the new measure has reasonable validity, while providing a useful distinction between the two kinds of anxiety focus. The inclusion of the Self-confidence sub-scale gives the measure a more positive appearance and variety of item, which may increase its appeal and face-validity to respondents. The measure appears worthy of further study to establish its usefulness.

A more detailed examination of the CAAP Scale than was done before the study, led to the identification of inadequacies in the measure and the belief that it was not an appropriate choice. Its inadequacies relate to the inclusion in the normative group of a high proportion of children and adolescents referred to a mental health clinic, or on probation from a children's court. This limits the likelihood that the Scale would discriminate satisfactorily within a normal population. Another important factor influencing suitability was that the students in this study were near the upper limit of the age-group specified in the Scale, which would also limit discrimination.

LIMITATIONS OF THE STUDY

The study is of one group of adolescents, all girls and from an a-typical school. This was originally considered a limitation, but was balanced by the advantage of the opportunity to obtain repeated measures and high participation rates. It was also a goal of the study to investigate the validity of the ACS in an applied setting which made the use of a one-school population appropriate. The comparison of the findings with normative data indicated that they could be applied to a wider population with some confidence.

A major limitation of the study was the use of the CAAP scale which close examination showed to be an inappropriate instrument. The implications drawn from the non-significant findings must therefore be limited to one of no evidence that parents or teachers were aware of the extremely high anxiety levels of the students. The inadequacy of the behavioural ratings measure thus led to the study relying heavily on self-report measures which have some well-known limitations.

The method used to identify the "At-risk" and "Effective Copers" sub-groups allowed for the possibility of high and low response set respondents, but few were expected. The proportion of these respondents would be a limitation for the applied use of the findings. The high-responding and low-responding adolescents deserve some further study. Perhaps they could be interviewed or surveyed about their approach to the task or re-tested with special instructions. Use of the short form of the ACS might also be an alternative.

Finally, the use of t-tests as the only statistical measure makes necessary some caution in interpreting the results. The likelihood of obtaining by chance some significant results among a number of t-tests was not discounted; however more complex statistical procedures were considered inappropriate for the method or size of the study. Sensitivity to the pattern of significant results and the high levels of significance of the findings encourage their acceptance as meaningful.

IMPLICATIONS FOR DEVELOPING COPING EFFICACY

The review and discussion of programmes to help adolescents develop their coping efficacy (Chapter 2) identified the following principles for an effective programme:

1. Research evidence about the efficacy of different coping strategies for general and specific adolescent stressors
2. A reliable and valid measure of adolescent coping
3. Research evidence about factors associated with coping
4. Research evidence that the training programme is successful in developing effective strategies, skills, or attitudes, or is successful in reducing ineffective strategies, skills or attitudes.

A starting point has been made towards providing research evidence about the efficacy of coping strategies. The findings of this study and other research reviewed support the value of several strategies which are attention rather than avoidance-oriented and which focus on both the problem and the associated emotions and needs of the adolescent. Both behavioural and cognitive approaches are valuable, as well as the appropriate use of social support.

For Australian adolescents, the Adolescent Coping Scale appears to be a reliable and valid measure. There are several ways in which the ACS could be used with confidence to provide help for adolescents as they establish patterns of coping skills.

Where life-skills or personal development courses are offered by schools or other agencies, an ACS group profile for stressors in general or for relevant specific stressors would provide useful data. Activities, information and training procedures could be planned to increase and re-inforce the use of effective strategies and to reduce the use of ineffective or harmful strategies. Clear links could be made for the group between their ACS results, the training, and relevant research about the value of increasing one's repertoire of effective coping strategies. It would not be difficult to include in such a programme arrangements to manage individual differences within the group, as these would be apparent in the individual profiles.

Many adolescents presenting or referred for individual counselling benefit from addressing their use of coping strategies, and the ACS would be useful to use as a baseline measure and to suggest areas where it would be fruitful to begin work. The research evidence linking coping efficacy with a range of other adjustment factors such as anxiety and self-esteem suggest the value of including work on coping in counselling for problems in many other areas.

Finally, the main findings of this study indicate that "At risk" adolescents reporting a pattern of coping emphasising non-productive and avoidance strategies, with relatively low use of problem-solving strategies, would be likely to benefit from a programme to reverse the balance. This

could be provided by a small-group or individual approach and could be focused even more specifically and intensively than the whole group approach described above. Identification of the deficits in effective coping or the over-use of ineffective coping strategies would allow training, treatment or educational programmes to be selected to meet the adolescents' needs. Evaluation of the programmes would also be made easier and more meaningful.

FUTURE DIRECTIONS

There is a great deal of scope for research in adolescent coping. The findings and limitations of this study point the way towards some particularly interesting directions.

One of the most important findings is that parents and teachers interacting closely with adolescents who have extremely high levels of anxiety do not appear to recognise their stress levels. Is this the conspiracy of silence alluded to by Melanie, the adolescent quoted in the introduction to this study? The question is a serious one deserving serious attention, including the development of measures which obtain reliable and valid information about the observations and beliefs of the significant adults in the lives of adolescents. These adults should know the effect on adolescents of the stressors which society imposes on them. Such recognition must come before action can be expected to moderate the stressors or develop the coping skills of the adolescents.

This study suggests practical ways in which adolescents at risk of suffering when facing a stressful event could be identified and provided

with appropriate help. The findings could be confirmed and expanded upon in two main ways.

Measures of anxiety and self-confidence were the outcome measures used here. Other important possibilities include measures of depression and of achievement in relation to ability or past performance. Such research would extend the findings of this study and put them in a broader context.

The criterion for selecting the "At-risk" group was information about patterns of coping. Research has shown the importance of a number of other factors, both within the person and in the person's environment, which influence coping and adjustment. Studies using combinations of factors, including coping, would help to round out our understanding and increase our ability to identify adolescents in need, and to institute preventative and palliative measures, where possible, for all adolescents within our sphere of influence.

The publication of the Adolescent Coping Scale, and the preliminary research indicating that it is a comprehensive, reliable and valid measure, provide Australian psychologists with a great opportunity. The comparability of much research in coping has been limited by the variety and poor psychometric standards of the measures. The opportunity is now here to build an integrated picture of adolescent coping throughout the developmental period, and to combine this with evaluation of a variety of helping and preventative interventions.

Shortly before her final suicide attempt, Melanie wrote this moving parable:

> Once upon a time, there lived a little girl, actually she was a young woman. Her name was Anniemel and she liked to think a lot. She thought about love, life and the universe as well as designing puzzles to solve. Sometimes she thought too much and fell into 'Mind Holes' which were often difficult to emerge from. She needed friends to help her out. Now when she thinks, she places ladders to make sure there is always a way out. (Giles, 1992, p. 300).

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APPENDIX 1

THE ADOLESCENT COPING SCALE

CONFIDENTI

GENERAL

LONG FORM

Adolescent Coping Scale

© 1993 Erica Frydenberg, Ramon Lewis

Name: ______________________ School: ______________________

Teacher: ______________________ Age: ____ Years ____ Months Today's date: ___ / ___ / ___ Day Month Year

INSTRUCTIONS

Print in boxes — then mark box to underline appropriate letter in each column.

Do not go over the edges of the boxes. Use B or 2B pencil. See Example. Erase mistakes fully

Example: E A D E

SURNAME OR FAMILY NAME INITS.

Year Level: 7 8 9 10 11 12

Test Form: General Specific

Sex: M F

DATE OF BIRTH: Day Month Year

ID

WAIT FOR INSTRUCTIONS

Students have a number of concerns or worries about things such as school, work, family, friends, the world and the like. Below is a list of ways in which people of your age cope with a wide variety of concerns or problems. Please indicate by marking the appropriate box, the things you do to deal with your concerns or worries. Work down the page and mark 1, 2, 3, 4 or 5 as you come to each statement. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which best describes how you feel.

For example if you **sometimes** cope with your concern by 'Talk to others to see what they would do if they had the problem' you would mark 3 as shown below:

	Doesn't apply or don't do it	Used very little	Used some-times	Used often	Used a great deal
1. Talk to others to see what they would do if they had the problem	1	2	3 (marked)	4	5

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ID

Adolescent Coping Scale

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Name / ID: ______________________

1	2	3	4	5
Doesn't apply or don't do it	Used very little	Used some-times	Used often	Used a great deal

1. Talk to others to see what they would do if they had the problem
2. Work at solving what's causing the problem
3. Keep up with work as required
4. Play sport
5. Let God take care of my worries
6. Ask for advice from a qualified person
7. Worry about my future
8. Make a good impression on others who matter to me
9. There is nothing I can do about the problem so I don't do anything
10. I just give up
11. Meet with friends
12. Cry or scream
13. Hope for the best
14. Ring up a close friend
15. Keep my feelings to myself
16. Ignore the problem
17. Talk to others and give each other support
18. Work at solving the problem to the best of my ability
19. Attend school regularly
20. Keep fit and healthy
21. Remember those who are worse off so my troubles don't seem so bad
22. Pray for help and guidance so that everything will be alright
23. Get professional help or counselling
24. Worry about my happiness
25. Work Hard
26. Find a way to relax; for example listen to music, read a book, play a musical instrument, watch television
27. Make myself feel better by taking alcohol, cigarettes or other drugs (not medication)
28. I get sick
29. Wish a miracle would happen
30. Avoid being with people
31. Seek encouragement from others
32. Consider other points of view and try to take them into account
33. Worry about my relationship with others
34. Go for a work-out at the gym
35. Look on the bright side of things and think of all that is good
36. Read a holy book
37. Worry about what is happening
38. Try to 'fit in' with my friends
39. Organise an action or petition regarding my concern
40. Get into a steady relationship
41. Hope that the problem will sort itself out
42. Criticise myself
43. Keep others from knowing what's worrying me
44. Think about what I am doing and why
45. Achieve well in what I'm doing
46. Go out and have a good time and forget about my troubles

CONTINUE ON NEXT PAGE

Adolescent Coping Scale

© 1993 Erica Frydenberg, Ramon Lewis

Name / ID: ____________________

1	2	3	4	5
Doesn't apply or don't do it	**Used very little**	**Used some-times**	**Used often**	**Used a great deal**

47. Try to have a cheerful outlook on life — 1 2 3 4 5
48. Pray for God to look after me — 1 2 3 4 5
49. Organise a group to deal with the concern — 1 2 3 4 5
50. Improve my relationship with others — 1 2 3 4 5
51. Realise that I make things difficult for myself — 1 2 3 4 5
52. Go to meetings which look at the problem — 1 2 3 4 5
53. Try to make close friends with a guy or girl — 1 2 3 4 5
54. Daydream about how things will turn out well — 1 2 3 4 5
55. I have no way of dealing with the situation — 1 2 3 4 5
56. Blame myself — 1 2 3 4 5
57. Don't let others know how I am feeling — 1 2 3 4 5
58. Consciously 'block out' the problem — 1 2 3 4 5
59. Talk to other people about my concern to help me sort it out — 1 2 3 4 5
60. Work instead of going out — 1 2 3 4 5
61. Ask a professional person for help — 1 2 3 4 5
62. Be happy with the way things are — 1 2 3 4 5
63. I suffer head aches or stomach aches — 1 2 3 4 5
64. Worry about what will happen to me — 1 2 3 4 5
65. Put the problem out of my mind — 1 2 3 4 5
66. Do as my friends want — 1 2 3 4 5
67. Join with people who have the same concern — 1 2 3 4 5
68. Take my frustrations out on others — 1 2 3 4 5
69. Imagine that things will work out well — 1 2 3 4 5
70. See myself as being at fault — 1 2 3 4 5
71. Get support from others such as parents or friends — 1 2 3 4 5
72. Discuss the problem with qualified people — 1 2 3 4 5
73. Worry about the future of the world — 1 2 3 4 5
74. Make time for leisure activities — 1 2 3 4 5
75. Change the amount I eat, drink or sleep — 1 2 3 4 5
76. Shut myself off from the problem so that I can avoid it — 1 2 3 4 5
77. Spend more time with boy/girl friend — 1 2 3 4 5
78. Think of different ways of dealing with the problem — 1 2 3 4 5
79. Find a way to let off steam; for example cry, scream, drink, take drugs — 1 2 3 4 5
80. List any *other* things you do to cope with your concerns.

CONFIDENTIAL

SPECIFIC

LONG FORM

Adolescent Coping Scale

© 1993 Erica Frydenberg, Ramon Lewis

Name: ______________________ School: ______________________

Teacher: ______________________ Age: ______ Years ______ Months Today's date: ____ / ____ / ____ Day Month Year

INSTRUCTIONS

Print in boxes — then mark box to underline appropriate letter in each column.

Do not go over the edges of the boxes. Use B or 2B pencil. See Example. Erase mistakes fully

Example: E A D E

Year Level: 7 8 9 10 11 12

Test Form: General Specific

Sex: M F

DATE OF BIRTH: Day Month Year

ID

SURNAME OR FAMILY NAME **INITS.**

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

WAIT FOR INSTRUCTIONS

Students have a number of concerns or worries about things such as school, work, family, friends, the world and the like. Which is the main concern for you in terms of your life? Please describe your main concern, very briefly, in the space below.

My main concern is ....

....

Below is a list of ways in which people of your age cope with a wide variety of concerns or problems. Please indicate by marking the appropriate box, the things you do to deal with the particular concern or worry you have just described. Work down the page and mark 1, 2, 3, 4 or 5 as you come to each statement. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which best describes how you feel.

For example if you **sometimes** cope with your concern by 'Talk to others to see what they would do if they had the problem' you would mark 3 as shown below:

	Doesn't apply or don't do it	Used very little	Used some-times	Used often	Used a great deal
1. Talk to others to see what they would do if they had the problem	1	2	3 ■	4	5

CONFIDENTI

ID

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Adolescent Coping Scale

© 1993 Erica Frydenberg, Ramon Lewis

Name / ID: ______________________

1	2	3	4	5
Doesn't apply or don't do it	**Used very little**	**Used some-times**	**Used often**	**Used a great deal**

REMEMBER: YOU ARE THINKING ABOUT A SPECIFIC CONCERN

1. Talk to others to see what they would do if they had the problem — 1 2 3 4 5
2. Work at solving what's causing the problem — 1 2 3 4 5
3. Keep up with work as required — 1 2 3 4 5
4. Play sport — 1 2 3 4 5
5. Let God take care of my worries — 1 2 3 4 5
6. Ask for advice from a qualified person — 1 2 3 4 5
7. Worry about my future — 1 2 3 4 5
8. Make a good impression on others who matter to me — 1 2 3 4 5
9. There is nothing I can do about the problem so I don't do anything — 1 2 3 4 5
10. I just give up — 1 2 3 4 5
11. Meet with friends — 1 2 3 4 5
12. Cry or scream — 1 2 3 4 5
13. Hope for the best — 1 2 3 4 5
14. Ring up a close friend — 1 2 3 4 5
15. Keep my feelings to myself — 1 2 3 4 5
16. Ignore the problem — 1 2 3 4 5
17. Talk to others and give each other support — 1 2 3 4 5
18. Work at solving the problem to the best of my ability — 1 2 3 4 5
19. Attend school regularly — 1 2 3 4 5
20. Keep fit and healthy — 1 2 3 4 5
21. Remember those who are worse off so my troubles don't seem so bad — 1 2 3 4 5
22. Pray for help and guidance so that everything will be alright — 1 2 3 4 5
23. Get professional help or counselling — 1 2 3 4 5
24. Worry about my happiness — 1 2 3 4 5
25. Work Hard — 1 2 3 4 5
26. Find a way to relax; for example listen to music, read a book, play a musical instrument, watch television — 1 2 3 4 5
27. Make myself feel better by taking alcohol, cigarettes or other drugs (not medication) — 1 2 3 4 5
28. I get sick — 1 2 3 4 5
29. Wish a miracle would happen — 1 2 3 4 5
30. Avoid being with people — 1 2 3 4 5
31. Seek encouragement from others — 1 2 3 4 5
32. Consider other points of view and try to take them into account — 1 2 3 4 5
33. Worry about my relationship with others — 1 2 3 4 5
34. Go for a work-out at the gym — 1 2 3 4 5
35. Look on the bright side of things and think of all that is good — 1 2 3 4 5
36. Read a holy book — 1 2 3 4 5
37. Worry about what is happening — 1 2 3 4 5
38. Try to 'fit in' with my friends — 1 2 3 4 5
39. Organise an action or petition regarding my concern — 1 2 3 4 5
40. Get into a steady relationship — 1 2 3 4 5
41. Hope that the problem will sort itself out — 1 2 3 4 5
42. Criticise myself — 1 2 3 4 5
43. Keep others from knowing what's worrying me — 1 2 3 4 5
44. Think about what I am doing and why — 1 2 3 4 5
45. Achieve well in what I'm doing — 1 2 3 4 5
46. Go out and have a good time and forget about my troubles — 1 2 3 4 5

CONTINUE ON NEXT PAGE

CONFIDENTIAL

ID

Adolescent Coping Scale © 1993 Erica Frydenberg, Ramon Lewis

Name / ID: ____________________

1	2	3	4	5
Doesn't apply or don't do it	Used very little	Used some-times	Used often	Used a great deal

REMEMBER: YOU ARE THINKING ABOUT A SPECIFIC CONCERN

47. Try to have a cheerful outlook on life 1 2 3 4 5

48. Pray for God to look after me 1 2 3 4 5

49. Organise a group to deal with the concern 1 2 3 4 5

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51. Realise that I make things difficult for myself 1 2 3 4 5

52. Go to meetings which look at the problem 1 2 3 4 5

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54. Daydream about how things will turn out well 1 2 3 4 5

55. I have no way of dealing with the situation 1 2 3 4 5

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69. Imagine that things will work out well 1 2 3 4 5

70. See myself as being at fault 1 2 3 4 5

71. Get support from others such as parents or friends 1 2 3 4 5

72. Discuss the problem with qualified people 1 2 3 4 5

73. Worry about the future of the world 1 2 3 4 5

74. Make time for leisure activities 1 2 3 4 5

75. Change the amount I eat, drink or sleep 1 2 3 4 5

76. Shut myself off from the problem so that I can avoid it 1 2 3 4 5

77. Spend more time with boy/girl friend 1 2 3 4 5

78. Think of different ways of dealing with the problem 1 2 3 4 5

79. Find a way to let off steam; for example cry, scream, drink, take drugs 1 2 3 4 5

80. List any *other* things you do to cope with your main concern.

APPENDIX 2

THE COMPETITIVE STATE ANXIETY INVENTORY

(KIRKBY ADAPTATION)

PRE-EXAM INVENTORY

Name ....

Date of Birth......................................

A number of statements which students have used to describe their feelings before examinations are given below. Read each statement and then circle the appropriate number to indicate how you feel right now about your competitive examinations. There are no right or wrong answers. Do not spend too much time on any one statement, but choose the answer which describes your feelings right now.

		Not at all	Somewhat	Moderately	Severe
1.	I am concerned about these examinations	1	2	3	4
2.	I feel nervous	1	2	3	4
3.	I feel at ease	1	2	3	4
4.	I have self doubts	1	2	3	4
5.	I feel jittery	1	2	3	4
6.	I feel comfortable	1	2	3	4
7.	I am concerned that I may not do as well in these examinations as I could	1	2	3	4
8.	My body feels tense	1	2	3	4
9.	I feel self-confident	1	2	3	4
10.	I am concerned about not doing well	1	2	3	4
11.	I feel tense in my stomach	1	2	3	4
12.	I feel secure	1	2	3	4
13.	I am concerned about not being able to perform under pressure	1	2	3	4
14.	My body feels relaxed	1	2	3	4
15.	I'm confident I can meet the challenge	1	2	3	4
16.	I'm concerned about performing poorly	1	2	3	4
17.	My heart is racing	1	2	3	4
18.	I'm confident about performing well	1	2	3	4
19.	I'm worried about reaching my goal	1	2	3	4
20.	I feel my stomach sinking	1	2	3	4
21.	I feel mentally relaxed	1	2	3	4
22.	I'm concerned that others will be disappointed with my performance	1	2	3	4
23.	My hands are clammy	1	2	3	4
24.	I'm confident because I mentally picture myself reaching my goal	1	2	3	4
25.	I'm concerned I won't be able to concentrate	1	2	3	4
26.	My body feels tight	1	2	3	4
27.	I'm confident of coming through under pressure	1	2	3	4

APPENDIX 3

GROUP PROFILES - ADOLESCENT COPING SCALE

Adolescent Coping Scale · Group Profile of Coping Strategies

© 1993 Erica Frydenberg, Ramon Lewis

Group ______________________ Date ____________ Form ☑ General ☐ Specific

Adjusted Score: Gen. / Spec. — Not used at all · Used very little · Used sometimes · Used frequently · Used a great deal

Scale	Gen.	Spec.										
1. SocSup			20	30	40	50	60	70	80	90	100	**Seek Social Support** — sharing the problem with others; enlisting their support, encouragement and advice.
2. SolvProb			20	30	40	50	60	70	80	90	100	**Focus on Solving the Problem** — tackling the problem systematically by thinking about it and taking other points of view into account.
3. Work			20	30	40	50	60	70	80	90	100	**Work Hard and Achieve** — being conscientious about (school) work; working hard, and achieving high standards.
4. Worry			20	30	40	50	60	70	80	90	100	**Worry** — worrying about the future in general and personal happiness in particular.
5. Friends			20	30	40	50	60	70	80	90	100	**Invest in Close Friends** — spending time being with close friends and making new friendships.
6. Belong			20	30	40	50	60		80	90	100	**Seek to Belong** — being concerned with what others think, and doing things to gain their approval.
7. WishThink			20	30	40	50	60	70	80	90	100	**Wishful Thinking** — hoping for the best, that things will sort themselves out, that a miracle will happen.
8. NotCope			20	30	40	50	60	70	80	90	100	**Not Coping** — not doing anything about the problem, giving up, feeling ill.
9. TensRed			20	30	40	50	60	70	80	90	100	**Tension Reduction** — trying to feel better by letting off steam, taking frustrations out on others, crying, screaming, taking alcohol, cigarettes or drugs.
10. SocAc			20	30	40	50	60	70	80	90	100	**Social Action** — enlisting support by organising group action to deal with concerns, and attending meetings and rallies.
11. Ignore			20	30	40	50	60	70	80	90	100	**Ignore the Problem** — consciously blocking out the problem, pretending it doesn't exist.
12. SelfBl			20	30	40	50	60	70	80	90	100	**Self-blame** — being hard on oneself, seeing oneself as being responsible for the problem.
13. KeepSelf			20	30	40	50	60	70	80	90	100	**Keep to Self** — keeping concerns and feelings to oneself, avoiding other people.
14. Spirit			20	30	40	50	60	70	80	90	100	**Seek Spiritual Support** — praying for help and guidance, reading a holy book.
15. FocPos			20	30	40	50	60	70	80	90	100	**Focus on the Positive** — looking on the bright side of things, reminding oneself that there are others who are worse off, trying to stay cheerful.
16. ProfHelp			20	30	40	50	60	70	80	90	100	**Seek Professional Help** — discussing the problem with a professionally qualified person.
17. Relax			21	31	42	52	63	73	84	94	105	**Seek Relaxing Diversions** — taking one's mind off the problem by finding ways to relax such as reading a book, watching television, going out and having a good time.
18. PhysRec			21	31	42	52	63	73	84	94	105	**Physical Recreation** — playing sport and keeping fit.

Published by the Australian Council for Educational Research Ltd., Radford House, Frederick Street, Hawthorn, 3122.

Adolescent Coping Scale — Group Profile of Coping Strategies

© 1993 Erica Frydenberg, Ramon Lewis

Group ______________________ Date __________ Form ☐ General ☑ Specific

Scale	Adjusted Score Gen.	Adjusted Score Spec.	Not used at all		Used very little		Used sometimes		Used frequently		Used a great deal	
1. SocSup			20	30	40	50	60	70	80	90	100	**Seek Social Support** — sharing the problem with others; enlisting their support, encouragement and advice.
2. SolvProb			20	30	40	50	60		80	90	100	**Focus on Solving the Problem** — tackling the problem systematically by thinking about it and taking other points of view into account.
3. Work			20	30	40	50	60	70	80	90	100	**Work Hard and Achieve** — being conscientious about (school) work; working hard, and achieving high standards.
4. Worry			20	30	40	50	60	70	80	90	100	**Worry** — worrying about the future in general and personal happiness in particular.
5. Friends			20	30	40	50	60	70	80	90	100	**Invest in Close Friends** — spending time being with close friends and making new friendships.
6. Belong			20	30	40	50	60	70	80	90	100	**Seek to Belong** — being concerned with what others think, and doing things to gain their approval.
7. WishThink			20	30	40	50	60	70	80	90	100	**Wishful Thinking** — hoping for the best, that things will sort themselves out, that a miracle will happen.
8. NotCope			20	30	40	50	60	70	80	90	100	**Not Coping** — not doing anything about the problem, giving up, feeling ill.
9. TensRed			20	30	40	50	60	70	80	90	100	**Tension Reduction** — trying to feel better by letting off steam, taking frustrations out on others, crying, screaming, taking alcohol, cigarettes or drugs.
10. SocAc			20	30	40	50	60	70	80	90	100	**Social Action** — enlisting support by organising group action to deal with concerns, and attending meetings and rallies.
11. Ignore			20	30	40	50	60	70	80	90	100	**Ignore the Problem** — consciously blocking out the problem, pretending it doesn't exist.
12. SelfBl			20	30	40	50	60	70	80	90	100	**Self-blame** — being hard on oneself, seeing oneself as being responsible for the problem.
13. KeepSelf			20	30	40	50	60	70	80	90	100	**Keep to Self** — keeping concerns and feelings to oneself, avoiding other people.
14. Spirit			20	30	40	50	60	70	80	90	100	**Seek Spiritual Support** — praying for help and guidance, reading a holy book.
15. FocPos			20	30	40	50	60	70	80	90	100	**Focus on the Positive** — looking on the bright side of things, reminding oneself that there are others who are worse off, trying to stay cheerful.
16. ProfHelp			20	30	40	50	60	70	80	90	100	**Seek Professional Help** — discussing the problem with a professionally qualified person.
17. Relax			21	31	42	52	63	73	84	94	105	**Seek Relaxing Diversions** — taking one's mind off the problem by finding ways to relax such as reading a book, watching television, going out and having a good time.
18. PhysRec			21	31	42	52	63	73	84	94	105	**Physical Recreation** — playing sport and keeping fit.

Published by the Australian Council for Educational Research Ltd, Radford House, Frederick Street, Hawthorn, 3122.

APPENDIX 4

RESULTS OF "A-TYPICAL" SUB-GROUPS

ACS Coping Styles (Specific Form)

Group		STYLES					
		Solve Problem		Non-productive		Reference to Others	
		Mean Score	Average Item Mean	M S	A IM	M S	A IM
High	(n=12)	131.0	3.74	119.0	3.22	47.66	2.80
Low	(n=12)	78	2.23	59.17	1.60	29.75	1.75
Whole Group	(n=141)	106.1	3.03	94.30	2.55	38.10	2.24

Anxiety and Self-confidence Measures

		State Anxiety		Cognitive Anxiety		Somatic Anxiety		Self-confidence	
Group		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
High	n = 10	49.90	11.49	28.30	5.54	21.50	6.64	17.40	4.55
Low	n = 11	42.90	8.98	23.90	4.16	16.73	3.63	17.73	3.82
Whole Group	n = 136	46.31	12.95	26.58	6.06	18.30	5.94	18.06	4.98