INTRODUCTION

Suicide

"Suicide is voluntarily doing an act for the purpose of destroying one's own life while one is conscious of what one is doing, and in order to arrive at a verdict of suicide there must be evidence that the deceased intended the consequences of his act."

Suicide perhaps more than any other single human behaviour has attracted the attention of thousands of writers, from many different disciplines. Psychiatrists, ethicists, philosophers, theologians, anthropologists, sociologists and psychologists alike have all pondered, studied, researched, philosophised and written about the act of self destruction we term suicide.

Durkeim was an influential twentieth century sociologist who wrote about suicide (Durkeim 1897 cited in Barracough & Hughes 1987). He asserted that the suicide rate of any society is not merely the sum of the individual acts of suicide occurring in isolation, but reflects the character of that society as a whole. This may be one reason why suicide attracts so much attention because if suicide is thought of as a kind of barometer of a society's character and well being, reported fluctuations in the suicide rate will naturally be of interest. Each society also has differing cultural views on the acceptability of suicide. For example the Japanese have a long tradition of honourable death by suicide which they term seppuku. It is perhaps difficult to see the act of suicide simply as an individuals right to self determination because the consequences of suicide affect more than one person. As Cain (1972) states:

"more than any other mode of death, suicide implicitly points a finger of blame at related survivors, leaving a legacy of guilt, felt-responsibility, and potentially pathological sequelae."
Perhaps the legacy of guilt and felt responsibility that affects the lives of the survivors is another reason why researchers have spent so much time and energy in trying to understand suicide.

**Epidemiological Studies of Suicide:**

Epidemiology is the study of the distribution and determinants of disease frequency in humans (MacMahon & Pugh 1970). Epidemiological studies can aid in elucidating rates of suicide worldwide and in Australia. Epidemiological information is useful in generating intervention, prevention and prediction models. In studying suicide or suicidal behaviour accurate epidemiological information is therefore enormously important.
Extent of the suicide problem worldwide:

As can be seen from Table 1 below the suicide rate per 100,000 varies greatly for different age groups and for different countries.

Table 1 Suicide Rates (per 100,000) by Age and Country for the year 1986.

The suicide rates in the above table have been compiled by the World Health Organisation, however they depend on the accuracy of the individual countries for their overall accuracy. The accuracy of suicide rates has been questioned by several authors.
For example Barraclough and Hughes (1987) assert that it is pointless to compare the suicide rates of different societies as the differences between the official rates of these societies cannot be proven to be valid. They suggest that many factors intervene between the finding of a body and the writing of death by suicide on the death certificate. The establishing of suicide being the cause of death is often influenced by cultural mores and tradition.

"The evidence supporting suicide as the cause of death is sometimes not strong enough to provide proof, and in some cultures the stigma and religious condemnation attached to this form of death may lead probable suicides for which the slightest doubt exists to be classified to other causes of death" Barraclough & Hughes (1987)

To illustrate Barraclough and Hughes (1987) point one needs only to look at the suicide statistics of Arab countries where suicide is unacceptable for religious reasons. Kuwait for example has a suicide rate of 0.1 per 100,000; one of the lowest in the world. It could be argued then that an unusually low suicide rate for a particular country may in fact be measuring nothing more than the society's disapproval of suicide and ability to conceal suicides by having them certified as some other form of death. A further problem concerning the accuracy of reported suicide rates is highlighted by Barraclough and Hughes who suggest that doubtful suicides that on common sense grounds are suicides but for which there is insufficient proof are usually classified as undetermined deaths, thus forming a large part of the error of the suicide rate.

While cultural differences and other factors affect the accuracy of the reported suicide rates Baraclough and Hughes (1987) assert that there are large differences between national suicide rates and that ascertainment procedures cannot explain more than a small part of these differences. Perhaps the differences in countries suicide rates have a cultural basis. It may be that welfare systems more adequately look after people in some countries. It is also possible that some countries have more developed mental
health care systems and thus may be able to identify at risk groups of people and give them appropriate help. The difference in the suicide rate across different ages is more difficult to explain particularly as the at risk age group seems to change. It has been suggested that this is possibly a vulnerable peer group moving through the age brackets.

The extent of the Australian suicide problem:

In Australia in 1993 there were 2081 deaths from suicide, this compares with 1956 deaths from motor vehicle accidents. The Australian Bureau of Statistics-Causes of Death Report (ABS 1993) reveals that suicide rates for young Australian men in the age bracket 15-24 remained high at 25 per 100,000. The report shows that the suicide rate for young men has increased from 10.6 (per 100,000) to 25 (per 100,000) between 1968 and 1993. In 1993, 345 Australian men within the age range 15-24 committed suicide. In the same age group 55 women committed suicide. Thus the rate of completed suicide among young men is over 6 times greater than among girls. In 1993 the percentage of all deaths in the age group 15-24 years attributed to suicide was 25% for males and 4% for females, (ABS 1993).

A 1993 UNICEF report revealed that Australia had the highest rate of youth suicide (15-24 year olds) amongst 14 industrialised nations for the period from 1987-1990 (16.4 per 100,000). This rate of 16.4 per 100,000 compares with Norway (16.3), the United States (13.2), Sweden (12.2), and Japan (7). The percentage of youth death attributed to suicide is also higher than the percentages in other industrialised nations, (UNICEF 1993). However both Baume (1993) and Goldney (1993) point out that the overall rate of suicide in Australia has remained fairly constant over the past ninety years at between 13.5 and 14.5 deaths per 100,000. They suggest that the change in age profiles of the mortality composition is a more recent phenomenon (over the last 25 years approximately). Thus by taking a more longitudinal view the overall suicide rate
becomes less dramatic. However the mortality composition, in particular highlights an apparent rise in the last 25 years of youth suicide (mainly male youth suicide).

Epidemiological Research:

Due to difficulties involved in obtaining reliable research data about people who make successful suicide attempts (a topic which will be discussed later in this introduction) much suicide research is undertaken with those who attempt suicide and with the investigation of suicidal thoughts. While most researchers admit that there are substantial differences between attempters, contemplators and completers of suicide the information obtained by studying attempters and contemplators is nonetheless very valuable to the understanding of suicide. A recommendation of the study into youth suicide in Australia conducted by the Department of Employment Education and Training (Mason 1989) states:

"Both suicide ideation and attempted suicide are destructive and potentially lethal forms of thinking and behaviour that need to be addressed as part of the continuum of self-destructive behaviour"

Researchers of adolescent suicide have concentrated their efforts on two broad characteristics of suicide attempters: cognitive characteristics and behavioural characteristics.

Berman and Carroll (1984) in a very extensive review of the available literature found that adolescent suicide attempters have demonstrated the following characteristics: greater withdrawal, alienation from and less involvement in the school milieu, school problems, poorer academic achievements, socially unacceptable behaviour, drug and alcohol use, aggression, histories of prior suicide ideation, childhood hyperactivity, poor physical health requiring medical attention, poor problem solving ability, less intact reality testing ability, more prevalent psychotic thinking, a
higher degree of hopelessness, decreased future time perspective and decreased goal orientation.

Table 2 below is a summary of the behavioural and cognitive characteristics of adolescent suicide attempters reported in fourteen research studies. It confirms the findings of Berman and Carroll (1984) in terms of the range of behavioural and cognitive characteristics attributed to adolescent attempters.

Table 2. Behavioural and Cognitive characteristics of suicide attempters.

<table>
<thead>
<tr>
<th>BEHAVIOURAL CHARACTERISTICS OF SUICIDE ATTEMPTERS</th>
<th>COGNITIVE CHARACTERISTICS OF SUICIDE ATTEMPTERS</th>
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<tbody>
<tr>
<td>- alienation from and less involvement in school milieu a</td>
<td>- decreased future time perspective a</td>
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<tr>
<td>- socially unacceptable behaviour/ behaviour problems b</td>
<td>- poor interpersonal problem solving skills, significantly more focused on problems i</td>
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<tr>
<td>- poorer school performance and under-achievement c</td>
<td>- decreased goal orientation j</td>
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<tr>
<td>- drug and alcohol use have been found to a greater degree d</td>
<td>- deficient in problem solving skills j</td>
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<tr>
<td>- greater withdrawal prior to attempt e</td>
<td>- diminished problem solving capacity k</td>
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<tr>
<td>- increased aggression e</td>
<td>- psychotic thinking more prevalent l</td>
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<tr>
<td>- poor physical health requiring recent medical attention e</td>
<td>- reality testing less intact l</td>
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<tr>
<td>- childhood hyperactivity f</td>
<td>- more hopeless m</td>
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<tr>
<td>- histories of prior suicide ideation f</td>
<td>- uncertainty of the future n</td>
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<tr>
<td>- school problems g</td>
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<td>- decreased appetite, truancy h</td>
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As can be seen in Table 2 above a number of researchers (Dopkins & Shrout 1990, Hynes 1976, Levenson & Neuringer 1971) have identified deficiencies in problem solving skills as being a cognitive characteristic of a suicide attempter. This deficiency has been noted in the research of Schotte and Clum (1987) and used in their model of suicide ideation discussed later in this introduction. Table 2 above shows that epidemiological studies have provided a wealth of descriptive information about adolescent suicide attempters. All of the studies in Table 2 only used subjects who had actually been hospitalised in a psychiatric hospital as a result of their suicide attempt. This could be seen as a problem as many suicide attempters are seen at general hospitals and treated for superficial injuries and discharged. Thus many potential subjects could be missed by restricting samples to hospital patients only. Differences between those admitted to psychiatric hospitals as a result of their attempts and those who only consult emergency departments in general hospitals and were discharged are undetermined. The studies had between 32 and 145 subjects.

Research to date has provided much information about cognitive and behavioural characteristics of adolescent suicide attempters. However this knowledge has not impacted upon the rate of suicide and our ability to predict suicide attempts remains poor. Goldney, Weinfield, Tiggerman & Weinfield (1991). The difficulties associated with predicting suicide attempts will be addressed more thoroughly later in this introduction. It is information from these types of studies that has enabled the development of models of suicide, suicide ideation and suicidal behaviour. Research into suicide is not without numerous methodological problems which are outlined below.
Methodological Issues in Suicide Research

Before commencing a research project in the area of adolescent suicide ideation and suicidal behaviour it is necessary to consider some of the methodological problems which hinder research in this area.

Methodological problems effecting suicide research include: the low base rate of suicide, suicide definition and measurement problems, the retrospective nature of suicide research, the problem of research relevance when comparing suicide attempters and completors of suicide and the relevance of the presence of suicide ideation to the understanding of suicidal behaviour.

1) The Low Base Rate

Perhaps the most fundamental problem faced by suicide researchers is stated by Goldney et al. (1991) who report that the crucial factor limiting research in the area of suicide is the low base rate. They suggest that the dilemma remains that suicide and attempted suicide are relatively infrequent events and therefore difficult to study. The serious yet relatively low rates of suicide or of attempted suicide per 100,000 people severely limits research efforts.

2) Definition and Measurement problems

One of the problems experienced by research efforts in the area of suicidal behaviour is the lack of standard definitions for the behaviour being measured. Berman & Carroll (1982) assert that attempted suicide is not a unitary behaviour. They argue that it can only be described by a continuum ranging from least lethal (suicidal gestures or low lethality attempts) to most lethal (severe, but not fatal attempts). They suggest that researchers who do not consider the seriousness of each attempter's attempt along this continuum separately but rather equate all attempts are jeopardising the accuracy of their research. Berman & Carroll (1982) also report that studies have often
not paid due attention to the aspect of intentionality, that is the motive for the attempt. They suggest that the question needs to posed: Did the person actually wish to die or did they wish to seek attention, punish others, reduce anxiety etc?

The dimensional nature of suicidal behaviour is also reflected in a review of the literature on suicide ideation by Goldney, Winefield, Tiggeman & Smith (1989) who comment on the range of definitions of suicide ideation in the literature. Goldney et al (1989) point out that "suicidal ideation can vary from fleeting thoughts that life is not worth living to an intense delusional preoccupation with self destruction. It is thus not unexpected that there is a diversity of results in studies of the prevalence of suicide ideation in the community". This lack of consistency in defining suicide ideation leads to large discrepancies in reported prevalence rates. In a review of the literature Goldney et al (1989) found that the reported prevalence of suicide ideation ranges from 5.4% of a sample from the general population to 50% of subjects in a general psychology student subject pool. Goldney et al (1991) highlight some of the difficulties in prevalence studies and the range of results obtained. Goldney et al (1989) show that depending on the way that there own data was analysed as many as 17.5% of women and 20.2% of men or as few as 3.0% of women and 3.3% of men in a young Australian adult population reported some degree of suicidal ideation in the period of weeks before testing. Their measure of suicide ideation was on the basis of responses to four questions within the General Health Questionnaire (GHQ). They argue strongly that one of the difficulties in suicide research is the difficulty of defining and measuring suicide ideation. They suggest that many recent studies use their own individual questions rather than a standardised instrument which makes even simple comparisons between studies describing prevalence rates very problematic. While they note that Beck, Kovacs and Wiseman (1979) have developed a standardised instrument for measuring the presence of suicide ideation (The Scale for Suicide Ideation) they argue that it has not been widely used and therefore choose the GHQ for their study.
Perhaps the most important point from Goldney et al (1989) is that researchers into suicide ideation need to standardise the way that they measure suicide ideation to allow for less problematic comparisons of results.

3) Retrospective nature of suicide research

Berman and Cohen-Sandler (1982) have also described the many methodological problems found in adolescent suicide research. One of the greatest problems is that analysis of the suicidal act, the suicidal person and the dynamics involved is necessarily retrospective. The retrospective nature of suicide research places severe limitations on the accuracy of survivor's reports. For example Berman and Cohen-Sandler (1982) state that surviving family members must deal with their feelings of grief, shame and guilt. This often leads them to deny, disguise and incorrectly report information or simply not to cooperate with investigators. Therefore not all suicides are correctly identified.

4) Problem of research relevance when comparing attempters with completers of suicide.

A further problem in suicide research is that researchers have focused their research on suicide attempters and have often assumed that suicide completers and attempters share a high degree of correspondence. However as Berman & Cohen-Sandler (1982) point out there is often little correspondence between the typical attempter and the typical completer. They state that 90% of adolescents who attempt suicide are female while better than 80% of those adolescents who complete suicide are male.

5) Relevance of the presence of suicide ideation to the understanding of suicidal behaviour
A dilemma faced by suicide researchers is to determine how much importance can be placed on the presence of suicide ideation and on how relevant the study of suicide ideation is to the understanding of suicidal behaviour as a whole. Goldney et al. (1989) address this problem in a number of ways. Firstly they question the view of suicide ideation which sees suicide ideation as perhaps simply part of an abstract sense of searching for the meaning of life and death. They discount this idea by pointing out that suicide ideation cannot be taken so lightly because of its association with the presence of other measures of psychological distress. In their research they show that the presence of suicide ideation over the past few weeks is significantly associated with measures of self esteem and depressive mood assessed four years earlier. They suggest that persons who report suicide ideation may have more pervasive personality difficulties. This finding reinforces their view that suicide ideation is related to longer standing issues of depression and self esteem. They conclude by arguing for the use of standardised instruments for the measurement of suicide ideation and suggest that suicide ideation must be related to suicide even if only in an overlapping sense rather than as a continuum. Goldney et al. (1991) state that "we believe that the present findings lend considerable weight to the clinical belief that suicidal ideation is not simply a transient phenomenon and that it is associated with more pervasive personality difficulties than might initially be considered on the basis of cross-sectional studies" p119.

Ranier, Steer, Lawrence, Rissmiller, Piper and Beck (1987) also support the importance of researching suicide ideation. They suggest that because suicide ideation logically precedes a suicide attempt or completed suicide then it seems appropriate to focus on the intensity, pervasiveness and characteristics of the suicide ideation to assess future suicidal potential.

In summary there are a number of issues which must be considered in suicide research. The first issues which need to be addressed are the low base rate, definition
problems and measurement problems. To lessen the effect of the low base rate of suicide researchers must ensure that suicide recording is accurate. Australia's relatively high base rate suggests that our recording system is accurate. This needs to be maintained so that all suicides can be studied. Researchers need to conform to a standard definition of suicide and suicidal behaviour. Measurement instruments of the severity of attempts need to be created and standardised. Researchers need to clearly state who they are studying, e.g., suicide attempters or completers. One cannot assume that all attempters are alike. More attention to the level of severity of the attempt must be taken into account in research studies using attempters.

**Current Research Trends in Adolescent Suicide**

Suicide Ideation Models:

The work of epidemiological researchers has revealed many of the cognitive and behavioural characteristics of people who attempt suicide. This research has led to the proposal of many cognitive behavioural models of suicide ideation in an attempt to try to understand the process of suicidal thinking and behaviour. It was hoped that by learning more about the process of suicidal thinking that intervention and prevention can be attempted more successfully.

The proposed models to be reviewed are Simons & Murphy (1985, Ranieri et al. (1987), Rich & Bonner (1987), Clum, Patsiokas & Luscomb (1979) and Schotte & Clum (1982). These models have been chosen because they have reportedly accounted for reasonably high amounts of the variance in suicide or suicide ideation.

1) Simons and Murphy (1985) have proposed a model of adolescent suicide ideation incorporating psychological-behavioural variables and a set of socio-environmental variables. The psychological-behavioural variables were emotional problems, hope concerning the future, self esteem, and delinquent behaviour. The socio-environmental variables were absence of parental support, employment problems and interpersonal difficulties at school. The study involved a self report questionnaire of 200 items with 407 high school students (225 males and 168 females) taking part in the study. Zero order correlations between the variables and suicide ideation proved to be significant for all variables. The correlation strength values ranged from $R = .47$, for emotional problems and females to $R = 0.14$, for employment problems. While these results are consistent with previous research the researchers went on to perform a multivariate analysis. The path analysis performed revealed that many of the variables were no longer related to ideation when the effects of other variables were controlled. A
path analysis of the model revealed that the factors: emotional problems, self esteem, hope, delinquent behaviour, absence of parental support, employment problems and school problems accounted for 26% of the variance in suicide ideation for males and 25% of the variance for females. The emotional problems variable was found to be the only variable which had a direct effect on ideation for males. Self esteem and hope were found to have an indirect effect through their relationship with emotional problems for males. Problems with employment were shown to have direct effects on ideation and indirect effects through emotional problems and hope. Although of less importance lack of parental support was shown to have indirect effects through self esteem, hope and emotional problems for males. For females emotional problems was the most significant variable having a direct effect on ideation as did delinquent behaviour although to a lesser extent. In contrast to the males results none of the socio-environmental variables were found to have a direct effect on ideation for females. Indirect effects were found for self esteem and hope for females and males.

Summarising, the study revealed that the best predictor of ideation for males was employment problems and for females, involvement in delinquent behaviour and emotional problems.

A serious problem of this study was the way the dependent variable suicide ideation was measured. It was simply measured by the response to a single question (one of 220 items): "Do you ever have thoughts about possibly ending your life?". Of the 395 respondents who answered this question 32% of males and 46% of the females indicated that they had thought about suicide. There were no questions in their study regarding the seriousness of the suicide ideation or about how current it was while other questions were about current states of self esteem, emotional problems, depression and anxiety. As Goldney et al (1989) has pointed out the way suicide ideation is measured can have great impact on the results of studies.

2) A study by Ranieri et al. (1987) proposed an explanation of suicide ideation which included dysfunctional attitudes to suicide ideation. The purpose of their study was to investigate the relationships among depression, dysfunctional attitudes and
suicide ideation in psychiatric patients. They applied Beck's (1972) cognitive model of human functioning and his cognitive theory of depression to the problem of depression and suicide ideation. While Beck's cognitive theory of depression asserts that hopelessness is the major predictor of suicide ideation the researchers hypothesised that other dysfunctional cognition may also be related to suicidal intentions. Their study involved 50 inpatients diagnosed with mixed psychiatric disorders and 25 outpatients diagnosed with affective disorders. They administered computerised versions of the Beck Depression Inventory, Hopelessness scale, Dysfunctional Attitudes Scale and the Scale for Suicide Ideation. They found that all the scale scores were positively related to suicide ideation and that the magnitude of the correlations were comparable. The results showed that depression as measured by the Beck Depression Inventory was a stronger predictor of suicide ideation than was hopelessness. In general the results reaffirmed the importance of depression in addition to hopelessness as a syndrome associated with suicide ideation and importantly indicated that dysfunctional attitudes such as perfectionism may yield additional information about suicidal risk. Both the Beck Depression Inventory (BDI) and the Dysfunctional Attitudes Scale (DAS) contributed unique variance to the explanation of suicide ideation. The BDI was three times more important as a predictor of suicide ideation than was the DAS. The major finding of the this study was that both hopelessness and depression remain useful constructs for estimating suicide ideation and that hopelessness should not be automatically presumed to be the best predictor of suicidal risk in all clinical populations. The study also showed that other dysfunctional attitudes are uniquely associated with the presence of suicide ideation and should be researched further.

3) Rich & Bonner (1987) proposed a stress vulnerability model of suicidal ideation and behaviour. Their model asserts that:

"social-emotional alienation, cognitive distortions and deficient adaptive resources serve as a predispositional base in suicidal behaviour. These factors are hypothesised to create a "coping vulnerability" in an individual that renders him or her vulnerable to
suicide ideation in stressful situations. With repeated exposure to and failure to cope with stress over time, individuals are hypothesised to develop a sense of increasing hopelessness which then leads to more lethal, overt forms of suicidal behaviour.* (P265-266)

To test the concurrent validity of their model Rich and Bonner (1987) gave 202 undergraduate subjects the following self-report instruments: 1) the Self Report Scale for suicide Ideation, 2) self predicted future suicide probability items from the Suicide Behaviour Questionnaire, 3) the UCLA Loneliness Scale, 4) the Self rating Depression Scale, 5) the Irrational Beliefs Inventory, 6) the Reasons for Living Inventory, 7) the Hopelessness Scale and 8) an abbreviated form of the Life Experiences Survey.

Multiple regression analyses revealed that the combination of depression, few reasons for living, loneliness and negative life stress accounted for 30% of the variance in current suicide ideation. The combination of current suicide ideation, hopelessness, few reasons for living and dysfunctional cognitions were found to account for 56% of the variance in future suicide probability estimates. While the results of the study provided support for the proposed stress-vulnerability model of suicide ideation in college students the researchers rightly cautioned against generalising the findings of the study beyond college students and against making assumptions about cause and effect. Being a cross-sectional design the researchers were unable to infer temporal relationships between the predictor variables and suicide ideation.

5) Clum, Patsiokas & Luscomb (1979) suggested that life stress interacts with cognitive rigidity and/or difficulties in problem solving to increase the risk of committing or attempting suicide. Their model postulates that suicidal individuals are deficient in their ability to use divergent thinking to solve life's problems.

Schotte & Clum (1982) investigated this model further with college student suicide contemplators. They proposed a stress/problem solving model to explain suicidal ideation. Figure 1 below graphically represents Schotte and Clum's proposed
model. Their model suggests that individuals who are poor problem solvers are unable to engage in effective problem solving when they are faced with negative life stress and as a direct result of their inability to solve the problems they become hopeless. This feeling of hopelessness is said to place the individual at a higher risk for suicidal behaviour. The model suggests that at the point where the individual is unable to solve his or her problems they become hopeless and suicide ideation (i.e. suicidal thoughts) commences. The authors of the model are proposing that a person who is deficient in problem solving abilities and who is faced with high levels of negative life stress is at risk of failing to solve their problems, and thereby becoming hopeless and suicidal.

Schotte & Clum (1982) support their model by arguing that the models three main factors - life stress, cognitive rigidity and hopelessness, have all been previously supported as predictors of suicide ideation. They report that suicide attempters report four times as many negative life events in the six months preceding their attempts than do normals, and one and a half times the number reported by depressives in the period prior to the onset of their depression (Schotte & Clum 1982).

Figure 1 Proposed Suicide Ideation Model (Schotte & Clum 1982).
Schotte & Clum (1982) also refer to a number of previous studies which show that suicide attempters have been identified consistently as being cognitively rigid and poor problem solvers. Further, Schotte & Clum (1982) report that hopelessness has been shown to be a better predictor of suicidal intent than is depression in both suicide attempters and suicide contemplators (Beck, Kovacs, & Weissman 1974). Finally, Schotte & Clum report how Motto (1977) was able to demonstrate that suicidal ideation and suicidal intent increase with increasing levels of hopelessness.

Schotte and Clum (1982) tested their model by a study they conducted with 175 psychology students. Measures used were the Scale for Suicide Ideation (Beck, Kovacs & Weissman 1979), self rating scale of depression (Zung 1965), the Life Experiences Survey (LES) (Sarason, Johnson & Siegel 1978), Hopelessness Scale (Beck, Weissman, Lester & Trexler 1974), the Alternative Uses Test (Wilson et al 1975), and the Means End Problem Solving Procedure (MEPS) (Platt & Spivack 1975). Schotte & Clum hypothesised that suicide contemplators would a) have higher self rated depression levels, b) report higher levels of negative life stress, c) have higher hopelessness scores, d) perform less well on the MEPS and e) display less flexibility on the Alternative Uses Test. Of the 175 students who took part in their study 96 admitted the presence of some suicide ideation the remaining 79 subjects were used as noncontemplating controls.

The results of their study revealed that suicide contemplators reported significantly more negative life events, were significantly more hopeless and rated themselves as significantly more depressed than did the non-suicide contemplating control subjects. The results also showed that poor problem solvers under high stress were significantly higher on suicide intent than any other subject group. Interestingly Schotte & Clum (1982) did not find that contemplators were more cognitively rigid than non-contemplators as measured by the Alternative Uses Test. Perhaps their most
interesting finding was that the subjects highest in suicide intent were the poorest at problem solving and also reported more than the average number of negative life events. This suggests that problem solving ability may have a role in the suicide ideation process. Schotte & Clum (1982) suggest that the role of problem solving deficits in the suicide ideation process may be -

"mediational in nature, that is, it is in conjunction with negative life stress that poor problem solving might lead to feelings of hopelessness, which in turn result in the development of suicide ideation and intent. One would not expect poor problem solving to be a detriment in the absence of problems in living or as defined here, life stress." p695, Schotte & Clum (1982)

Thus Schotte & Clum's (1982) study provided some support for their proposed stress - hopelessness model of suicidal behaviour where the deficit is a cognitive deficit in problem solving. Somewhat surprisingly the problem solving deficit was not cognitive rigidity as hypothesised by Schotte & Clum as there were no significant differences found on the Alternative Uses Test. Indeed the problem solving deficit only surfaced when the subjects were divided on the basis of scores on the Life Experiences Survey and the Means Ends Problem Solving Procedure. When this division of subjects was performed poor problem solvers with high levels of negative life stress were found to be highest on suicide intent.

The model was then tested with a clinical population (Schotte & Clum 1987). This study was conducted using 50 hospitalised patients on suicide "watch" and a control sample of 50 nonsuicidal hospitalised patients. In this study the same battery of questionnaires as in the 1982 study were used. In general their findings were in support of their hypothesis that suicidal individuals are deficient in impersonal and interpersonal problem solving, experience more stress, and are more hopeless. The specific findings were that - 1) suicidal subjects reported a significantly greater level of negative life stress than did the noncontemplating controls, 2) the suicidal subjects were
significantly more cognitively rigid than their nonsuicidal peers on both the impersonal and interpersonal measures of cognitive rigidity used in the study, and 3) the suicide contemplators reported 1.5 times the level of hopelessness as that reported by the noncontemplating controls. In addition to the above findings their study reported that negative life stress was positively correlated with both the degree of hopelessness and suicide intent. This meant that as negative life stress increased so too did the level of hopelessness and suicide intent. Schotte & Clum (1987) concluded that as the number of problems increased for an individual their confidence in their ability to cope decreased. Indeed the results of their study suggested multiple problem solving deficits in suicidal psychiatric patients. Schotte & Clum (1987) suggested the following conceptualisation of these problem solving deficits using D'Zurilla and Goldfield's (1971) model of problem solving - a) an inappropriate general orientation or set toward problems, b) difficulty in generating potential alternative solutions to problems once they have been identified, c) a tendency to focus on the potential negative consequences of implementing alternatives generated and d) insufficient implementation of viable alternatives.

Schotte and Clum (1987) further developed their model of suicide ideation by questioning whether the problem solving deficits observed in suicidal patients were a state dependent variable rather than a trait characteristic. Thus they questioned whether the cognitive rigidity observed in suicidal patients was the cause of problem solving deficits or was the result of negative life stress (Schotte & Clum 1987).

To investigate further the nature of problem solving deficits in suicidal people to determine whether their problem solving deficits are a trait characteristic or are a state dependent variable Schotte, Cools and Payvar (1990) conducted a further study with 36 inpatients on suicide observation. All of these subjects were expressing current suicide ideation, 39% were admitted after a suicide attempt and 22% had a history of suicide attempts. This study examined the stability of interpersonal problem solving skills in a
short term (8 days), longitudinal study of hospitalised suicide contemplators. Subjects were assessed by the following measures on day one of admission and day 7-8 post admission. The measures used were depression (BDI), state anxiety (State Trait Anxiety Scale), hopelessness (Hopelessness Scale), suicide intent, (SSI) and interpersonal problem solving skills (MEPS).

A repeated measures MANOVA with the scores on the BDI, STAI, HS and SSI as the dependent variables and time of assessment as the independent variable was conducted to test their hypothesis that scores on measures of mood and suicidality would improve over the interval between time one and time two. These analyses revealed significant effects for time on the BDI, STAI, HS, and SSI. Significant results were also found for changes in problem solving skills over time.

Schotte et al. (1990) found that problem solving skills improved over the 8 day interval. This suggests that problem solving deficits may be a state dependent variable rather than a trait characteristic of suicide contemplators.

Schotte et al’s work over three studies (Schotte & Clum 1982, 1987, Schotte et al. 1990) reveals that problem solving deficits are related to the suicide ideation process as outlined in their model. However the most recent study suggests that this relationship is more likely to be one where problem solving deficits are a concomitant of depression, hopelessness and suicide intent rather than a cause of the suicide ideation process.

Schotte and Clum’s model is based on the assumption that if a person is cognitively rigid (ie. a poor problem solver) then they will be less able to deal with negative life stress and will become hopeless placing them at higher risk for suicide ideation. By being able to solve their problems they will then not become depressed, hopeless and suicidal.

In this model problem solving ability is measured by use of the Means Ends Problem Solving Inventory (MEPS) which is a measure of interpersonal problem solving ability. The MEPS is an inventory that measures respondents responses to hypothetical problems and measures the number of steps respondents use to solve these
problems. While the MEPS appears to have good face validity as a measure of problem solving skills it has been criticised on a number of grounds. Butler & Meichenbauer (1981) suggest that the MEPS tests hypothetical problem solving tasks and its generalisability to real life problem solving situations has not been satisfactorily tested. A further criticism of the MEPS is that it has been found to be significantly correlated with verbal intelligence (Butler & Meichenbaum 1981).

The problem with assuming that good interpersonal problem solvers will not become depressed and hopeless if faced with a great deal of negative life stress is that many of the problems that occur in people's lives lead to negative life stress cannot be "solved". There are certain forms of negative life stress that cannot be solved by even the best interpersonal problem solver. For example the death or injury of a loved one is an event which causes negative life stress. This type of event is not a problem to be solved but is an experience to be dealt with, coped with and lived through.

Schotte and Clum's model has received increasing research attention with numerous studies providing support for the proposed association between the model's variables (Bonner & Rich 1987, Dixon, Heppner & Rudd 1994, Heppner & Anderson 1991, Lerner & Clum 1990, Priester & Clum 1993). These studies have also found that deficits in problem solving ability are related to increases in hopelessness and suicide ideation. Dixon, Heppner & Anderson (1991) expanded the research linking problem solving skills to suicide by examining the role of problem solving appraisal. The subjects for their study were 1277 students enrolled in introductory psychology courses. They examined the relationship among problem solving appraisal, negative life stress and suicidal thoughts. They predicted main effects for both problem solving appraisal and stress such that higher stress and ineffective problem solving would independently be associated with higher levels of suicide ideation. They also examined which of the three Problem Solving Inventory (PSI) factors (problem solving confidence, approach avoidance style and personal control) is most strongly related to suicide ideation. They
hypothesised that problem solving confidence would have the strongest relationship with suicide ideation of the three PSI factors. In part 2 of their study they examined the relationship between problem solving appraisal and hopelessness. They used the Life Experiences Survey (LES) (Sarason et al 1978), the Scale for Suicide Ideation (SSI) (Beck et al 1979), the Hopelessness Scale (HS) (Beck et al 1974) and the Problem Solving Inventory (PSI) (Heppner & Peterson 1982). Dixon et al (1991) faced some statistical difficulties because the mean SSI score was a low 1.5 meaning that the majority of the students appraised themselves as very low suicide ideators. Despite this difficulty Dixon et al (1991) used a hierarchical multiple regression to analyse the data. They found that problem solving appraisal (PSA) and negative life stress (NLS) accounted for 12.1% of the variance in suicide ideation with PSA contributing 1.4% and NLS contributing 10.7%. The problem solving by stress interaction was not significant. As predicted they found that problem solving confidence had the strongest relationship with suicide ideation. They found that the relationship between approach avoidance style and personal control with suicide ideation was not significant. Part two of the study found that 15.2% of the variance in hopelessness was accounted for by problem solving appraisal. Once again problem solving confidence was found to have the strongest relationship with hopelessness, with approach avoidance style and personal control not having a significant relationship with hopelessness.

Schotte & Clum (1982,1987) proposed that the role of problem solving deficits may be mediational. That is poor problem solving might lead to feelings of hopelessness which in turn result in development of suicide ideation. Dixon, Heppner & Rudd (1994) more directly tested the suspected mediational nature of hopelessness between problem solving appraisal and suicidal behaviour. Their study used structural equation modelling with latent variables to evaluate whether the construct of hopelessness mediated between the construct of problem solving appraisal and the construct of suicide ideation in a sample of suicide contemplators and suicide attempters. Dixon et al. (1994) suggested that as a research tool structural equation
modelling has the benefit of being able to provide information about the direct effects among variables and importantly it can provide information about the complex indirect and mediating relations among variables. The subjects used in the study were 217 people who were participants in an intensive outpatient program that targeted suicidal behaviour in young adults. Their sample included 91 subjects with documented suicide attempts and 126 subjects who reported episodic suicide ideation warranting psychiatric care. The measures used were the Hopelessness Scale (Beck et al 1974), Modified Scale for Suicide Ideation MSSI (Miller et al 1986), Suicide Probability Scale (SPS) (Cull & Gill 1982) and the Problem Solving Inventory (PSI) (Heppner & Petersen 1982). To evaluate the mediational model proposed by Schotte & Clum (1982,1987) Dixon et al (1994) used structural equation modelling to test three competing conceptual models. They noted that these analyses cannot prove causality but can provide at best a provisional step in the testing of competing conceptual models. The first model they tested examined only the direct effects of both problem solving appraisal and hopelessness in predicting suicide ideation. This model did not allow for any indirect effects of problem solving appraisal. It was hypothesised that this model should not fit the data because hopelessness was proposed to mediate the relation between problem solving and suicidal behaviour. Each of the models was tested with the Proc Calis procedure and the maximum likelihood method in the SAS as well as other goodness of fit tests. As predicted the first model did not fit the data well. The second model tested examined the direct effects of hopelessness in predicting suicide ideation as well as the indirect effects of problem solving appraisal (through its effect on hopelessness) in predicting suicide ideation. This model was predicted to fit the data well because it tested for the mediating effects of hopelessness - which accords with Schotte & Clum's (1982,1987) theory. This model was found to fit the data well. The results were found to indicate a significant direct path between hopelessness and suicide ideation so that increases in hopelessness were associated with increases in suicide ideation. The results also indicated a significant direct path between the constructs of problem solving appraisal and hopelessness so that increases in ineffective problem solving were
associated with increases in hopelessness. Importantly Dixon et al. (1994) found that this model was consistent with the mediational hypothesis of Schotte & Clum's (1982, 1987) theory with the results indicating a significant indirect effect of problem solving appraisal (through its impact on hopelessness) in predicting suicide ideation. The third model tested for the direct effects of hopelessness and problem solving appraisal in predicting suicide ideation as well as for the indirect effects of problem solving appraisal (through its impact on hopelessness) in predicting suicide ideation. This model was found to also fit the data well. The results indicated a significant direct path between hopelessness and suicide ideation so that increases in hopelessness were associated with increases in suicide ideation. The results showed a significant direct path between problem solving appraisal and hopelessness so that increases in perceived ineffective problem solving were associated with increases in hopelessness. The results indicated that the direct path between problem solving appraisal and suicide ideation was not significant. Consistent with Schotte & Clum's (1982, 1987) theory the results indicated a significant indirect effect of problem solving appraisal (through its impact on hopelessness) in predicting suicide ideation. Dixon et al (1994) then compared models two and three and found that the second model fitted the data more closely than did model three. Thus the results of this study provide direct support for Schotte & Clum's (1982, 1987) diathesis stress-hopelessness theory of suicide ideation. The results strongly support the mediational nature of the proposed model where hopelessness mediates the relation between problem solving appraisal and suicidal ideation. Dixon et al's (1994) study provides strong support for aspects of Schotte & Clum's (1982, 1987) theory however their research did not test for the role of stress. Stress is a fundamental factor in the model as Schotte and Clum (1982) suggest that the role of problem solving is mediational in nature, that it is in conjunction with negative life stress that poor problem solving leads to feelings of hopelessness. As they logically point out we would not expect poor problem solving to be a detriment in the absence of problems in living, defined as negative life stress. Dixon et al's (1994) research probably found support for the model without testing for stress because their subjects may have been very similar.
in levels of negative life stress, given that they all had thought about and or attempted suicide. Dixon et al. (1994) conclude their paper by calling for more research that examines the relations among all of the components of the model especially research that includes stress as a component and tests for its interactions. They also call for the research of more complex models of coping and adjustment as well as for more sophisticated research strategies.

If problem solving is seen as only one form of coping (Folkman 1984) then the Schotte & Clum model may be limited in its assessment of a person’s range of responses to negative life stress and coping research may have much to offer to the understanding of suicidal thinking and behaviour.

**Stress and Coping Research**

Coping research (Carpenter 1992, Folkman and Lazarus 1984, Folkman 1992, Billings and Moss 1984) suggests that problem solving style is only part of the way people deal with negative life stress in their lives. In Schotte & Clum’s (1982) original model it was proposed that a person faced with a high level of negative life stress who was a poor problem solver (cognitively rigid) could become hopeless in the face of their inability to solve the problems and that this could lead them to start thinking about suicide. This model focuses only on dealing with negative life stress by the use of problem solving skills which in the light of coping research (Carpenter 1992, Folkman and Lazarus 1984, Folkman 1992, Billings and Moss 1984) may be limited in its approach to the ways people deal with negative life stress.

The early models of coping were based on psychoanalytic ego psychology. These models specified a priori that certain processes were more functional or adaptive than others and classified individuals according to their pervasive use of a particular coping processes. The ego psychology model of coping is based on the concept of defences which are unconscious adaptive mechanisms that are a major means of
managing instinct and affect. Their are a number of limitations to this model resulting in it only being accepted by those who continue to subscribe to analytic psychology. The limitations include the a priori judgement of a particular coping process as being adaptive or maladaptive without sufficient account being taken of the nature of the particular stressor. A further limitation of this model is that with coping rigidly defined in terms of defence processes reducing tension and restoring equilibrium there is insufficient attention paid to the problem solving functions of coping.

Subsequently researchers moved away from the psychoanalytic approach and developed trait measures and models of coping. Kessler, Price, Wortman, (1985) report that investigators have conceptualised coping as a dispositional trait or a typical, habitual preference to approach problems in particular ways. There has been some dispute about whether coping styles are a trait or state related phenomenon. However, there is some evidence that coping style tends to be a well maintained phenomenon, that is more trait like, in that people tend to traditionally use the same sort of coping methods over time. Indeed Gorzynski (1980) in a study of coping following breast surgery report striking stability of dispositional coping style over a ten year period. Stone and Neale (1985) and Pearlin & Schooler (1978) have also reported that people are relatively consistent in the coping strategies that they use to deal with the same problem or role domain on different occasions.

Coping traits were regarded as dispositional characteristics which predispose people to react in certain ways in certain situations. A difficulty with this approach is that researchers only measured coping along a single dimension such as regression - sensitisation (Shipley, Butt, Horvitz & Farby 1978) or coping - avoiding (Goldstein 1959, 1973) as a result they probably underestimated the complexity and variability of coping attempts. The assumption underlying this model is that coping is a personality variable which influences behaviour in a wide range of situations. A further assumption is that a persons coping behaviour in a wide range of circumstances can be predicted
from the individual scores on a measure of a coping trait or disposition. Unfortunately measures of coping traits and dispositions are generally not predictive of how a person copes in an actual naturally occurring stressful event (Cohen & Lazarus 1973). Further, trait measures along a single continuum are unidimensional while coping has been shown to be a multi dimensional phenomenon (Billings & Moos 1984, Stone and Neale 1984, Carver, Scheier & Weintraub 1989). Trait measures are therefore somewhat inadequate with respect to describing the richness and complexity of the actual coping process.

In recent years the research of Folkman and Lazarus in particular has led research away from conceptualising coping as a particular attribute of the person (Folkman & Lazarus 1984, 1985, 1986, Folkman 1992). Folkman and Lazarus (1985) emphasise that coping is a process with complex feedback loops and constant updating. Folkman, Lazarus, Dunkel-Schetter, DeLongis, Gruen, (1986) define coping as the person's constantly changing cognitive and behavioural efforts to manage specific external and or internal demands that are appraised as taxing or exceeding the person's resources. Folkman supports the contextual model of coping. Within the contextual model, coping is assessed in relation to specific stressful situations. The assumption underlying the contextual model is that coping thoughts and acts are influenced by the relationship between the person and the environment in a given stressful encounter.

Folkman (1992) suggests that the coping process continuously changes as a function of ongoing appraisals and reappraisals of the shifting person - environment relationships. Shifts due to coping efforts directed at changing the environment or to changes in the environment independent of the coping efforts. Any shift is said to lead to a reappraisal of the situation which in turn influences subsequent coping efforts thus coping changes as an encounter unfolds and from encounter to encounter. Folkman (1992) says that within the contextual model coping has two major functions: management of the problem (problem focused coping) and the regulation of emotion
(emotion focussed coping). Two functions which have previously been recognised by a number of researchers (Mechanic 1962, Billings and Moos 1981). The contextual model also has its limitations. In order to have an effect on outcomes of importance such as psychological well being, physical health and social functioning there has to be some stability in coping processes over occasions and time. However as Folkman (1992) points out the contextual assessments of coping have shown that people vary their coping from context to context depending for example on whether the event is a harm, loss or threat event, social role is involved, environment and social factors (Parkes 1986) and what is at stake and what the options for coping are (Folkman and Lazarus 1985,1990).

It appears that the difficult task for researchers is to identify aspects of coping which are stable over time and over contexts. There is some evidence for the existence of stable aspects of coping over time. Folkman, Lazarus, Gruen and Delongis (1986) looked at eight types of coping over five different encounters. They found that intraindividual autocorrelations ranged from .17 (for seeking social support) to .47 (for positive reappraisal). A result of .47 shows a high degree of stability. Carver et al (1989) also found evidence of stability of certain aspects of coping. They examined the correlations between scores from a situational and dispositional version of COPE (Coping Orientation and Problems Experienced Scale). Of the 14 subscales assessed the correlations from 4 scales, - the emotional support scale, the focus venting emotion scale, the mental disengagement scale and the alcohol drug use scale were greater than .35.

The concept of coping and the role that it may play in a stress- psychopathology relationship has been in the research literature for decades (Meninger 1963 and Valliant 1977). Thus it is important that coping style be considered in any model of suicide ideation because poor coping strategies have been implicated in the later development of psychopathology and in later health outcomes. Tobin, Holroyd, Reynolds, Wigal,
(1989) report that the construct of coping has become central to stress theory because it has been recognised that the health consequences of stress are influenced by coping as well as the amount of stress to which an individual is exposed. While Hovanitz & Kozora, (1989) point out that the life stress field has paid little attention to the role played by coping strategies in the subsequent development of psychopathology several researchers have attempted to elucidate the possible relationship.

Clark and Hovanitz, (1989) report that attempts to identify the manner in which coping acts to influence the life stress-psychopathology relationship have resulted in two different models. First the mediation model proposes that coping directly affects the psychopathology independent of the presence of life stress. Alternately the moderation model proposes that coping acts as a moderator variable in which certain types of coping lead to a differential impact in the linkage between stress and psychopathology (Billings & Moos 1981).

Given the gender differences outlined earlier in both completed suicides and in attempted suicides gender differences in coping are also of particular interest. Hovanitz, (1986) conducted a study into coping style and its effects on later psychopathology. She found that there were sex differences in 1) the type of coping style related to psychopathology, 2) the relative contributions of coping style and negative life stress to psychopathology and 3) the percentage of variance accounted for in psychopathology. Hovanitz, Kozora, (1989) conducted a further study into possible relationships between coping style and later psychopathology. They found that: females reported significantly more use of social centred coping than males, problem focused coping styles scores were significantly higher for the normal group than the clinical group, female effective copers reported using less self denigration and less avoidance, and males effective copers used significantly more problem solving. To summarise they found evidence for the moderating role of coping style in the general relationship between life event stress and psychopathology. Significant gender differences in this relationship were
found. Males tended to use higher levels of problem solving while females tended to use higher levels of social support.

Several studies have examined the coping strategies of adolescents (Puskar & Lamb 1991, Puskar, Hoover and Mieald 1992, Knapp, Stark, Kurkjian & Spirito 1991, Spirito, Stark, Grace & Stamoulis 1991). The coping strategies of adolescents hospitalised in a psychiatric hospitals were studies by Puskar, Hoover and Mieald (1992). They compared the coping methods of 30 adolescents who had recently exhibited suicidal behaviour with 16 adolescents who had no history of suicidal intent, plan, or behaviour. The measure of coping method used was a 40 question self report questionnaire with a five point likert scale. The results of the study revealed that adolescents hospitalised for suicidal behaviours used affective-oriented coping methods significantly more than problem oriented coping methods (t = 2.24, p <.05). Adolescents hospitalised for nonsuicidal behaviours used both affective- oriented coping methods and problem-oriented coping methods to deal with stress. Interestingly the two groups did not differ significantly on the degree to which they used affective coping methods. Rather, the significant finding of the study was that adolescents with a history of recent suicidal behaviour used affective coping methods significantly more so than they used problem oriented coping methods. Of the five coping method variables measured in the study the most effective problem oriented was ranked fourth in use by the adolescents with the suicidal behaviour history.

Another study looking at coping styles and adolescents was conducted by Spirito, Overholser and Stark (1989). They investigated the precipitant problems experienced and the coping strategies used by adolescent suicide attempters. They compared the coping strategies of 76 adolescent suicide attempters with 186 controls divided into distressed and nondistressed. They used a checklist designed by the authors to assess cognitive and behavioural coping strategies. The checklist included the following ten strategies, distraction, social withdrawal, wishful thinking, self criticism,
blaming others, problem solving, emotional regulation, cognitive restructuring, social support and resignation. This study found that when coping strategies were examined the similarity between suicidal and nonsuicidal adolescents in terms of their use of coping strategies was striking. The groups differed only on social withdrawal and wishful thinking. The authors suggested that social withdrawal may be a particularly maladaptive coping strategy and may increase the likelihood of a suicide attempt.

The central theme of coping research is whether among individuals exposed to a particular stressful experience variation in coping strategies is associated with variation in emotional adjustment. Carpenter (1992) suggests that recognising the ways in which coping outcomes relate to stress outcomes can also help us postulate possible mechanisms by which coping can contribute to positive results. For example coping can act 1) as a buffer of the effects of stress, 2) to counteract the effect of stress by directly leading to improved outcomes or 3) to remove stress and thereby reduce its impact. He also reports that the stress coping paradigm includes related features such as appraisal and resources which readily imply four ways in which coping can impact the system 1) minimise the stress response, 2) remove or reduce demands, 3) increase resources or 4) alter appraisal.

The purpose of the present study is to extend the Schotte and Clum (1982, 1987) model of suicide ideation by investigating the relationships that different coping strategies may have with the existing variables of the model. The potential benefits of understanding the role that coping strategy variations might play in the suicide ideation process are many. Firstly it may be that particular coping strategies can be identified as being effective ways of dealing with negative life stress. These effective coping strategies may "short circuit" the existing model. That is, poor problem solvers faced with significant negative life stress may fail to solve their problems but may employ other effective coping strategies and prevent hopelessness and depression. Secondly it
may be possible to identify particular coping strategies which are associated with negative outcomes such as hopelessness.

If particular coping strategies or styles can be identified as playing a role in the suicide ideation process, whether positive or negative, this would be very useful information for clinicians. For example it may be possible to identify people at risk of suicide ideation and then to teach them more effective coping strategies.

Therefore the specific aim of the current study is:

to explore the possible relationships between coping strategies as measured by the Coping Strategies Inventory (CSI, Tobin 1982), and the factors of the suicide ideation model proposed by Schotte and Clum (1982,1987) with an Australian student sample.

Figure 2 below outlines two possible areas within the Schotte & Clum (1982,1987) model where coping resources may be found to impact. Coping resources may impact at point 1. Here the possible effect of negative life stress and problem solving appraisal on hopelessness may be mediated by coping resources (other than problem solving appraisal). Other coping resources may be found to lessen the impact of negative life stress and problem solving appraisal on hopelessness. A second area where coping resources may impact the model is at point 2 in Figure 2. Point 2 is the relationship between hopelessness and suicide ideation. It may be that feelings of hopelessness can be lessened by coping resources and therefore the effect of hopelessness on suicide ideation may be lessened.
The current study is cross-sectional in design and therefore it will not be possible to discuss causal relationships between variables or the direction of influence between variables. Rather, it will only be possible to investigate the associations between variables. Cross-sectional studies of this design are confined in their statistical analysis and interpretation, however they are still very useful because they often justify the more costly and time-consuming longitudinal studies needed to infer causality.