CHAPTER II

REVIEW OF RELATED LITERATURE AND FORMULATION OF HYPOTHESES

With a view to seek some guidelines* from the previous researches, which could be helpful in formulating the present investigation, the results of some of the representative studies are discussed below. The review of studies has been used for the formulation of hypotheses. The present review is by no means exhaustive, it is an attempt to indicate the main trends in research and theory which have a direct or indirect bearing on the present problem.

The phenomenon of suicide is a complex, multi-faceted one with many problems related to management and treatment. Many efforts have been made to identify and predict self-destructive tendencies. These have experienced difficulty primarily because suicide is very complicated, takes many forms, and expresses itself in many ways. While the end-result of some of the behavior is deceptively the same, that is death, the paths along which suicidal persons progress before

* What is already known, what others have attempted to find out, what problems remain to be solved, what methods of attack have been promising or disappointing, the techniques and methodology followed by earlier investigators etc.
they reach the final end-result are many.

The literature on suicide is extensive and includes literary and philosophical analyses (e.g., Alvarez, 1972; Choron, 1972) and numerous investigations of sociological, demographical, and psychological dimensions related to suicide. Thus, the phenomenon of suicide has been investigated in widely divergent ways and though the theoretical, clinical, and empirical literature is extensive, there has been relatively little integration. It is beyond doubt that each of these approaches has yielded valuable insights to the concomitants of suicide, but no approach has provided a royal road to understanding, each is a "style of explanation".

* In the scientific study of suicide, two approaches have been most evident. The first, deriving its impetus from psychoanalytic theory, focuses the search for the cause of suicide upon the individual and his idiosyncratic history. The second derives from the sociologist Durkheim and his investigation of the influence of societal variables upon suicide rates. In addition, the thwarting - disorientation (TD) theory of suicide developed from the work of Naroll (1962, 1963), is an attempt to afford recognition to the interaction of both sociological and psychological factors in determining the suicidal act. In place of distinct sociological and psychological explanations of suicide, Naroll's theory utilizes a concept, TD, applicable at both the sociological and psychological levels of analysis. Krauss & Krauss (1968) found confirming evidence for Naroll's theory.
Theoretical approaches to suicide have included studies of the dynamics involved in suicidal behavior, as well as interpretations of the various modes employed. Freud (1949a, 1949b), who has exerted the greatest single influence, asserted that suicide is a turning in of aggressive impulses in the service of the death instinct. The more one fails to express aggressive impulses outwardly, the stricter the conscience, the more repression of aggressive impulses and feelings, and the more self-aggression one may expect. Suicide is a product of pathological ambivalent object relations; the intense hostile to self. Freud (1949b) hypothesized in a case history, operated to defend against unacceptable oedipal love impulses. Bender & Schilder (1937) and Moss & Hamilton (1956) also emphasized attempted suicide to be based on aggression that has become self-directed.

Freud (1917/1957) struggled with the problem of how the ego, with its self-love and narcissistic libido, could allow its self-destruction. The answer, he theorized, lies in the ego's treating itself as an object, directing against that object the hostility and sadism that were its original reaction to objects in the outside world. Freud (1920/1950) later added to his theory the concept of a drive toward death, to be found in
the controlling, coercing, and punishing components of the superego. In depression, the superego obtains a hold on consciousness and as a "pure culture of the death instinct", drives the ego into death.

Other psychoanalytic thinkers have modified this theory. Zilboorg (1937) wrote that suicide is likely only when the individual has identified with a dead person, and that the process of identification has to take place during childhood or adolescence, at a time when the incorporated person is already dead. Menninger (1938) agreed with Freud that suicide is the wish to kill another turned inward, but he also saw it as the ego's punishing itself for that crime and wishing to be killed.

Although the early psychoanalytic literature on suicide was based primarily on case studies, later writers have attempted broader, more experimental analyses of the role of aggression in suicidal behavior. Their results are inconclusive. Several researchers found that suicidal individuals are more hostile than nonsuicidal (Vinoda, 1966), that their dreams contain more themes of violence than control subjects (Raphling, 1970), and that they tend to resent those on whom they depend (Lester, 1969). Others found no significant
differences in aggressive impulses or ideation between suicidal and nonsuicidal subjects (Fisher, 1971; Eisenthal, 1967).

It is significant to emphasise that the hypothesis of inner-directed aggression originating with Freud (1917/1957) has provided the basic framework for most subsequent studies of suicide (Gould, 1965; Moss & Hamilton, 1956; Menninger, 1938; Bender & Schilder, 1937). Stenzel (1964) and Farberow and McEvoy (1966) take exception to this theory and argue that aggression directed toward others, not toward oneself, is more typical of suicide attempter. Perhaps the disagreement is due, in part to the fact that aggressiveness is too simple a concept. It may be necessary to investigate not only aggressive needs in general but also aggression in relation to the ability to tolerate frustration. Freud suggested that suicidal individuals turn aggression inward because of the internalization of hatred and the resultant feeling that the individual is worthy only of punishment. Although the theory may be correct, it does not appear to represent the entire picture. It is possible that youthful attempters, although they may see themselves as worthless, may also see parents as deserving of anger and consciously use the suicide attempt as an aggressive act aimed
An investigation (Lester, 1967) used a non-
hospitalized population to investigate the aggressive
tendencies of the suicidal person. The subjects were
43 undergraduates from an introductory course in psycho-
logy. Of the 43 subjects, five had attempted suicide,
five had threatened suicide, 19 had considered suicide
and 14 had never considered suicide. The mean ages
of the groups were 17.8, 18.2, 18.2, and 18.4 years
respectively. Aggression was measured with the (Buss
and Durkee, 1957) hostile scale, since this scale pro-
vided measures of eight different types of hostility
and, therefore, a more complete picture of the aggressive
tendencies of individual's than techniques that assess
only extrapunition and intropunition. Only two subscales
of the hostility inventory differentiated significantly
between the suicidal and nonsuicidal groups. The attem-
pted and threatened suicides showed most resentment
and the nonsuicidal group least resentment (F = 6.9,
df = 2/39, p < .01) and the attempted and threatened
suicides showed most irritability and the nonsuicidal
group least irritability (F = 4.1, df = 2/39, p < .05.
The other scales produced nonsignificant differences.
Those who had attempted or threatened suicide did not
differ from nonsuicidal subjects in the manner and
at disturbing parents and evoking sympathy and guilt.
direction of expressing aggression. Suicidal subjects were more irritable and had more resentment than the nonsuicidal subjects. These results do not support theories of suicide which view suicidal behavior as an act of inward directed aggression.

The results of another significant investigation (Cantor, 1976) concerning characteristics found among youthful female suicide attempters, have shown suicidal young persons to be characterized by a low tolerance for frustration as well as by a tendency to express aggression directly against the frustrating source rather than thwarting aggression or turning it inward. Another possible facet of the disagreement may lie in the fact that Freud's theory of internalized aggression was originally intended to apply to completed suicide and subsequently has been generalized to attempted suicide. It is possible that a particular theory may be applicable to completed suicide and not to attempted suicide. This may be an important distinction in that there seems to be sufficient justification to warrant distinguishing between attempters and completers on the basis of data that less than 10% of those who attempt suicide will later commit suicide do so on their first attempt (Stengel, 1964).
Depression, Hopelessness, Social Desirability and Suicidal Behaviour

The relationship of hopelessness, depression, social desirability and suicidal behavior has been the focus of several studies. The findings relating hopelessness, depression, social desirability and suicide are of special interest.

Both mental health professionals and members of the general public appear to believe that depression and suicide threats are precursors of, or accompany, suicidal attempts. Depression is consistently reported as an accompaniment of suicidal behavior and it has been found to be the most common clinical syndrome preceding suicidal behavior in studies of both attempters and completed suicides (e.g., Barraclough, Bunch, Nelson, & Sainsbury, 1974; Silver, Bohnert, Beck, & Marcus, 1971). However, studies have shown that depression and its relation to the potential for suicide is nevertheless a difficult and important problem. Suicidality and depression have indeed emerged as independent factors in few researches (Paykel, Weissman, Prusoff, & Tonks, 1971), and some studies report a relatively small percentage of subsequent suicides in depressive populations (Paykel & Dienelt, 1971; Eisenthal, Farberow, & Shneidman, 1966). Sonneck, Grunberger, & Ringel (1976) study provided support for
both the "depressed" and "neurotic" hypothesis. Although suicidal depressives were more depressed and more inhibited than nonsuicidal depressives, suicidal depressives were also more excitable (which suggests high arousability, as with neurotic or anxious types).

Murray (1973) examined suicidal and depressive feelings among college students. A questionnaire concerning their suicidal and depressive thoughts was administered to a sample of university students. Over 40% had thought of killing themselves and less than 10% denied at least having felt deeply discouraged and unhappy. Religion was related to the presence of suicidal thoughts, and sex to reported frequency of such thoughts. Students were most likely to tell a friend of such thoughts, and, at a significant level, the friend was of the same sex as the respondent. Scores on locus of control, social desirability, and test anxiety measures were unrelated to suicidal and depressive thoughts. Perhaps more than anything, the present data are consistent with a growing literature indicating the pervasity of deeply dysphoric thoughts. Most people are likely to experience such thoughts at some time in their lives, and even in people considered "normal", such thoughts may turn in the direction of self-destruction. The investigator questioned the utility of reported depressive and suicidal thoughts as predictors of suicidal behavior.
Working on similar lines, Leonard (1974) conducted an investigation to study the relationship between depression and suicidality. Subjects were 38 male and 52 female inpatients in a voluntary psychiatric hospital located in a university medical school setting. The median age was 26, with a range of 15-66 years. Educational level was high, with 55% having had at least some college education. Length of inpatient hospitalization ranged widely with a median of 57, a mean of 99, and a range of 2-436 days. Suicidality ratings for 90 patients were correlated with five possible indices of depression: self-ratings of depression, Minnesota Multiphasic Personality Inventory, Depression Scale Score, depressive diagnosis, and alcohol and drug use. Both depression and suicidality emerged in the factor structure as multidimensional and relatively independent factors. Neither suicidal factor was accompanied by indications of depressive affect but rather by physical disequalibrium and control of dependency problems. That the suicidality factors did not load appreciably on MMPI psychopathology scale is noteworthy. Overt depressive measures were related in specific and complex ways to suicidality, while the possible covert depressive measures of alcohol and drug use did not correlate or correlated negatively with suicidality. The author further pointed out that depression is also widely present among persons who do not go on to commit suicide. The depression
reported in committed suicides may also be due in part to observer bias, since depression is expected and may thus be read in retrospectively.

Beck (1963, 1967) contended that specific cognitive factors (e.g., hopelessness and pessimism about the future) are more closely related to suicidal intent than are affective aspect of depression.

Beck, Lester, & Albert (1973) made an attempt to examine the relationship between suicidal wishes and symptoms of depression. Subjects were 254 consecutive attempted suicides admitted to a hospital. Data from 7 subjects were discarded since they did not complete the inventory. Subjects were 114 male and 140 female. Results indicated that suicidal wishes were significantly correlated 0.56 with pessimism, 0.55 with lack of satisfaction, 0.53 with depressed mood, 0.53 with sense of failure, 0.50 with guilty feeling, 0.47 with self-hate, 0.41 with crying spells, 0.41 with work inhibition, 0.39 with social withdrawal, 0.38 with negative body image, 0.34 with self-accusations, 0.30 with indecisiveness, 0.28 with sense of punishment, 0.27 with fatigability, 0.25 with appetite, 0.23 with loss of libido, 0.17 with irritability, 0.14 with somatic preoccupation, and 0.14 with sleep disturbance. Suicidal wishes were not significantly
correlated with weight loss (r=0.08). It can be seen that, among these attempted suicides, suicidal wishes correlate most highly with cognitive factors, such as pessimism and sense of failure, and with items dealing with mood and feeling (anhedonia). Suicidal wishes show comparatively low correlation with appetite disturbances, somatic preoccupations, and sleep disturbance.

The authors concluded that not all symptoms of depression are equally useful in predicting accompanying suicidal preoccupation. Those symptoms relevant to the patient's negative attitudes and to his anhedonia are substantially closer to the suicidal wishes than are the classical physical and vegetative symptoms of depression.

A close relationship has been found between hopelessness (defined as negative expectations about the future) and suicidal intent in a variety of clinical samples (Emery, Steer, & Beck, 1981; Wetzel, Margulies, Davis, & Karam, 1980; Weissman, Beck, & Kovacs, 1979; Minkoff, Bergman, Beck, & Beck, 1973). The studies have shown that the correlation between suicidal intent and depression has been consistently accounted for by hopelessness. In other words, the correlation often is no longer significant when the level of hopelessness is controlled statistically (through partial correlations).
Many clinical studies have supported Beck's claim showing that the correlation between self-reported depression and suicidal intent is due to the influence of hopelessness (e.g., Emery, Steer, & Beck, 1981; Wetzel, Margulies, Davis, & Karam, 1980; Weissman, Beck, & Kovacs, 1979; Wetzel, 1976; Kovacs, et al., 1975; Beck, Kovacs, & Weissman, 1975; Minkoff, Bergman, Beck, & Beck, 1973).

Patrie & Chamberlain (1983) conducted an investigation to evaluate hopelessness and social desirability as moderator variables in predicting suicidal behavior. The subjects were 54 attempted suicide patients interviewed at two New Zealand general hospitals. The average age of the subjects was 26.9 years (SD=10.9). Forty of the subjects were females. For 28 patients this was their first attempt, 13 had made two attempts, and a further 13 had made three or more. Within 2 days of their suicide attempt, subjects completed the Hopelessness Scale (Beck et al., 1974), the Crowne-Marlowe Social Desirability Scale (Crowne & Marlowe, 1964) and the Zung Depression Scale (Zung, 1965). Suicidal behavior was measured by a 7-items sub-scale of the Zung Index of Potential Suicide (Zung, 1974). Hopelessness and depression correlated at about the same level with the suicidal behavior. Hopelessness was found to be significantly correlated with the suicidal measures when depression was partialled out. However, controlling for hopelessness led to non-
significant correlation between depression and the suicidal measures. The authors concluded: "the frequently reported relationship between depression and suicidal behavior is shown in our study to be largely explained by hopelessness." These results further support Beck's (1963, 1967) view of hopelessness as an explanatory variable in suicidal behavior. Individuals holding a negative view of the future are at great risk of engaging in suicidal behavior. Likewise, Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983 investigation with children* (8 to 13 years old) revealed that the correlation between suicide ideation and severity of depression is no longer significant when the level of hopelessness is controlled statistically. In contrast, the relationship between suicidal intent and hopelessness remained relatively constant whether or not severity of depression was controlled. The correlation between hopelessness and suicide was not accounted for by depression. These findings are significant because they suggest that hopelessness, depression, and suicidal intent appear to be related in a similar manner for children and adults.

It is interesting to emphasize that few investigators have suggested that the strong correlation between hopelessness and parasuicidal behavior could be largely

* Hospitalized in a psychiatric intensive care service.
due to social desirability. The results, however, are not conclusive.

Linehan & Nielsen (1981) administered the Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974), Edwards' Social Desirability Scale (ESDS; Edwards, 1970), and the Suicide Behaviors Questionnaire (SBQ; Linehan & Nielsen, 1981) to a nonclinic sample of Seattle shoppers. They analyzed the data twice: once for the entire sample and once for a subsample who reported severe past suicidal thoughts or behavior. In both cases, the Edwards' Social Desirability Scale and Suicide Behaviors Questionnaire correlated quite strongly ($r_s=-.64$ and $-.73$, respectively). They also found significant correlations between the Edwards' Social Desirability Scale and Suicide Behaviors Questionnaire in both groups. However, when social desirability was controlled for, the correlation between hopelessness and suicide ideation dropped from $r=.40$ to $r_p=.16$ ($r_p$ partial correlation) in the general sample and from $r=.42$ to $r_p=.16$ in the subsample. The subsample partial correlation was not significant. Linehan & Nielsen (1981) suggested that the strong correlation between hopelessness and parasuicidal behavior could be largely due to social desirability.

Nevid (1983) pointed out that hopelessness and social desirability might be theoretically related.
Being hopeless might reduce one's inclination to respond in a socially desirable manner. Consequently, Nevid called for construct validation studies to determine whether the two constructs are factorially distinct. Nevid (1983) also questioned the generalizability of Linehan & Nielsen's (1981) results to clinical populations.

Responding to Nevid (1983), Linehan & Nielsen (1983) noted that although hopelessness and social desirability may be theoretically related, social desirability nevertheless contaminates the self-report of hopelessness and should be considered when attempting to predict suicide. Linehan & Nielsen (1983) reported a significant correlation between hopelessness and parasuicidal behaviors in a sample of psychiatric patients but no significant relation between social desirability and the self-reported likelihood of a future suicide attempt. Partialing out social desirability produced a small (nonsignificant) drop in the correlation between hopelessness and parasuicide. Linehan & Nielsen (1983) attributed the lack of a correlation between social desirability and parasuicide to the fact that these inpatients knew that their medical histories were available to the investigators; hence, why respond in a socially desirable manner? Linehan & Nielsen (1983) regarded the relatively low partial correlation between hopelessness and parasuicide as support for the
generalizability of their 1981 data to clinical populations. Petrie & Chamberlain (1983) demonstrated that hopelessness significantly correlated with parasuicide even after social desirability was statistically controlled.

Petrie & Chamberlain (1983) administered measures of depression, hopelessness, suicidal behavior, and social desirability to a sample of suicide attempters. They used the Marlowe-Crowne Social Desirability Scale (MCSDS: Crowne & Marlowe, 1964). As in the previous studies, they found a significant correlation between hopelessness and social desirability (r = -.30). Unlike the previous studies, the correlation between hopelessness and parasuicide did not diminish when social desirability and depression were controlled for. However, the correlation between depression and parasuicide did drop when social desirability was covaried. Petrie & Chamberlain (1983) attributed the discrepancies between their results and Linehan & Nielsen's (1981) findings to differences between treatment and nontreatment populations.

More recently, Cole (1988) conducted an extensive investigation to examine the relations between hopelessness, depression, social desirability, and parasuicide in two college student samples (treatment versus nontreatment). Subjects for the study were college undergraduate volunteers
at a private midwestern university. Approximately half (n=130) were volunteers from undergraduate psychology classes. The others (n=125) were students seeking therapy at the university psychology clinic. Subjects cited reasons for seeking treatment as emotional/personal (53%), social/interpersonal (27%), family related (26%), academic/career related (19%), and other (15%). All subjects were administered eight questionnaires: three depression inventories, including the Beck Depression Inventory, the Zung Depression Scale, and the MMPI Depression subscale; three social desirability measures, including the Edwards' Social Desirability Scale, the Marlowe-Crowne Social Desirability Scale, and the MMPI-K subscale; and the two measures of hopelessness, including the Beck Hopelessness Scale and a five-item questionnaire consisting of the rating scales that Beck et al., (1974) used to validate the Beck Hopelessness Scale.

Hopelessness did relate to parasuicide for the seeking treatment group, even after controlling for social desirability and depression. However, the hopelessness-parasuicide relation was nonsignificant for the nontreatment group. Furthermore, the choice of social desirability measures was critical. Edwards' Social Desirability Scale was overly sensitive to depression, particularly in the seeking-treatment group. Thus,
controlling for Edwards' Social Desirability Scale may lead investigators to underestimate correlations involving depression. The Marlowe-Crowne Social Desirability Scale did not have this problem. However, the Marlowe-Crowne Social Desirability Scale loading on the Social Desirability factor was lower than both the Edwards' Social Desirability Scale and the MMPI-K loadings.

The author pointed out that these results largely resolve some of the contradictions in the previous literature. For nontreatment samples, Linehan & Nielsen's (1981) claim was supported: Social desirability did account for the correlation between hopelessness and parasuicide. For treatment samples, however, Petrie & Chamberlain's (1983) claim was supported.

The author concluded that in nonclient samples, self-reported hopelessness has at best a very weak relation to parasuicidal behaviors. Among clients, hopelessness did relate to parasuicide once depression and social desirability were controlled for. Overall the investigation revealed that the relation between self-reported hopelessness and parasuicidal behavior depends on the population under investigation and the choice of social desirability measure makes a difference in the sense that different operationalizations of social desirability account for some of the contradictions in the previous literature.
Another study (Asarnow, Carlson, & Guthrie, 1987) evaluated factors associated with depression and suicidal behavior in 8-13 year old child psychiatric inpatients at the University of California, Los Angeles Neuropsychiatric Institute. Feelings of hopelessness were associated with both severity of depression and increased suicidal behavior. These results replicate Kazdin et al.'s (1983) findings of significant correlations between hopelessness and measures of depression and suicidal behavior. In contrast to Kazdin et al.'s (1983) report, however, the relation between hopelessness and suicidal behavior was not significant when depression was controlled statistically. Two limitations of this study merit note. First, severely disturbed child psychiatric inpatients were evaluated to provide a means of assessing the extent to which variables were associated specifically with either depression or suicidal behavior or were more general correlates of psychological dysfunction. Although this represents a major strength of the study, because a normal control group was not included in the study, it is not clear how the performance of the present sample would compare with that of a nonclinical sample. Second, the present sample size was small, and this underscores the need for the replication of results.

Cognitive Rigidity and Suicidal Behavior

Research supports the long-held proposition
(Binswanger, 1958; Shneidman, 1957, 1961, 1969; Menninger, 1938; Dublin & Bunzel, 1933; Cavan, 1928; Muhl, 1927) that suicide attempters are more cognitively rigid than their nonsuicidal peers. Specifically, they have been shown to perform more rigidly on the Rokeach Map Test and to have higher scores on the California F-Scale (Neuringer, 1964), and to perform less well on the Unusual Uses and Word Association Tests (Levenson, 1972).

Levenson & Neuringer (1971) made an attempt to evaluate the assumption that suicidal behavior in adolescents is linked to diminished problem-solving capacity. The WAIS Arithmetic Subtest and the Rokeach Map Reading Problems Test were administered to 13 suicidal, 13 psychiatric but nonsuicidal, and 13 normal adolescents. It was found that the suicidal group made significantly lower WAIS Arithmetic Subtest scores and failed the Rokeach Map Test Problems more often than the psychiatric and normal subjects. It was concluded that the assumption of diminished problem-solving capacity in suicidal adolescents is correct. Levenson & Neuringer (1974) found male suicide committers more field dependent, on the basis of intelligence test protocols, than a nonsuicidal psychiatric group. Taken together, their performances on measures of divergent thinking, such as the Unusual Uses and Alternate Uses Tests, suggest that suicide
attempters may have deficits in the capacity to generate a variety of logical alternatives, or possible solutions, in problem-solving situations.

To evaluate cognitive characteristics of suicide attempters, Patsiokas, Clum, & Luscomb (1979) conducted an investigation in which cognitive characteristics of rigidity, impulsivity, and field dependence were contrasted in a group of suicide attempters and a group of nonsuicidal psychiatric controls. Furthermore, it sought to examine age and diagnosis as possible moderator variables of the relationship of those cognitive characteristics and attempted suicide. The sample was composed of male psychiatric patients from the Veteran's Administration Hospital, Salem, Virginia. The suicide attempter group consisted of 49 patients who had been admitted for attempting suicide. The suicide attempter group ranged in age from 19 to 59 with a mean age of 36. The majority (51%) of suicide attempters were married; 29% were single and 20% were either divorced, separated or widowed. The control group was composed of 48 psychiatric patients chosen at random from the ward files with the important stipulation that there was no prior record of a suicide attempt. The mean age of the control group was 41, with a range of 19 to 64. Forty per cent of the control group were married, 32% were single, and 28% were either divorced,
widowed, or separated. Each subject in both groups was then administered the same test battery, which consisted of (a) the Embedded Figure Test, (Witkin, 1950); (b) the Alternate Uses Test (Wilson, Christensen, Merrifield, & Guilford, 1975); and (c) the Matching Familiar Figures Test (Kagan, 1965). Also, each subject was given a structured interview, which included such areas as psychological symptoms, suicidal plans, resources, and psychological symptoms. The suicide attempt group was characterized by greater rigidity in a divergent thinking task while controlling for age and diagnosis using multivariate analysis. Field dependence was more characteristics of the suicide attempters, but only in the 19-34 age group. Impulsivity did not differentiate the two groups. The results were interpreted as supporting a hypothesis of a cognitive predisposition to attempting suicide. The study found that age moderated the relationship between certain cognitive variables and suicide attempters. The findings indicate that suicide attempters are not a homogeneous group and that there may be specific subgroups of attempters, grouped by age, in which certain cognitive characteristics are important in determining whether suicide attempts occur. The present study focused on age as the main characteristic for subgrouping suicide attempters; it is possible that other ways of grouping attempters may exist. The results were interpreted as
supporting a hypothesis of a cognitive predisposition to attempting suicide.

Working on similar lines, Schotte & Clum (1982) conducted a study to examine the proposed diathesis-stress model (Patsiokas, Clum, & Luscomb, 1979) of suicide behavior in a group of college-aged suicide ideators, since Patsiokas et al.'s investigation was concerned with suicide attempters. More specifically, the study explored a model of suicide behavior asserting that when individuals who are cognitively rigid are placed under conditions of high stress they are likely to become hopeless and, consequently, to engage in suicidal behavior. Additionally, it examined individual elements of this model in terms of their ability to differentiate between suicide ideators and nonideators in college population.

A total of 175 students (87 men, 88 women) enrolled in Introductory Psychology at Virginia Polytechnic Institute and State University volunteered for this study. A packet containing the following measures was given to each of the students: the Life Experiences Survey (Sarason et al., 1978), a self-report adaptation of the Scale for Suicide Ideation (Beck et al., 1979); the Alternate Uses Test (Wilson et al., 1975); the Means-End-Problem-Solving Procedure (Platt et al., 1971); the
Hopelessness Scale (Beck et al., 1974); and the Zung (1965) Self-Rating Depression Scale. Results indicated that college-student suicide ideators are under higher levels of negative life stress, are more hopeless, and have higher levels of depression than their nonideating peers. Although no relationship was observed between suicide ideation and cognitive rigidity or suicide intent and cognitive rigidity, poor problem solvers under high stress were found to be significantly higher on suicide intent than any other group. Clearly, these findings suggest that problem-solving deficits may play a role in the development of suicide ideation and intent but that the role of problem-solving is probably 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. The results were interpreted as offering support for a stress problem-solving model of suicidal behavior in which poor problem-solvers under high life stress are considered to be at risk for depression, hopelessness, and suicidal behavior.

These discussions, in conjunction with the findings of empirical researches led these investigators (Schotte & Clum, 1982; Patsiokas et al., 1979) to propose a diathesis-model of suicidal behavior, whereby cognitive
rigidity (i.e., a relative inability to identify problems and their solutions) mediates the relation between life stress and suicidal behavior. Specifically, according to this model, individuals deficient in the capacity for flexible divergent thinking, when placed under naturally occurring conditions of high life stress, are cognitively unprepared to develop the effective alternative solution necessary for adaptive coping. As a result of their inability to engage in effective problem solving, they are assumed to become hopeless under such circumstances (Neuringer, 1974). This state of hopelessness places the individual at heightened risk for suicidal behavior.

More recently, Schotte & Clum (1987) extended previous research through an investigation of life stress, cognitive rigidity, interpersonal problem-solving skills, depression, and hopelessness within a sample of hospitalized psychiatric patients (72 male, 28 female) on suicidal observation status. More specifically, diathesis*—stress model of suicidal behavior was subjected to further evaluation in a sample of hospitalized suicidal psychiatric patients who had greater levels of suicide intent than did the college students studied by them in previous research (Schotte & Clum, 1982).

* Diathesis in question being a cognitive deficit in problem-solving.
The results provided support for a diathesis-stress model of suicidal behavior. The findings, however, were not completely straightforward. Interestingly, although hopelessness was found to be an excellent predictor of the level of suicide intent, as it has been in previous research (Schotte & Clum, 1982; Wetzel, 1976; Minkoff, et al., 1973), correlations between the degree of hopelessness and measures of interpersonal problem-solving skills were generally nonsignificant. Thus scores on this measure appear to reflect not hopelessness arising from deficits in interpersonal problem-solving skills, but rather a maladaptive general orientation or set toward problems. The authors concluded that this observation lends credence to Beck, Rush, Shaw, & Emery's (1979) admonition that both difficulties in generating potential solutions to interpersonal problems and hopelessness must be dealt with in the treatment of suicidal patients.

Another investigation (Froyd & Perry, 1985) examined how each of two factors, coronary-prone behavior and locus of control, are related to suicidal ideation in a college population. 43 students (23 men and 20 women) completed the Jenkins-Glass College Activity Survey, Rotter's Internal-External Locus of Control Scale, and a self-assessment questionnaire of suicidal ideation. The results supported the hypothesis that external locus of control correlates with suicidal ideation. The second
hypothesis, that type B men would have greater suicidal ideation, was not confirmed.

**Life Stress and Suicidal Behavior**

Recently there has been an upsurge of interest in the relationship between stressful life events and subsequent physical and psychological disturbances. One of the reasons for this has been the development of widely accepted measures of stress, such as the Schedule of Recent Experience by Holme & Rahe (1967). This instrument and its derivations have figured in many studies which have usually shown significant relationships between prior life changing events and physical illnesses of a minor or more major kind (Rahe & Lind, 1971; Rahe et al., 1964).

For many years there has been interest in a possible link between social stress and psychological disorder. Several authors have confirmed that individuals suffering from psychological disorders of one kind or another have experienced more stressful, or life changing, events than others similar in important respects but who are not psychologically disturbed. (Thompson & Hendrie, 1972; Hudgens, Robins, & Delong, 1970; Brown & Birley, 1968).
Work on parasuicide ("attempted suicide") has tended to focus on ecological correlates and the personality of those involved (McCulloch & Phillip, 1972). The studies that have been reported show that stress of one kind or another figures largely in the life of parasuicides before their act. Two basic themes in this research have emerged. First there appears to be the idea of stress resulting from poor social relationships and secondly stress resulting from a loss. Jacobs & Teicher (1967) concluded that adolescent parasuicides that they studied were likely to have had a history of interpersonal difficulties, but they did not specifically link immediate antecedent stress with suicidal behavior. Ganzler (1967) was also more concentrated with the subjective impression of loneliness, and the anticipation of loneliness among suicidal subjects than with objectively experienced social deprivations.

Lester (1972), in an extensive review of the correlates of suicidal behavior, reported that many studies have shown that suicidal individuals have suffered some form of loss prior to their attempt. This loss may be material, psychological, physical or social but no attempt has been made to quantify loss or to compare extent of loss-produced stress in suicidal and control groups.
In line with studies finding that adult and adolescent suicide attempters come from conflictual, unstable, unstructured and unloving home environments (Corder, 1974; Seiden, 1974; Haider, 1968; McCulloch & Phillip, 1967), the data of another investigation (Miller, Chiles, & Barnes, 1982) suggest that conflict between the attempter and family members may be a critical predisposing factor in a suicide attempt. Although the majority of adolescents in the sample reported that they came from a troubled home environment, only the attempters cited conflict with their parents as the principal cause of their problems. Only the attempters reported that they fought daily with their parents and that these altercations involved considerable physical, sexual, and psychological abuse. These data suggest that the attempters have learned from interacting with their parents to express feelings through actions and to use actions rather than words to resolve conflict.

The loss of one or both parents at an early age has been associated with suicide attempts among adolescents. In a study of a large number of adolescents who had attempted or completed suicide, Dorpat, Jackson, & Ripley (1965) found that half of their sample came from broken homes. Similarly, Stanley & Barton (1970) noted that 16 of the 17 adolescent attempters in their
sample had lost a parent before the age of 12, compared to 9 out of 16 matched controls. Crook & Raskin (1975) concluded that the loss of a parent through divorce, desertion, or separation, as opposed to the death of a parent during childhood, led to suicidal behavior and depression in later life.

Philip & McCulloch (1967) found high ecological correlations between social pathology and parasuicide rates in the city of Edinburgh but were not able to show that the ecological correlations held for individuals, or that they occurred with significantly greater frequency in parasuicides than in matched controls. Similarly many of the best known sociological propositions about suicide and attempted suicide are supported by ecological analyses of possibly stress producing variables. By the very nature of this type of analysis the possibility of the explanation of the suicidal behavior of individuals is excluded, and it is impossible to determine why some individuals who are in particular ecological substrate do become suicidal, while others in a similar position do not.

Few direct examinations of the life stresses experienced by parasuicides have been made. Jacobson & Tribe (1972) found a wide variety of stressful events
(such as marital discord, financial and employment problems) preceded deliberate self-injury. However, no control group was used to compare with the parasuicides so it is not possible to decide whether there was any excess of stress in the lives of parasuicides. In the absence of any comparison group the authors tried to show a thematic link between stressful events and parasuicide but were unable to demonstrate conclusively that specific stresses precipitated deliberate self-injury (cf. Cochrane & Robertson, 1975).

Paykel & Prusoff (1974) interviewed 53 parasuicides admitted to a hospital in New Haven, Conn., and asked whether any of 61 life events had been experienced in the 6 months prior to the attempt. These data were compared with events reported by 53 depressive patients and 53 general population controls. Parasuicides reported many more events than either control group, particularly in the month just before self injury occurred. The differences between parasuicides and the general population controls were greatest, the differences between depressives and parasuicides more selective. The authors concluded that overall there exists a strong and immediate relationship between suicide attempts and life events.

Cochrane & Robertson (1975) examined the nature and extent of the relationship between life stresses
and parasuicides ("attempted suicide"). Subjects were 100 male parasuicides equally divided between young (under 25) and old (over 40) and between manual and non-manual groups. A similar number of individually matched controls were also used. Data was gathered on recent life events, hostility, depression, and felt dissatisfaction as well as the demographic variables already mentioned. Results indicated that parasuicides had experienced for more life stresses in the year preceding their act than had the controls and this held true for both young and old, manual and non-manual groups. Further analysis revealed that unpleasant life changing events occurred with greater frequency among the parasuicides than the controls whereas pleasant events occurred with similar frequency in both groups. Two hypotheses concerning the nature of the relationship between life stress and parasuicide were tested by comparing the groups on the frequency of occurrence of events within and beyond their control. It was found that both types of events were more common in the parasuicide than the control group thus giving support to the hypothesis that a high rate of life stress predisposes a person towards parasuicides. Only in the manual working class group was life stress related to hostility and depression, and it was suggested that this may account for some of the differential parasuicide rates between social classes. The same held true, to
a lesser extent of young parasuicides as compared to old and again it was noted that young people have the higher parasuicide rates.

A review of the findings of several other researches (Schotte & Clum, 1982, 1987; Luscomb, Clum, & Patsiokas, 1980; Braucht, 1979; Paykel, Prusoff, & Myers, 1975) reveals that suicidal subjects reported significantly higher levels of negative life stress than did matched controls.

Negative chaotic family environments have been posited as risk factors for depression and suicidal behavior in children (Pfeffer, 1986; Kaslow & Rehm, 1985). More recently, Schotte & Clum (1987) remarked: 'Indeed, the findings regarding negative life stress in suicidal samples appear to be remarkably robust' (p.52).

**Extraversion, Neuroticism, Psychoticism and Suicidal Behavior**

It is significant to emphasize that very few empirical investigations have been made to examine the relationship of suicidal behavior with extraversion, neuroticism and psychoticism. Mehryar, Hekmat, & Khajavi (1977) divided a group of American university students into two groups in terms of contemplated suicide, using
subjects' own reports of serious suicidal thought. The group admitting serious suicidal thoughts (N=111) differed significantly from the nonsuicidal group (N=356) on 7 of the 9 personality dimensions covered by Lanyon's Psychological Screening Inventory and Eysenck's PEN Questionnaire. More specifically speaking, the findings were very much in line with clinical descriptions (Stengel, 1964) and objective studies of attempted suicide (Phillip, 1968, 1970a, 1970b) in that they indicated a higher level of personal disturbance (N+ and Dis+) and interpersonal difficulties (P+ and Al+) in students who have occasionally entertained serious thoughts of self-destruction. The lower sociability level (E− and Ex−) of the group obtained in the study is also consistent with the social withdrawal and aloofness so often associated with personal and interpersonal disturbances. The authors concluded that "the findings of this study, while not offering conclusive evidence in support of a suicidal personality, indicate that young individuals who have admitted suicidal temptations are characterized by certain traits and attitudes which are associated with psychopathology" (p. 1293).

N: Neuroticism, Dis: Discomfort; P: Psychoticism; Al: Alienation; E: Extraversion; Ex: Expression
Pallis & Jenkins (1977) conducted an investigation to study the relationship between extraversion, neuroticism and intent in attempted suicides. Subjects were 151 suicide attempters admitted to a general hospital's Accident and Emergency Department. Form A of the Eysenck Inventory (Eysenck & Eysenck, 1964) was administered to all admissions upto 48 hour from medical recovery and prior to a research interview. Completed questionnaires were obtained from 124 subjects (82%). Non-responders (n=27) were comparable to responders in respect of sex, age, marital status, social class, psychiatric diagnosis, level of suicide intent, and previous or subsequent suicide attempts. Of the responders, 3 male and 11 female subjects were excluded because of high scores (6+) on the Eysenck Personality Inventory, Lie Scale. Suicidal intent was measured by the first part of the Suicide Intent Scale (Beck, et al., 1974) from which ratings of the circumstances of the act can be obtained. Self-reported intent was recorded separately from the subject's recollection of intent at the time of the act (1=wished to die; 2= uncertain or did not wish to die). Subjects were further categorized as "recurrent attempters" if they had attempted suicide prior to the index attempt or if they had repeated the act within a 2 years follow-up period. Results revealed that for males there was an association between low intent to die and impulsivity. For female subjects, the result
was consistent with that of Kinsinger's (1971), who found no association between a clinical judgement of intent and extraversion or impulsivity. The study also revealed that for both sexes there was an association between recurrent suicide attempts and neuroticism. Both male and female recurrent attempters had higher neuroticism scores than once-only attempters. Because the Eysenck Neuroticism Scale is highly and positively weighted by Trait Arousability (Mehrabian & O'Reilly, 1980, Equation 13), the Pallis & Jenkins study provided evidence for high arousability as a significant temperament component of those who attempt suicides.

Watson & Kucala (1978) administered an Anhedonia Scale to patients who later died by suicide. Drawing on the contents of their Anhedonia Scale, Watson & Kucala characterized the suicide victims as "active, energetic and emotional" (p. 1122) and suggested that suicides are a result of the combination of emotionality and situational stress.

Mehrabian & Weinstein (1985) made an attempt to investigate temperament characteristics of suicide attempters. Subjects were 30 men and 15 women in the 15 to 67 age range (M=33; SD=13). They were recruited for the study primarily through referrals by relatives.
and friends who had direct knowledge of their suicide attempts. Subjects were blue-collar workers, unemployed persons, or students. Subjects were contacted by telephone and were asked to participate in a study designed to measure attitudes. An appointment was made for one of the experiments to meet them individually and at their convenience to administer some questionnaires. Each subject first responded to a set of three measures that assessed temperament employing a three-dimensional scheme (Mehrabian, 1980). Next, the experimenter conducted an interview that sometimes led to a discussion of the suicide attempt. For the 15 subjects (7 men and 8 women) who volunteered information concerning their suicide attempts, a lethality of suicide measure was obtained. These subjects rated their suicide attempts on a scale ranging from 1 (a gesture, e.g., an attempt made with no intention to die) to 5 (a near miss with death and hospitalization). Data from both sexes indicated that suicide-prone individuals have unpleasant, arousable, and submissive temperaments, with arousability a strong discriminator of suicide attempters relative to the general population. Thus, temperament attributes identified for suicide attempters are best described as neuroticism or trait anxiety. The authors concluded that the present findings, together with some of the others reviewed (Lester, Beck & Mitchell, 1979; Watson & Kucala, 1978; Pallis
& Jenkins, 1977), shed a new light on the personality or temperament of suicide attempters. Contrary to the traditional view that suicide attempters are depressives, they are more likely to be neurotic or anxious types which include unpleasant, submissive and arousability temperament characteristics, the distinguishing characteristic being trait arousability. The additional finding of a significant positive correlation between lethality of the suicide attempt and trait arousability reinforced the importance of high arousability as a temperament characteristic of suicide attempters.

Several other investigations have revealed that there appears to be an association between a diagnosis of psychosis versus neurosis and suicidal behavior. For example, both Gordon (1929) and Menninger (1938) felt that neurotics were more likely to attempt suicide whereas psychotics were more likely to complete suicide. Menninger (1938) asserted that the suicidal behavior of neurotics was less life-threatening than the suicidal behavior of psychotics. Pokorny (1964, 1966) reported higher completed suicide rates in schizophrenics and manic-depressives than in neurotics. Temoche, Pugh, & Macmahon (1964), however, found that the rate for schizophrenics and "other psychoses" was lower than that for neurotics but they too found the highest completed suicide rate in manic-depressives.
Some supporting evidence comes from Rubenstein, Moses, & Lidz (1958) who reported that among attempts at suicide brought to the emergency room in general hospital, those attempts by psychotics were more lethal than those made by neurotics. Sifneos, Gore, & Sifneos (1956) similarly reported that psychotics make more lethal attempts. Dorpat & Boswell (1963) categorized attempts at suicide into gestures, ambivalent, and serious and found that proportion of psychotics in the groups increased with the seriousness of attempt. Krupinski, Polke, & Stoller (1965) in a sample of psychiatric patients from Victoria (Australia), who subsequently completed suicide or who had attempted suicide found: (1) a significant association between neurosis/psychosis and attempted/completed suicide, (2) a nonsignificant association between sex and diagnosis, and (3) a nonsignificant association between sex and attempted/completed suicide. However, Lester (1970) on the basis of his investigation concluded that available data appear to indicate that there may well be a pattern of intercorrelations among the three variables, namely sex (male versus female), suicidal behavior (attempted versus completed), and psychiatric diagnosis (neurosis versus psychosis).

Another investigation (Lester & Beck, 1976) of suicidal behavior in 102 neurotics and 90 psychotics
who attempted suicide, revealed no difference between neurotics and psychotics in their suicidal intent as measured by self-report and by an objective suicidal intent scale, or in the medical lethality of their attempts. Thus, no support was found for Menninger's hypothesis.

More recently (Curtis, 1984) critically examined the problem of diagnosis and management of suicidal behavior. The critical discussion reviewed a number of factors which seem to be involved in suicidal behavior. The author emphasized that despite the appearance of depressive-like symptoms with suicidal behavior, it seems likely that maladaptiveness is greater and more life-threatening than even the most debilitating depressions. Indeed, the extent of the maladaptiveness suggests that suicidal behavior may involve — together with any other symptoms—a psychotic-like process in which a circumscribed transient thought disorder suspends the individual's capacity to comprehend the consequences of their actions. After all, many suicidal individuals are not fully cognizant of the potentially irreversible impact -- both on themselves and others -- of their actions at the time of suicidal episode. The apparent suspension of rational decision-making at the time of suicidal attempt appears somewhat comparable to the diminished capacity often observed in homocidal behavior; this parallel is presumably
what led Menninger (1938) to refer to suicide as "murder of the self," because the self becomes the target of lethal aggression.

It was suggested that diagnostic inferences which attribute suicidal behavior to underlying depression may be misleading inasmuch as it might stem from uncontrollable rage, frustration, distortions in perception, a loss of contact with reality, and the like. Also, treating suicidal behavior as depression, e.g., with psychotherapy and antidepressant medications, might prove hazardous if treatment does not deal with the psychotic aspects of such behavior, the elements militating against the individual's survival. The author further remarked that once the psychotic component is sufficiently arrested and suicidal behavior has been controlled, the patient may be more amenable to intensive diagnostic assessment and eventually to psychotherapy.

The review of the related literature clearly reveals the following potentially important aspects which have been incorporated in the present study as possible refinements.

1. The rising incidence of attempted suicide in the last two decades*, often referred to as an "epidemic"**

* Suicide is the second leading cause of death among college students (Davi & Neale, 1982).
in many countries, and of the numerous challenges in outpatient psychotherapeutic treatment none is perhaps greater than diagnosing and managing suicidal behavior. Increasing recognition of suicide as a major health problem has led to the investigation of many aspects of the phenomenon of suicide. However, it is still an intriguing problem about which the amount of scientific knowledge is quite incomplete. The present investigation is an attempt to have more precise information about suicidal behavior.

2. Number of attempts have been made to identify the social and psychological aspects of suicidal behavior. Much of this work, however, has been concerned with people who have actually attempted suicide. But it is a well known fact that attempted suicides which come to the notice of clinical workers form a very small proportion of the suicidal population. In addition to this unidentified group of attempted suicides, there is much larger group whose suicidal ideas somehow stop short of action. As Stengel (1964, p.12) has put it, "There are few if any individuals to whom the idea of suicide has never occurred." Thus, identifying the correlates of suicidal ideation which is a prerequisite to threatened suicide, attempted suicide or committed suicide is obviously more important because the earlier
the identification the more feasible is intervention and prevention. It is of prime importance since the aim of the suicidologist is the eventual prediction of those who are most likely to consider self-destruction. The researchers in this specific area of suicide research have been more concerned with attempted or threatened suicide. The present study has included in its purview suicide ideation among University students so that it can help in the eventual prediction of those who are most likely to consider self-destruction.

3. A review of the suicide literature shows that researchers have focused on various situational, interpersonal, as well as psychological causes of suicidal behavior. In psychological causes, the major emphasis has been laid on depression, hopelessness, social desirability, and cognitive rigidity. In these researches, two aspects deserve due emphasis:

Firstly, the psychotic aspects of behavior, the elements militating against the individual's survival have not been given due consideration. Any investigation of suicide cannot afford to neglect the psychotic aspect of behavior in which a circumscribed transient thought disorder suspends the individual's capacity to comprehend the consequences of their actions. The present study has included
in its purview psychosis proneness* as a moderator variable since suicidal actions represent a conspicuous dislocation with reality:

Secondly, different factors, for example, cognitive rigidity, hopelessness, depression, social desirability have all received empirical support in univariate studies of suicidal behavior. Typically, researchers have computed correlations and partial correlations to examine the relationships of different variables (hopelessness, depression, social desirability, cognitive rigidity) with suicidal behavior. However, it is essential to integrate these various dimensions into a coherent whole since it is well known that suicide is a complex behavioral phenomenon which cannot be attributed to a single precipitating factor. The present study evaluates the relationships of all of these variables (depression hopelessness, dysfunctional attitude, cognitive rigidity, social desirability, extraversion, neuroticism, life stress) with suicide ideation in a single sample of university-students; and made use of factor analysis for understanding the structure

* Subjects scoring high and low on psychosis proneness were treated separately. Within each group, subjects were no doubt homogeneous on psychosis proneness, but one group referred to high psychosis proneness, whereas the second group referred to low psychosis proneness. The details are given in the next chapter.
of suicide ideation separately for males and females, since it is not desirable to pool data of males and females, keeping in view gender differences in suicide ideation. It will also help in understanding the correlates of suicide ideation separately for males and females.

In the light of the aspects considered above, it would be a matter of interest and the great research relevance, therefore, to investigate the correlates of suicide ideation, separately among male and female university students scoring high and low on psychosis proneness.

**Formulation of Hypotheses**

On the basis of the review of literature presented in the preceding paragraphs, the following hypotheses are put forth:

1. In the total sample, **suicide ideation will correlate positively with depression, hopelessness, social desirability, psychoticism, extraversion, life-stress and cognitive rigidity.**

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* Within each group of high and low psychosis proneness, subjects will be homogeneous with respect to psychosis proneness.

** Regardless of psychosis proneness.
This hypothesis derives its rationale from earlier studies (pp 28 to 62) which found the relevance of depression, hopelessness, social desirability, psychoticism, extraversion, life-stress, and cognitive rigidity in suicidal behavior, particularly attempted suicide.

2. Suicide ideation will be more markedly related positively to depression, hopelessness, social desirability, extraversion, life-stress, and cognitive rigidity in case of high psychosis prone subjects than low psychosis prone subjects.

   This hypothesis derives its rationale from Curtis (1984) suggestion that psychotic aspect of behavior is an important element militating against the individual's survival and once the psychotic component is sufficiently arrested, the patient may be more amenable to intensive diagnostic assessment and eventually to psychotherapy.

3. There would be no difference in the correlates of suicide ideation among males and females.

   The null hypothesis has been formulated because of the lack of studies concerning correlates of suicide ideation among both males and females.
4. Females will score higher on depression, hopelessness, social desirability, psychoticism, extraversion, and life-stress than males.

This hypothesis derived its rationale from several studies* which found women to have more psychological impairment than do men.

5. There will be no difference between males and females on creativity and field-independence-dependence.

This hypothesis is based on researches which have failed to yield consistent results so far as gender differences in creativity and field-independence-dependence is concerned.

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