

CORRELATES OF PARASUICIDAL BEHAVIOR AMONG INCARCERATED YOUTHS

by

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ABSTRACT

The research investigated self-destructive behavior among residents at a correctional institution for youths. Subjects completed a battery of psychometric tests, measuring environmental perceptions, reasons for living, hopelessness, self-depreciating thinking, social desirability, depression, personality, and suicidal potential. Additionally, subjects completed a questionnaire pertaining to demographics and suicidal behavior, including past suicide attempts, self-mutilation, and suicidal ideation.

The results indicated three major factors, which were interpreted as categories of suicidal behavior amongst incarcerated youth. The three categories were considered to represent (1) psychopathological suicidal behavior, including depression; (2) suicidal behavior associated with a chaotic life history, including hopelessness; and (3) suicidal behavior associated with the desire to receive social approval. Implications for suicide prevention and for the measurement of hopelessness are discussed.

Using the current variables, accurate postdiction of suicidal behavior for individuals was not possible. The difficulties inherent in suicide prediction are discussed, and pertinent literature is reviewed.

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PART A
INTRODUCTION

CHAPTER I

OVERVIEW

The prevalence of suicide suggests the significance of this phenomenon within North American society. More than 4 million living Americans have attempted suicide, thereby making it the seventh most common cause of death in the United States (Devine, 1980). Over 25,000 individuals kill themselves in America each year (Linehan, Goodstein, Nielsen, and Chiles, 1983), a rate in excess of 25 persons per 100,000. Similar statistics apply in Canada, especially in British Columbia, where the rate of suicide is higher than that of any other Province (Allodi and Eastwood, 1973).

Although research pertaining to suicide is broad, spanning many years, there has emerged a logical progression within the literature. The first attempts to understand suicide focussed on the demographics of those who attempted or completed suicide. These research endeavors investigated such factors as age, sex, socioeconomic status, area of residence, etc. This demographic approach proved practical and useful in that it provided a much-needed foundation of knowledge within a little-understood area. As this base of knowledge grew, and academic interest in suicide increased, theories of suicide began to emerge, representing a second major evolution in suicide investigation.

As theories of suicide became more numerous and more comprehensive, investigators began to identify factors or

variables which theoretically would increase the likelihood of suicide for certain groups of individuals. Initially, there were as many "predisposing factors" towards suicide, as there were theories of suicide. However, with the advent of sophisticated statistical techniques, researchers began to identify specific variables which were highly correlated with an increased rate of suicide. Eventually these factors were used in the actual prediction of suicide for specific individuals, as opposed to simply identifying high-risk groups.

Although the prediction of suicide for specific individuals has not met with great success, certain variables have emerged as being closely linked to suicide. For example, the construct of hopelessness has been identified as predisposing one towards suicide. Recently, the relationship between hopelessness and completed suicide has been extended to include non-fatal, but, nonetheless self-destructive behaviors. These behaviors, which have come to be known as "indirect" or "parasuicidal", range from involvement in dangerous sports and lifestyles to repeated unsuccessful suicide attempts.

Interest in parasuicide has focused attention upon subgroups or populations which have high rates of non-fatal, self-destructive behaviors. For example, adolescents are disproportionately involved in a variety of indirect self-destructive behaviors, including drug and alcohol abuse, dangerous driving, attempted suicide, etc. Similarly, correctional populations have disproportionately high rates of

both suicide, attempted suicide, and self mutilation.

Although adolescents and incarcerated adults have been identified and researched as high-risk populations, to date there has been no investigation pertaining to incarcerated adolescents. It is the goal of the present study to analyse suicidal ideation and parasuicidal behavior, within a juvenile correctional facility, with special emphasis upon hopelessness and suicide prediction.

CHAPTER II

DEMOGRAPHICS OF SUICIDE

Descriptive and demographic information regarding suicide is readily available. For example, it is generally accepted that although women are three or four times more likely to attempt suicide than males, three times as many men as women successfully take their own lives (Devine, 1980). Furthermore, although the lay public often perceives suicide to be a phenomenon associated with teens and young adults, research suggests that the probability of suicide increases with age, with the majority of suicides being committed by individuals over 45 years of age (Alvarez, 1972). At the same time, however, the rate of suicide among adolescents is rapidly increasing (Friedman et al., 1984 ; Miller et al., 1982).

Marital status represents another important demographic variable, with high suicide rates among divorced persons, low risk among married persons, and single individuals falling between these extremes (Calhoun, 1977). Hendin (1969) points to occupational status, as another demographic variable related to suicide; more specifically; competitive occupations and/or those demanding interpersonal giving tend to be associated with higher rates of suicide (e.g., physicians, psychiatrists, police, etc.). Additional demographic factors which have been associated with a higher rate of suicide include unemployment, residence in urban slum areas, residence on the west coast , poverty, alcohol

abuse, race (i.e., higher rates for whites and native Indians, as opposed to blacks and orientals) and religion (higher rates for Protestants as opposed to Jews and Catholics) (Hendin, 1969)).

CHAPTER III
THEORIES OF SUICIDE

Lester (1972) classifies the many theories of suicide into four major types: (1) a sociological theory in which suicide is seen as a disturbance in the relationship between the individual and society (Durkheim, 1951); (2) an intrapsychic perspective in which suicide is seen as the expression of an ongoing struggle with aggressive impulses (Freud, 1957); (3) an interpersonal approach, which describes suicide as the manipulation of others (Lester, 1972; Adler, 1958); and (4) a symbolic and phenomenological theory in which suicide is thought to concretize the symbolic process of death and rebirth (Hillman, 1964).

In discussing suicide as a disturbed relationship between the individual and society, Durkheim (1951) identified two aspects of society which may significantly influence the rate of suicide--integration of the group and degree of social regulation imposed upon the members. Integration of society is the degree to which societal members share beliefs, sentiments, and goals. If integration is high, there is a high rate of altruistic suicide (i.e., suicide for the common good such as loyal kamikaze pilots during World War II). Conversely, if integration is low, there is a high rate of self oriented or egoistic suicide (Beebe, 1975)./For example, the increasing rate of suicide within our own society, would according to the

theory, be attributed to extreme individualism arising out of decreasing family and community ties (low integration). "Social regulation" represents the amount of control imposed upon societal members. When social regulation is high, individuals use suicide as a means of escaping a negative and restrictive situation, resulting in what Durkheim (1951) refers to as "fatalistic suicide". The disproportionately high rate of suicide within correctional facilities (Supply and Services Canada, 1981) represents one example of this form of suicide. Finally, where social regulation is low, individuals may view life as too easy, and lacking challenge, resulting in "anomic suicide" (Beebe, 1975).

Freud (1957) saw suicide as the expression of a struggle with aggressive impulses, and more specifically, as a result of the ego's failure to deal with loss. Two basic premises are integral to Freud's theory. First, objects (i.e. people) are loved ambivalently, in that identification with a loved object includes hostile feelings in addition to positive ones. Second, when the loved object is lost, mourning may become extreme, and hostile feelings once directed toward the loved one are now being turned against the self. These feelings of aggression toward another, now turned inward, may be complicated by the feeling of abandonment which commonly accompanies the loss of a loved one. There is considerable guilt associated with the expression of negative emotions toward a deceased loved one, and this dynamic may produce suicidal ideation, and ultimately

suicide (Menninger, 1938).

Lester (1972) viewed suicide and suicidal attempts as a means by which the individual may control or manipulate those about him/her, in a way that would otherwise be impossible. For example, suicide attempts may provide the suicidal individual with desired attention, cause guilt in those who have harmed him/her, or provide the individual with a desired status or role (e.g., "sick", "patient", etc.). Adler (1958) shared the view that suicide is manipulative, but did so within the specific framework of his theory of personality. He suggested that individuals with extreme feelings of inferiority may be envious of "healthy" and more satisfied others, and therefore attempt or commit suicide in order to punish or hurt these more advantaged persons. Similarly, suicide and attempts at suicide by individuals who feel inferior, may be an attempt to demonstrate the desperation and severity of their situation in order to derive much desired love and affection (Adler, 1958). Whatever the specific intent--vengeance, attention-seeking, or pursuit of love, the theory that self-destructive behavior is somehow manipulative is held not only by major personality theorists such as Adler, but remains popular among the media and lay public, especially with respect to adolescent suicide.

Hillman (1964) saw suicide as symbolizing death and rebirth in the evolution of identity. More specifically, individuals may be unable to move or evolve into the next phase of life; they are somehow locked in a phase or situation which is no longer

adaptive or satisfying. Such individuals may see suicide as a means of rejecting the old and ineffective identity, in order that the new self may emerge. It is hoped that death or experience of near death will bring about a rebirth or reawakening.

The behaviorist perspective on suicide is described by Ullmann and Krasner (1975). According to this theory, suicide is simply the result of a significant change in the pattern of reinforcements. More specifically, suicide results from real, anticipated, or fantasized loss of reinforcements (health, job, spouse, etc.). In addition to deriving no positive reinforcement from life, the suicidal individual may find the thought of his/her death to be positively reinforcing, in that it may bring attention, pity, and revenge, or provide tension reduction. As a result, the suicidal individual perceives death as more reinforcing than life.

The humanistic perspective on suicide is advanced by May (1958). He views death as something which each individual must face and acknowledge. The thought of suicide can be positive, in that it causes one to consider life more seriously; death and related aspects are seen as giving life absolute value. Therapy for a suicidal individual entails full realization of present existence, in order that the value and purpose in life and living may manifest itself.

Finally, the proponents of Existentialism see the suicidal individual as unable to deal with a perpetually meaningless and inauthentic existence (Calhoun, 1977).

Although many of these theories regarding suicide discuss self-destructive behavior in a logical and consistent fashion, clear and definitive empirical support favoring one or another perspective has not been forthcoming. One explanation for this lack of empirical support is that complex constructs such as self-directed aggressive impulses (Freud, 1957), and manipulation via guilt and vengeance (Adler, 1958), are so global and comprehensive, that the research process (including operational definition, variable manipulation, and measurement), becomes difficult, if not impossible. Psychoanalytic theory, in particular, has been criticized for its lack of scientific validation (Sears, 1943, 1951; Hall, 1956). More specifically, Freud's theory evolved on the basis of one individual's introspections regarding a non-random sample, relying heavily upon inference and unobservable concepts (i.e., ego), and therefore has not generated a great deal of empirical support (Sarnoff, 1971). For example, when Freud (1950) discussed the notion of a primary drive toward death, his theory was considered too "metaphysical" by even his followers (Beebe, 1975). Similarly, the more recent theories of suicide are not particularly amenable to empirical investigation; concepts such as symbolic phenomenological representation (Hillman, 1964), humanistic quest for purpose of life (May, 1958), and

existential crisis (Calhoun, 1977), cannot be readily operationalized and/or measured.

Where research has attempted to validate a particular theory, the results have been vague and conflicting. For example, Hendin (1964) tested psychoanalytic theory in his study of the effects of different national styles of child rearing on adult suicide rates. He found higher rates of suicide in those countries where separation from mother occurs early, and attributed this to aggressive impulses turned inward due to early object loss. However, this finding may be explained via other theories, including social learning theory or Durkheim's theory of sociological disruption. Without control and manipulation of independent variables, cause cannot be adequately determined. Even the behaviorist perspective, which is much more compatible with the dictates and requirements of scientific research, has produced conflicting data. For example, certain researchers have suggested that depressed and suicidal individuals have experienced a recent decrease in the quantity and quality of environmental reinforcers (Lazarus, 1968; Ferster, 1965). However, other researchers downplay the importance of reduced reinforcement, pointing instead to inadequate social skills (Lewinsohn, 1972). Furthermore, if indeed the suicidal individual perceives death as more reinforcing than life, one must question the nature of a one-trial learning situation in which the subject cannot experience the consequences (reinforcement) of his or her

behavior.

Until recently, there appeared to be no solution to this problem of theoretical constructs which are difficult to operationalize. Consequently, although theories of suicide were helpful in describing the phenomenon, and were able to capture individual subjective reasons for self-destructive acts, they were essentially inconclusive and generally untestable. However, the situation has changed considerably with the introduction of computer technology and corresponding multivariate statistical packages. More specifically, sophisticated factor analytic techniques, involving construct labelling/identification and item analysis, have enabled the investigation of complex theoretical constructs and their interrelationships, in a way which was never before possible. As a direct result of these developments, current research entails the use of factor analytically derived psychometric instruments, designed to assess previously undefinable constructs and their relationship to self-destructive behavior.

Although psychometric definition and identification has not confirmed or disconfirmed any of the traditional theories of suicide, it has nonetheless generated new and more verifiable areas of research. For example, the relationship between suicide and depression has for years been acknowledged by clinicians, but was difficult to investigate because of problems in measuring quantitatively the depression variable. However, with the introduction of the Beck Depression Inventory (Beck et al.,

1961; Beck, 1972), a psychometrically-derived instrument for the measurement of depression , the suicide-depression correlation has been firmly established (Farberow, 1983). In this way the psychometric perspective has begun a new era in which theories of suicide can be more adequately tested. The ultimate goal is the development of a comprehensive theory of self destructive behavior which is based upon valid and reliable scientific research.

CHAPTER IV

ADDITIONAL FACTORS WHICH PREDISPOSE FOR SUICIDE

With the possible exception of demographic variables, the identification of additional factors which increase the likelihood of suicide has produced contradictory results. For example, there is conflicting evidence that suicidal individuals have experienced the death or loss of family members and/or important others. Conroy and Smith (1983) found their entire sample of suicidal patients to have experienced such losses under dramatic and tragic circumstances (i.e., early in life). Similarly, Hilgard and Newman (1959) identified an "anniversary reaction", in which depression and suicidal ideation surface on the anniversary of a personal loss, a time which evokes the memory of suffering. Other researchers, however, have deemphasized loss, pointing instead to a decrease in reinforcing "value" or incentive (Costello, 1976).

Certain personality styles have been thought to predispose individuals towards suicide. More specifically, it has been suggested that impulsive, and obsessive-compulsive personalities are more prone to self-destruction (Beebe, 1975). Impulsive persons are unlikely to logically consider the course and consequence of their behavior in a way which would allow them to reject and/or modify future actions or decisions. To have a thought is to act upon it, thereby making even suicidal fantasy a potentially dangerous activity (Suinn, 1970).

Obsessive-compulsives are compelled to ideate on matters which appear irrational, or to behave in an irrational manner. The individual is aware of the irrational nature of his/her thoughts and/or behaviors, but has little or no control in this regard. As in the case of impulsivity, it is possible that when suicide or other self-destructive behaviors become the area of focus, the individual may be in danger (Calhoun, 1977). Although relationships between suicide and personality styles make intuitive sense, they remain theoretical postulates, with inadequate and inconsistent empirical support. More research will be required before the suicide-personality type correlation is fully understood.

Certain psychiatric conditions have been thought to predispose in the choice of suicide as means of problem resolution (Farberow, 1982). For example, Kendall (1983) points to an extremely close relationship between suicide and alcoholism, and theorizes that alcohol dependence may reduce self-esteem which in turn leads to depression and possibly suicide. Similarly, Fox (1967), found alcoholics to have a suicide rate which is 55 times greater than the norm. Research has also identified schizophrenia, particularly the early phase of the illness, as predisposing towards suicide (Tsuang, 1983). For example, Shaffer et al. (1974) found the rate of suicide for a sample of schizophrenics to be 277 times greater than that suggested for the normal population. Similarly, Atkinson (1986) suggests that suicide may be part of an intricate schizophrenic

delusional system.

Of all psychiatric conditions, none has been more closely linked to suicide than depression (Farberow, 1983). For example Tsuang (1983) found an increased rate of suicide not only among depressed patients, but also among the relatives of depressed patients as compared with the relatives of a control group. Similarly, Friedman et al. (1984) report that depression has been diagnosed in 35%-79% of all suicide attempters. Ironically, suicidal risk is greatest when the depression has begun to improve, and the patient is feeling somewhat better. Explanations for this phenomenon vary, but it is generally accepted that due to symptomatic psychomotor retardation, depressed individuals lack the mobility and energy to plan and commit suicide; and it is not until the mood has elevated somewhat that there is energy available for self-destructive behavior. Conversely, the decision to take one's life may precede the elevation in mood and energy, in that it brings relief from negative and depressive ruminations (Calhoun, 1977). A third possibility is that depressed individuals who have recently recovered may so dread a relapse, that they take their lives as a final and ultimate means of avoidance (Beebe, 1975).

Finally, there is considerable evidence that past suicidal behavior predisposes individuals to future suicide attempts (Pokorny, 1983). Studies show that approximately 12 percent of those who make nonfatal suicide attempts will make a second, successful attempt within two years (Shochet, 1970).

Furthermore, 75 percent of all completed suicides have made a previous attempt (Cohen, et al., 1966).

There are difficulties with the theory that certain variables predispose individuals towards suicide. Generally these difficulties can be grouped into three broad categories. First, there is often conflicting evidence as to whether or not a given variable is actually correlated with suicide. For example, there is not unanimity of opinion regarding the existence of a relationship between suicide and loss (Conroy and Smith, 1983).

A second problem with the identification of variables which predispose for suicide, is that a relationship between suicide and another variable, does not allow inference about cause. Therefore, when suicide ("A") is found to covary with another variable ("B"), it cannot be determined whether A is causing B, B is causing A, or some third variable ("C"), is influencing both A and B. For example, the well documented relationship between depression and suicide may be a result of depression causing suicidal ideation. Conversely however, it is possible that repeated attempts at self-destruction may cause feelings of dysphoria and sadness.

The third problem with identifying variables which predispose for suicide is that relationships between suicide and other variables are not perfect correlations. For example, demonstration of a significant correlation between suicide and

loss does not imply that all those who have committed suicide have experienced recent loss. Furthermore, even if it can be demonstrated that the majority of suicides have indeed experienced significant loss, it does not follow that the majority of those who experience loss will in turn commit suicide. Similarly, although 75 percent of suicides have a history of suicide attempts (Pokorny, 1983), a finding which certainly suggests history to be a predisposing variable, it is not the case that an equally high percentage of attemptors will ultimately succeed in taking their lives. This is true for all variables which are seen as predisposing for suicide, including demographic variables. For example, although most suicides involve males, it would be ludicrous to suggest the converse, that most men will eventually kill themselves.

Despite the problems of conflicting data, unclear causal inference, and imperfect correlations, the identification of variables which predispose for suicide is not necessarily contraindicated. Rather, when a variable is found to relate reliably and significantly with suicide, it is legitimate to see that variable as increasing the possibility of suicide. The problem arises when mistaken assumptions about perfect correlations and knowledge of cause, lead to the view that predisposing is tantamount to reliable, accurate prediction. It must be understood that predisposing variables simply increase the possibility of suicide in a grand sense, as opposed to "predicting" suicide in specific cases. For example, it is one

thing to say that depression and alcoholism increase the risk of suicide, and quite another to assert that someone will commit suicide because he/she is alcoholic and/or depressed.

CHAPTER V

THE PREDICTION OF SUICIDE

Much of our information about suicide would imply that it can be accurately predicted. For example, a young black engineer with a devoted fiancée, a good work record, excellent interpersonal resources and no problems with stress or alcohol, would on the basis of the aforementioned demographics, have a low probability of suicide (Beebe, 1975). Furthermore, since factors such as incarceration, loss, compulsivity, impulsivity, risk-taking, psychiatric illness, and suicidal history are thought to predispose an individual for suicide (see above), the prospects for valid and reliable suicide prediction would appear favorable.

However, there are considerable difficulties with the prediction of suicide, or for that matter with the prediction of any complex human behavior (Farberow, 1982; Murphy, 1983). The problem is clearly presented by Pokorny (1983), in a prospective prediction study which attempted to identify persons who would attempt or commit suicide. Nearly 5,000 patients admitted to the inpatient psychiatric service of a V.A. hospital, were rated on a wide range of measures which were generally seen as useful in the prediction of suicide (structured interview and rating forms, certain items from the Tuckman and Youngman suicide assessment scale, the Brief Psychiatric Rating Scale, and the Nurses' Observation Scale for Inpatient Evaluation). In

addition, a "high-risk" subsample comprising approximately 15 percent of the entire group, completed the Zung Depression Scale (Zung, 1965), the Rosenberg Self-Derogation Scale (Kaplan, 1975), the Brief Michigan Alcoholism Screening Test (Pokorny et al., 1972), and a drug abuse identification scale. All subjects were followed up within four to six years, and any suicidal behavior was noted and recorded. Results indicated that many items were significantly correlated with subsequent suicides and/or suicide attempts. Of 153 cross-tabulations, 51 demonstrated statistically significant relationships. More specifically, suicide was strongly associated with diagnosis of affective disorder or schizophrenia, history of suicide attempt, evidence of depression, insomnia, presence of guilt feelings, along with 46 others.

Although significant relationships between self-destruction and other variables would suggest reliable suicide prediction, Pokorny found that correlations involving suicide were insufficient to make predictions for specific individuals (Pokorny, 1983). Stepwise discriminant analysis was used to select a weighted combination of items/variables which would identify the patients who would later commit or attempt suicide. When the program was instructed to disregard the low base rate of occurrence of suicide within the sample (63 suicides in 4,800 subjects) the procedure correctly identified only 35 of the 63 subsequent suicides, at a cost of 1206 false-positive predictions (false alarms). When the actual (low) base rates

were taken into account, more cases were classified correctly but the prediction was extremely conservative, with none of the actual suicides being correctly identified. Aside from the obvious and extreme cost of not identifying suicidal individuals (false negatives), this "conservative" system of prediction was less accurate, and certainly more expensive and demanding, than simply predicting that "no-one" would commit suicide (Pokorny, 1983).

The problem is a clear but persistent one. Tests are usually developed with reference to an artificial situation where the incident rate of the behavior of interest is approximately 50%. When these tests are used in a real situation where the incidence is very low, as in the case of commonly predicted behaviors such as dangerousness and suicide, predictive value is poor. As in Pokorny's (1983) study, to operate as though base rates were 50/50 results in over-prediction, or the incorrect decision that someone is suicidal (i.e., false positives); to acknowledge the low base rates decreases the number of false positives, but leads to conservative prediction where suicidal individuals are identified as non-suicidal (false negatives) (Pallis et al., 1984; Murphy, 1983).

The challenge then is the prediction of suicidal behavior for individual subjects. Although demographic variables and item responses have been useful for identifying "groups" of individuals at high or low risk for suicide, research has thus far been unable to utilize these or other variables for

assessing the specific individual. Therefore, the black engineer mentioned above, is at low risk for suicide not because of a specific predictive formula for him, but because of membership in a particular demographic group which tends to be low in suicide. The potential for false positives and false negatives is again obvious.

Many researchers have attempted to deal with this problem. Attempts to use standard psychological tests such as the Rorschach, the Thematic Apperception Test (TAT), and the Minnesota Multiphasic Personality Inventory (MMPI) have generally been unsuccessful (Watson, et al., 1984; Farberow, 1982; Lester, 1974). Other clinical scales designed to specifically assess suicidal potential are similarly able to identify high-risk groups, but less able to predict individual risk of suicide. These include the Suicide Intent Scale (Beck, Schuyler, and Herman, 1974), the Hopelessness Scale (Beck, Weissman, Lester, and Trexler, 1974), the Scale for Suicidal Ideation (Beck, Kovacs, and Weissman, 1979), the Scale of Suicide Intent (Pierce, 1977), the index of Potential Suicide (Zung, 1974), and the Suicide Death Prediction Scale (Lettieri, 1972).

CHAPTER VI

THE RELATIONSHIP BETWEEN SUICIDE, HOPELESSNESS, AND SOCIAL DESIRABILITY

Despite the difficulties with predicting suicide, prediction research has identified hopelessness as a variable which is very closely linked with self-destructive behavior. ~~More~~ specifically, using psychometric instruments and multivariate techniques in the measurement of depression and hopelessness, the well established relationship between clinical depression and suicide was found to be significantly reduced once variance due to hopelessness (negative expectations for the future) was controlled. Consequently, cognitions involving negative expectations for the future (hopelessness) were identified as the aspect or component of depression which relates to suicide (Minkoff, et al., 1973). Researchers have been so bold as to suggest hopelessness as a solution to the puzzling question of why there is a relationship between depression and suicide, and have recommended the alleviation of hopelessness in the prevention of suicide (Minkoff, et al., 1973). Similar findings regarding the role of hopelessness in suicide and depression have been made within populations of children and adolescents (Kazdin, et al., 1983).

The theory that hopelessness somehow explains the suicide-depression relationship has come under criticism, in that self-reports of hopelessness have been found to be potentially

confounded with social desirability. For example, Linehan and Nielsen (1983) found the positive relationship between hopelessness and suicide to be lost when one controls for scores on a measure of social desirability. Additionally, low social desirability scores were found to be significantly correlated with reports of suicidal behavior, a relationship which remained strong, even while controlling for hopelessness scores. Linehan and Nielsen (1983) conclude that individuals who care about social presentation may answer questions in a socially desirable fashion, and are unlikely to divulge hopeless ideation. They therefore recommend caution in interpreting hopelessness scores when assessing suicidal behavior.

Other research has defended the construct validity of hopelessness measurement against the criticism that social desirability represents a potential confound. For example, Petrie and Chamberlain (1983) found that social desirability had no influence upon hopelessness within a clinical sample. Nevid (1983) points out that covariation of social desirability and hopelessness does not necessarily indict the construct validity of hopelessness. Rather, a confound exists only when the correlation is not predictable within the theoretical meaning of the construct (Cronbach and Meehl, 1955). If however the covariation of hopelessness and social desirability is predictable and consistent, in that they measure a common construct, it can be said that the overlap makes theoretical "sense", and that there is not a confound. In more practical

terms it becomes a question of why there exists a negative correlation between hopelessness and social desirability. If the answer to this question lies in the fact that individuals withhold information about hopelessness, so as to present in a socially desirable way, then indeed there exists a confound. If, on the other hand, the correlation exists because hopeless individuals are less concerned with social presentation, we may conclude that the variables overlap in a consistent and theoretically consistent fashion, which is not indicative of a confound. Nevid (1983) supposes that the latter interpretation is correct, but points out that this issue can be empirically investigated via factor analytic techniques. For example, if it can be demonstrated that items from the two scales generally load on different factors, then it can be concluded that the items are factorially distinct, and that confound is not an issue. To date research has been limited to correlation and partial correlation techniques. A factor analysis of social desirability and hopelessness measures is recommended, and will be included in the current study.

Research pertaining to the interrelationship of social desirability, hopelessness, and suicide has significant implications for future research, the identification of high risk groups, prediction of suicide, and theory development. For example, the administrator of a correctional facility or hospital where it is important to identify suicide risk, would benefit immeasurably from knowledge that risk increases with

hopelessness, even within a depressed population. Further research in this area is crucial, with special emphasis upon the confounding influence of social desirability. Furthermore, it is recommended that the relationship between hopelessness and suicide be investigated within high risk populations, such as those in correctional facilities.

CHAPTER VII

INDIRECT AND PARASUICIDAL BEHAVIOR

Suicidal behavior is obviously not an "all or none" occurrence. More specifically, the phenomenon of suicide should not be seen as a simple dichotomous variable, where "suicide" involves only successful attempts (i.e., death), thereby identifying all other individuals, attempters and non-attempters, as "non-suicidal". Such a system would operate under the principle of "classification by exclusion", a gross and insensitive procedure, lacking in precision and accuracy, therefore rendering it of minimal clinical utility. Despite these obvious drawbacks, a review of the literature would indicate that much of the research regarding suicide has used this or some other variation of a two-category suicidal behavior classification system. For example, many of the studies designed to predict suicide have used "successful suicide" as the criterion variable, thereby downplaying other forms of suicidal behavior, including serious but unsuccessful attempts (Cull and Gill, 1982).

Norman Farberow (1980) has proposed a system of suicidal behavior classification which treats suicidal behavior as a complex continuum of actions, rather than a simple dichotomy (Farberow, 1980). He points out that self-destruction occurs in many ways, some direct and obvious, and others indirect and disguised. Farberow's theorizing is heavily influenced by

psychoanalytic theory. For example, he postulates that no one can truly accept the reality of his or her own death, due to an inability to assimilate the concept of nonexistence into the universally accepted fantasy of immortality (Freud, 1920). More specifically, death is a taboo subject which we instinctively deny, disguise, and generally avoid. Consequently, Freud (1920) proposed that the incontrovertible progression toward death, which he called the "death instinct", was for the most part unconscious, thereby affording defense and protection from the inescapable but taboo reality of ultimate death. According to Farberow (1980) this inability to accept the reality of death, and the resultant unconscious nature of the death instinct, imply that much of the behavior associated with this "instinct", will itself be unconscious. More specifically, individuals may be unaware and/or deny that actions are intended to destroy or injure self. As opposed to observable and "direct self destructive behavior" (DSDB), individuals will tend to engage in vague indirect self destructive behavior" (ISDB; see Table 1) (Farberow, 1980). Although Farberow points to the possibility of less direct forms of self injury, it is not an entirely new concept. Meerloo (1968) discussed "hidden suicide", Blachly (1973) used the term "seduction", and Shneidman coined the phrase "subintentioned death" to describe lethal behavior which was not consciously intended (Shneidman, 1968).

Farberow (1980) provides a framework within which the various forms of indirect self destructive behavior can be

classified. The first category within this framework consists of ISDB where an individual harms his or her body by making an already present illness or problem more serious or damaging (e.g., psychosomatic conditions, diabetes, cardio-respiratory illnesses, hypertension, invalidism, etc.). In the second category, an already present physical condition, usually the loss of some part or function of the body, is directed against the self, as opposed to the body (e.g., loss of limb, loss of mobility due to stroke or aging, and loss of identity among women with mastectomy and among men with castration); the individual chooses not to implement the required change in self-image, thereby constituting "indirect self destructive behavior" (ISDB). The third and fourth categories, involve behaviors where there is no prior physical condition/disease. In the former, self-initiated, damaging behavior is directed against the body (e.g., hyperobesity, smoking, drug and alcohol addiction, and self-mutilation); and in the latter, against the person (e.g., severe sexual disorders and asceticism). In these third and fourth categories, injury or damage may be potential as opposed to actual. For example, there could be "potential" damage to the body in the case of violent crime, rioting, and repeated traffic or industrial accidents; or to the person in the case of nonviolent crime, delinquency, and compulsive gambling. In the fifth category of indirect self destructive behaviors, excitement-oriented activities are directed against the body, as in the case of mountain climbing, parachuting, scuba diving, motorcycle or auto racing, and violent contact

TABLE 1

Indirect Self-Destructive Behavior

Prior physical condition	Primary effect on the body	Primary effect on the person
<u>Present</u> (prior physical condition exists: individual's activity increases actual or potential damage)	Psychosomatic: (asthma, ulcer, dermatitis, etc.) diabetes cardiorespiratory diseases hypertension physical debilities of elderly invalidism hypochondria malingering	Loss of body part or functions Limb (accident) mobility (stroke, aging) mastectomy sensory loss (blindness)
<u>Absent</u> No prior physical condition exists; actual or potential damage may result from activity	<u>Actual</u> hyperobesity smoking drug/alcohol addiction self-mutilation	severe sexual disorders asceticism
	<u>Potential</u> violent crime; rioting assassination repeated accidents	nonviolent crime delinquency compulsive gambling
	<u>Stress-seeking, risk-taking</u> mountain climbing parachuting scuba diving hang gliding motorcycle or auto racing violent contact sports	games of risk, chance stock market speculation

sports. In the sixth and final category, similar excitement oriented behaviors are directed against the person as opposed to the body (i.e., games of risk or chance where a great deal can be lost, such as high stakes poker or stock market speculation).

Given Farberow's formulation, it is clear that suicidal behavior is not a simple and easily defined dichotomous phenomenon. Nor is it necessarily an overt or conscious phenomenon. Furthermore, its effects are not in all cases immediate. It is more realistic to view suicide as a continuum, where the individual may be unaware of self destructive tendencies, with the behavior spanning years and the effects being long-range.

A behavioral classification system such as the one just described, may be extreme and somewhat overinclusive in that virtually any behavior could be considered suicidal. More specifically, to define involvement in dangerous sports or speculation on the stock market as suicidal behavior, could make the entire research process, including choice of subjects, establishing control groups, methodology, and data analysis, a cumbersome and overinvolved endeavor. However, researchers have come to acknowledge that suicidal behavior goes beyond direct self-imposed death, and have dealt with this problem of over-inclusion via innovative operational definitions of self-destructive behavior. For example, Schneidman (1967) suggests that the concept of intentionality be applied to the classification of death for purposes of research, and

distinguishes between unintentioned, subintentioned, intentioned, and contraintentioned death. Lester (1972) sees acts of suicide as falling on a continuum from thoughts, through threats, attempts, and completed deaths. Kreitman et al. (1969) use the term "parasuicide" to describe a nonfatal act in which the individual deliberately causes self injury, and Lee (1985) discusses suicidal behavior which "diminishes" life as opposed to terminating it. Johnson et al. (1975) did an extensive descriptive study of "suicidal behavior with non-fatal outcome", and found it to be an increasing clinical problem in Canada. This type of research suggests that suicidal ideation and indirect self-destructive behavior may be as important as completed suicide itself. Hopefully the current more comprehensive approach, with its broadened definition of suicide, will provide clues to this important societal problem.

Discussion of indirect self-destruction has lead to the study of individuals who intentionally perform painful and destructive acts upon their bodies, but do not actually intend to die. This low-lethality self-mutilation includes superficial wrist cutting, skin carving, biting, burning, eye enucleation, and skin ulceration. For example, Pattison and Kahan (1983) describe what they call "the deliberate self-harm syndrome", revealing a typical pattern of onset in late adolescence, multiple recurrent episodes, low lethality, harm deliberately inflicted upon the body, extention of the behavior over many years, absence of motive or intention to die, and increased

incidence of schizophrenia and depression. Similarly, Rosenthal et al. (1972) investigated nonsuicidal wrist-cutting in young women, and reported histories including early physical illness, surgery, and abnormal patterns of menstruation. Based upon subject interviews, Rosenthal et al. (1972) hypothesize that an inability to express feelings/emotions produces depersonalization, and that self mutilation represents symbolic expression in an attempt to reintegrate.

CHAPTER VIII
ADOLESCENT SUICIDE

Suicide among adolescents has increased and is presently the third leading cause of death in this age group following accidents and homicide (Friedman et al., 1984). Reports obtained from the Registrar General and Statistics Canada revealed 1554 successful suicides by ten to 24-year-olds in Ontario during January, 1971 through August, 1978 (Garfinkel and Golombek, 1979). Furthermore, a review of all available emergency-room charts for individuals treated between 1970 and 1977, at the Toronto Hospital for Sick Children, showed a total of 605 suicide attempts by 505 persons between the ages of 6.0 and 20.9 years (Garfinkel, Froese, and Golombek, 1979). These statistics regarding suicide and suicide attempts become even more alarming in light of the fact that the situation is worsening; for example, Garfinkel and Golombek (1979) reported a 42% increase in the Canadian adolescent suicide rate between 1971 and 1977.

In British Columbia the situation is equally alarming, with the Lower Mainland demonstrating the highest adolescent suicide rate in Canada--20/100,000 (Tonkin, 1981). The Mortality Atlas of Canada (1980) reports that the number of adolescent suicides per year in British Columbia has risen from 12 in 1970 to 38 in 1979. Furthermore, in certain areas of B.C. Native Indians account for 50% of all adolescent suicides (Tonkin, 1981). In B.C., as elsewhere, adolescent males account for 75% of

successful suicides, although females make more attempts (Rosenthal, 1981), a finding which may be related to choice of method. More specifically, female adolescents in B.C. were found to use alcohol and/or drugs as a successful suicide method more often than did males (43% vs. 10%). On the other hand, males used a firearm more frequently than did females (51% vs. 26%) (B.C. Coroners Report, 1978-80). Finally, for every successful adolescent suicide in B.C., 15 to 20 young people are admitted to hospital due to self-injury (B.C. Coroners Report, 1978-80).

Theories regarding adolescent suicide are as many and varied as those for the adult population. Despert (1952) suggested that suicide by adolescents and children is primarily an impulsive act. He hypothesized that young people do not have a realistic concept of death, and are therefore limited in their capacity to plan for suicide. Bender (1953) proposes that adolescents attempt suicide because of perceived inferiority. This is consistent with Elkind's (1967) theory that adolescents carry with them an "imaginary audience" which analyzes and evaluates them continually. Stengel (1960) suggests that much of adolescent suicidal behavior is revengeful and represents an effort to manipulate or influence the actions or attitudes of others. For example, rebellion against adults and an attempt to make parents pay for the neglect of their children may be factors in adolescent suicide (Bender and Schilder, 1937; Kanner, 1959).

In contrast to the adult population, the role of depression in adolescent suicidal behavior has historically been deemphasized, due perhaps to the traditional view that diagnoses in the adolescent age range are unreliable. However, a newly emerging perspective suggests that psychiatric illness, and affective disorders in particular, may be diagnosed during adolescence using adult criteria (Carlson et al., 1980; Strober et al., 1981). Consequently, research is beginning to point to a strong link between depression and suicide for adolescents, as has already been demonstrated for adults. For example, Clarkin et al. (1984) compared psychiatric diagnosis and severity of suicide attempts, and found that affective disorder diagnoses for both groups were similar. Similarly, Friedman et al. (1984) point to a family history of depressive disorders in seriously suicidal adolescents. Because current data suggest strongly that depression is more common during adolescence than has previously been believed, future investigation of the depression-suicide relationship for adolescents is strongly recommended.

Many researchers have suggested a relationship between adolescent suicidal behavior and a chaotic or disorganized family history, including lack of empathy, scapegoating, family fragility, communication disturbances, and intolerance for crisis (Miller, 1981). For example, Petzel and Roddle (1981) suggest that adolescent suicide results when extreme family disruption becomes intolerable. Similarly, there is considerable evidence that the histories of suicidal adolescents often

include chaotic and broken homes, family delinquency, the absence of one or both parents, and general instability (Miller, et al., 1982). In a now classic study, Stanley and Barton (1970) reported that over 95 percent of the adolescent attempters in their sample had lost a parent before the age of 12, compared with only 50 percent of matched controls.

Recent data, however, has found this relationship between adolescent suicide and familial discord/disorganization to be much more complex than was previously thought. More specifically, Garfinkel and Golombek (1979) found significant differences between adolescents who completed suicide and those who attempted suicide, in regard to family histories. Attempters were found to have histories of scholastic difficulties, family discord/breakdown, and family history of suicide, but were much less likely to demonstrate evidence of severe affective disorder or psychotic episodes. Successful suicides, on the other hand, had maintained stable adjustments at home, school, and work, but showed significantly more evidence of severe psychopathology (affective and schizophrenic symptoms). Accordingly, the authors hypothesized that an adolescent who completes suicide is less likely to be maladjusted. He/she was probably seen as functioning adequately in a stable and integrated family situation; the suicide follows the development of a major psychiatric illness, but is otherwise unpredictable. Conversely, "attempted" suicide is seen as expressing a history of conflict, dilemma, instability, and chronic lack of support.

Although Garfinkel and Golombek (1979) are suggesting differentiation of attempted and completed adolescent suicide into two discrete categories, it is recommended that this finding be interpreted with caution. More specifically, it has been demonstrated that the majority of completed suicides have previously been attempters (Pokorny, 1983), pointing to overlap of the two discrete categories. Furthermore, the notion that adolescents who complete suicide have stable family backgrounds, but suffer severe psychosis (schizophrenia, depression), is inconsistent with the well-supported theory that psychosis is itself associated with disturbed family history (Laing, 1967; Lidz, 1973; Bowen, 1960). More research in this area will be required (particularly within adult populations) before conclusions can be made.

As in the case with adult suicidal behavior, psychometric and multivariate techniques have allowed for a more empirical approach to the study of adolescent self-destruction. As a result, current theories of adolescent suicide are more "verifiable", and therefore more useful. For example, Kazdin et al. (1983) investigated the relationship between suicide and hopelessness within an adolescent population. Using a hopelessness scale which was modelled after the adult version (Beck et al., 1974), they found the traditional depression-suicide relationship to be no longer significant once variance due to hopelessness was partialled out (controlled). This finding that hopelessness is basic to adolescent suicide is

consistent with research involving adult populations (Minkoff, et al., 1973), and suggests that cognitions involving negative expectations for the future are more closely related to adolescent suicidal behavior than clinical depression.

There is need for more research into the relationship between hopelessness and adolescent suicide. For example, the finding that for adults hopelessness may be confounded with social desirability, has never been investigated within an adolescent population. Furthermore, the impact of hopelessness has never been determined for high-risk adolescent subgroups, such as incarcerated youths. Consequently, it is the intention of the current study to investigate the relationship between suicide, hopelessness, and social desirability within a population of incarcerated adolescents.

CHAPTER IX

SUICIDE IN THE CORRECTIONAL SYSTEM

The suicide rate for Canadian prisoners is six times greater than the estimate of 12 to 20 per 100,000 for the general population. Subsequently, suicide represents the leading cause of death in Canadian Correctional facilities (Burtch and Ericson, 1979). Furthermore, within this group, British Columbian federal prisoners have the highest rates of self-inflicted injury (Supply and Services Canada, 1981). The situation in the U.S. would appear to be similar. Esparza (1973) placed the rate of suicide in six Michigan jails at 57.5/100,000. Heilig (1973) reported a rate of 108/100,000, in the Los Angeles jail system. In an extensive study which reviewed the suicide rate among male prisoners in England between 1880 and 1971, rates were found to vary between 40 and 60 per 100,000 (Topp, 1979).

Two explanations are postulated for the disproportionately high rate of suicide within correctional facilities. The first concerns the prisoners themselves. Whitmer (1980) points out that the prison population is more likely to contain alcoholic and mentally ill individuals, who, according to demographic statistics, are more likely to commit suicide. Similarly, Topp (1979) found that 37 percent of the completed suicides in British jails had had psychiatric treatment in the past. Clearly correctional populations include psychosocially impaired individuals who may be prone to depression and suicide. A second

reason for the disproportionately high suicide rate in correctional facilities may be the environment. Jails are harsh and malevolent environments, where concern for the personal satisfaction of the individual is minimal. Personal freedom is extremely limited, and the environment could in many circumstances be described as physically dangerous. This atmosphere can contribute to an attitude of hopelessness and despair, resulting in increased suicide attempts (Rome, 1970).

There has not been a great deal of research pertaining to suicide in prison. Of approximately 4000 publications on suicidal behavior within this century, only 18 studies of inmate suicide have been undertaken between the years 1897 and 1970 (Farberow, 1972). Furthermore, investigation into prisoner suicide has dealt mainly with prevalence, descriptive/demographic data, and situational factors. The involvement of complex constructs such as hopelessness, depression, and social desirability in self-destructive acts has not been researched within a prison population.

In British Columbia, the Ministry of the Attorney General reported on 35 suicides occurring in the adult provincial jail system between 1970 and 1980 (Denoon, 1983). A disproportionately high rate of suicide was found for individuals on immigration detention, violent offenders, those with psychiatric histories, remanded prisoners, and those housed in protective custody, observation, and segregation areas. The increased rate of suicide for remanded prisoners was highly

significant. More specifically, seventy percent of inmate suicides occurred among remanded individuals, although this group accounts for only 40% of all the prison population. No particular trend or significant correlations were found for suicide rate, age, sex, place of birth, race (ethnic background), marital status, intelligence, and religion (Denoon, 1983).

Other research regarding prison suicide has similarly dealt with demographic variables. First, it has been demonstrated that the average age of suicidal inmates tends to be similar to, or slightly below the 24 to 34 year age range of the general prison population (Topp, 1979). For example, Beigel and Russell (1972) found the average age of successful suicides in Arizona jails to be 22.6 years. In a study of suicides in British prisons between 1880 and 1971, Topp (1979) found the mean age to be 29. In a similar study of 6 Michigan jails, Esparza (1973) found a mean age of 28.8 years.

Second, suicides are much more likely to occur during the first few weeks in custody (Heilig, 1973). Danto (1972) points out that most serious suicide attempts occur within the first 48 hours of incarceration. Additionally, anticipation of imprisonment in excess of 18 months increases the probability of suicide by six or seven times (Topp, 1979).

Third, many of the suicides had brought themselves or had been brought to the attention of physicians within the prison;

39 percent were actually receiving treatment at the time of, or just prior to their suicide (Topp, 1979). Finally, Topp (1979) found that 59 percent of successful suicides occurred at times of staff availability (i.e. just prior to regular inspection), and deduced that the inmates had expectation of rescue and therefore were attention seeking.

CHAPTER X

INTENT OF THE STUDY

First, the proposed research will provide demographic and descriptive information regarding incarcerated adolescents, with special emphasis upon self-destructive behavior within this population. There has been a great deal of research and theorizing regarding adult suicide (Farberow, 1980), including suicide among incarcerated adults (Denoon, 1983; Topp, 1979); and another fairly extensive body of literature describes suicide among adolescents (see above); but to date there has been no research into suicide within a population of imprisoned youth. The information provided by such research would be timely and important for several reasons. More specifically, in light of alarming increases in the rate of crime for young people (Schoemaker, 1984), any information regarding delinquent adolescents would be useful and relevant. Furthermore, extrapolating from research with incarcerated adults, would suggest that incarcerated adolescents (as opposed to normal adolescents) are at increased risk for self-destruction. Not only would it be useful to test this hypothesis, but assuming that it is true, more information will be required in order that intervention may occur. Finally, adolescent suicide is increasing (Hollinger and Offer, 1982), and has devastating implications for our society. The phenomenon must be more fully understood, necessitating investigations within various and diverse populations.

Second, the proposed research will investigate the relationship between hopelessness and self destructive behavior (including attempted suicide, non-suicidal self-mutilation, and suicidal ideation), within a population of incarcerated adolescents. Furthermore, it will be determined whether social desirability confounds the measurement of hopelessness. Many researchers see this controversy as ongoing, even within the adult population (Minkoff et al., 1973; Petrie and Chamberlain, 1983; Nevid, 1983; Linehan and Nielson, 1983). The suicide-hopelessness relationship has never been investigated among incarcerated adolescents. The need for research is clear.

Third, the present study will address the problem of suicide prediction, this time within a population of incarcerated adolescents. Due to time constraints, the project will be retrospective as opposed to prospective/longitudinal, and will therefore "post-dict" rather than predict suicidal behavior.

It is expected that prediction (post-diction) will be superior to that of previous research for the following reasons: (1) A large item pool will ensure the best combination of items for optimal discrimination (see Method section below). (2) Because incarcerated populations tend to have higher rates of suicide, the problem of low base rates will be slightly ameliorated. (3) The present research will utilize the criterion of parasuicidal behavior as opposed to the more simplistic criterion of completed suicide. More specifically, parasuicidal behavior will include ideation about self-destruction, ideation

in combination with suicidal attempts, and self-destructive behavior not intended to be fatal (self-mutilation). Not only is this more realistic according to Farberow's indirect suicidal behavior classification system (Farberow, 1980), but because parasuicide is more prevalent than completed suicide, the base rate problem will again be improved.

The present study is in no way intended as a definitive study in the prediction of suicide. Because time constraints preclude a longitudinal prospective approach, thereby necessitating that one postdict, inferences about the future are not possible. More specifically, although a certain combination of data may accurately "post-dict" past suicidal behavior, there is no logical reason to assume that these combinations of data will similarly predict future behavior. Clinical research often seeks compromise if critical issues are to be resolved. Retrospective post-diction represents such a compromise, and may be a "beginning" in the area of suicide prediction among incarcerated adolescents.

PART B

METHOD

CHAPTER I

SUBJECTS

Subjects for the present research were male and female residents of a high security, Provincial youth detention center (YDC). Researchers sought informed consent from each of the participants, and all subject involvement was strictly voluntary. Due to the relatively large sample size and negligible refusal rate, the current research represented a canvassing of nearly the entire institutional population.

The 101 subjects were adolescents (aged 12-17) who were remanded (N=33) or sentenced (N=68) by the courts to YDC. ("Remanded" individuals face charges for which they have not yet been convicted, and are therefore being held prior to, and between court appearances. On the other hand, "sentenced" residents have been found guilty of a criminal offense, and are therefore incarcerated within the institution.) Ninety seven percent of the sample was male; 88% were caucasian, 12% Native Indian; the average age was 15.8 years; and the average length of sentence was 8.9 months.

In order to guarantee knowledge of the institution sufficient to complete the Correctional Institutional Environment Scale (CIES), individuals chosen as subjects had resided at YDC for at least two weeks. Although remanded residents spend less time within the institution, their relatively large numbers ensured that both remanded and

sentenced residents were included in the subject pool.

CHAPTER II

SETTING

The research was conducted in a correctional institution in Burnaby, British Columbia, Canada. The institution has an average resident population of 100, 10% to 15% of whom are female. Remanded individuals constitute approximately 35% of the resident population; sentenced residents comprise the remaining 65%. The detention center employs approximately 65 permanent staff members, and 30 full-time auxiliary employees. Staff members are 50% male and 50% female.

The institution consists of a modern single-storey building including a gymnasium and swimming pool. Additional space and facilities have been created by adding a mobile unit and renovating a nearby student residence. Grassed fields surround the institution with the perimeter being marked by tall barbed and razor wire fences.

The 12 units provide several levels of security, ranging from individual cells similar to those found in adult prisons, to an "open custody" cottage setting where sentenced residents enjoy considerable freedom, including unlocked perimeter doors.

Because of the emphasis upon security, therapeutic intervention programs are few. With the exception of the high security units, all residents have the option of attending school within the institution. "Evening program" is a loosely

organized attempt at in-house activity, where the staff on duty organize and implement a variety of projects--leather crafting, cooking, music appreciation, etc.. A recreation coordinator is in charge of swimming and gymnasium activities. Finally, there exists a token economy allowing residents to earn points which may later be traded for cigarettes, candy, soap, shampoo, etc.. It is on the basis of token economy points that residents may earn transfer to a more privileged unit.

CHAPTER III

INSTRUMENTS ADMINISTERED

Psychometric instruments administered to subjects were those which on the basis of the literature and empirical consideration allow testing of various constructs thought to be related to self-destructive behavior. All chosen instruments have been demonstrated to have acceptable psychometric properties.

Correctional Institutions Environment Scale (CIES).

The Correctional Institutions Environment Scale (CIES) is designed as a measure of consensual beta press or shared environmental perceptions within correctional institutions (environments) (Moos, 1968). Original items were adapted from the Ward Atmosphere Scale (WAS) by residents and staff who were familiar with correctional institutions (Moos, 1968). In subsequent item analysis, items were eliminated if they did not significantly discriminate among units, if they were found to apply only to extreme units, or if the items correlated highly with social desirability as measured by the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1964). Logical considerations of Murray's (1938) environmental press categories resulted in the identification of 12 subscales (Moos, 1975). Item intercorrelations, item to subscale correlations, and subscale intercorrelations were determined, and based upon these data nine final subscales were chosen; involvement, support,

spontaneity, autonomy, order and organization, clarity and staff control (Moos, 1975; Wenk and Moos, 1972).

The present CIES, known as form R, consists of 90 true or false statements or items. If a respondent considers the expressed behavior or quality to be present in the correctional environment, he or she marks "true". A "false" response indicates opinion that it is not present. For example, a beta press toward involvement is inferred from the following kind of item: "Residents put a lot of energy into what they do around here".

There is considerable evidence for the validity of the CIES. For example, Frank and Michel (1972) studied an incentive pay program based on inmate performance, and were able to demonstrate changes in the social climate as measured by the CIES. Similarly, Moos (1970) utilized the CIES in order to demonstrate relationships among the social climates of a correctional unit, the reactions of the residents to that unit, and the type of initiatives that residents perceive themselves as likely to take while on the unit.

The CIES was included in the battery of instruments because of the predictive component of the current research. It is theoretically reasonable to hypothesize that subjective perceptions of the correctional institution will be included in a set of independent variables which predict self-destructive behavior.

The Reasons For Living Inventory (RFL).

Linehan et al. (1983) noted that the majority of research into suicide seeks to identify maladaptive attributes of suicidal persons with little or no regard for adaptive characteristics present among nonsuicidal individuals. Furthermore, since researchers such as Frankl (1959) and Des Pres (1976) found beliefs about life and expectations for the future to be critical in war prisoners' will to live, Linehan et al. (1983) set out to develop an instrument to measure beliefs potentially important as reasons for not committing suicide.

A pool of 72 reasons for living was generated by 65 individuals. Subsequent factor analyses performed on two additional samples reduced the number of items from 72 to 48, and produced six primary reasons for living ("factors"): survival and coping beliefs, responsibility to family, child-related concerns, fear of suicide, fear of social disapproval, and moral objections. The items were then arranged into the Reasons for Living Inventory (RFL), with the factors representing six categories or scales. This psychometric instrument requires a rating of how important each item (reason for living) would be if suicide were considered.

Validity evidence for the RFL has been provided by Linehan et al. (1983). They administered the instrument to two samples, 197 Seattle shoppers and 175 psychiatric inpatients. Results indicated that the RFL differentiated suicidal from nonsuicidal

individuals in both samples, with the "survival and coping", the "responsibility to family", and the "child-related concerns" scales proving most effective at differentiating the groups. These data are seen as generally supportive of cognitive (Beck, 1963) and cognitive-behavioral (Linehan, 1981) perspectives, which emphasize cognitive patterns (i.e., beliefs, expectations, styles, etc.) as mediators of suicidal behavior.

The Beck Hopelessness Scale.

Hopelessness is seen by many as an integral characteristic of depression (Beck et al., 1974; Beck, 1967; Melges and Bowlby, 1969). In order to study this important phenomenon, Beck et al. (1974) designed a psychometric instrument to reflect negative life expectancies. Nine items were selected from a well known test of attitudes about the future (Heimberg, 1961), and 11 items were taken from a pool of pessimistic statements made by psychiatric patients. The 20-item scale was administered to a group of psychiatric patients, and was appraised by several clinicians, resulting in minor changes in wording and increased face validity (Beck et al., 1974).

Reliability evidence for the Beck Hopelessness Scale (BHS), in the form of internal consistency coefficients of .93, has been provided by Beck et al. (1974). Concurrent validity for the BHS was determined by comparing BHS scores with clinical ratings of hopelessness, resulting in correlations of .86 (Beck et al., 1974). Furthermore, the BHS has often been used as a measure in

the testing of various hypotheses, thereby demonstrating construct validity. For example, using the BHS, it was determined that suicidal intent is more highly correlated with negative expectancies (hopelessness) than with depression (Minkoff, Bergman, Beck, and Beck, 1973).

Factor analysis of the BHS suggested three general factors: "feelings about the future" (i.e., hope and enthusiasm), "loss of motivation" (i.e., giving up, not trying), and "future expectations" (i.e., anticipation of a dark future, things not working out).

The Automatic Thoughts Questionnaire.

The Automatic Thoughts Questionnaire measures the frequency of occurrence of automatic negative thoughts (negative self statements) Hollon and Kendall (1980). The initial pool of items was generated by undergraduates who were asked to recall dysphoric experiences and associated cognitions. One hundred representative cognitions were selected from this pool, and administered to another sample, along with the MMPI Depression scale and the Beck Depression Inventory. Those items which discriminated between depressed and non-depressed subjects were identified, resulting in the 30 item Automatic Thought Questionnaire (ATQ-30) (Hollon and Kendall, 1980).

Hollon and Kendall (1980) demonstrated a high degree of reliability for the ATQ-30 using split-half and coefficient

alpha statistics. The ATQ-30 was further found to discriminate depressed and non-depressed criterion groups, thereby demonstrating construct validity (Hollon and Kendall, 1980).

Factor analysis of the ATQ-30 suggested two major factors, personal maladjustment and negative self-concept, and two lesser factors, low self-esteem and giving up (helplessness) (Hollon and Kendall, 1980).

Edwards Social Desirability Scale.

Edwards (1957) discusses the tendency of subjects to attribute to themselves, in self description, personality statements which are socially desirable. This phenomenon of social desirability (SD) is so highly correlated with other measures of personality (i.e., all scales of the MMPI and other inventories) that the systematic variance remaining after correlations with SD have been accounted for is small indeed (Edwards, 1957). Because these and other data suggest social desirability to be a very basic personality characteristic, Edwards set out to develop a corresponding psychometric instrument (Edwards, 1970).

An initial set of items from several of the MMPI scales (Anxiety, F, L, and K scales) was submitted to ten judges who were instructed to respond to each one in a socially desirable fashion. For 79 of the 150 statements there was clear agreement as to what the socially desirable response would be. Subsequent item analysis identified a subset of 39 items which were best

able to differentiate between low and high scores; these 39 items constitute the Edwards Social Desirability Scale (SDS) (Edwards, 1970).

The Edwards SDS is highly correlated with other personality measures, thereby demonstrating construct validity. For example, very high negative correlations were found between the Edwards scale and most of the MMPI clinical and derived scales, which are scored in a socially undesirable way (Merill and Heathers, 1956). Positive correlations were obtained between the Edwards SDS and the K and L scales, both of which are keyed in the socially desirable direction (Crowne and Marlowe, 1960; Merill and Heathers, 1956).

Marlowe-Crowne Social-Desirability Scale (M-C SD scale).

The Marlowe-Crowne Social-Desirability Scale (M-C SD scale) is a self-report true-false psychometric inventory designed to assess the degree to which the self is presented as socially acceptable (Crowne and Marlowe, 1964). Each of the initial 50 items came from current personality inventories and met the criterion of cultural approval while remaining untrue for virtually all people (i.e. "I'm always willing to admit it when I make a mistake"). These items were submitted to ten judges who determined that for 47 of the items the socially desirable response was obvious, thereby reducing the original item pool by three. Subsequent item-analysis revealed 33 items which were most able to discriminate between high and low scores; these items make up

the final and current form of the M-C SD scale (Crowne and Marlowe, 1964).

Estimates of internal consistency and test-retest coefficients indicate satisfactory reliability of the inventory (Crowne and Marlowe, 1964). Like the Edwards SD scale, the C-M SD scale correlated with the MMPI in predictable ways, thereby demonstrating concurrent and construct validity. For example, there is a positive correlation of the C-M SD scale with the K and L validity scales of the MMPI, and a negative correlation with the F scale (Crowne and Marlowe, 1964).

Beck Depression Inventory (BDI).

The Beck Depression Inventory is considered to be one of the best self-report instruments available for measurement of depression, and has been used as a pretherapy and post-therapy measure (Fuchs, 1975), and as a measure of therapeutic progress (Rush et al., 1975).

The 21 items on the self-administered inventory were selected to represent depressive symptoms, each item consisting of four or five statements listed in order of symptom severity (Beck, 1972). Item categories include mood, pessimism, crying spells, guilt, self-hatred, irritability, social withdrawal, work inhibition, sleep and appetite disturbance, and loss of libido (Beck, 1972). Various factor analyses have revealed three general factors: guilty depression, retardation, and somatic

disturbance (Cropley and Weckowicz, 1966; Pichot and Lemperiere, 1964; Weckowicz et al., 1967.).

Various measures of reliability (odd-even and test-retest) have demonstrated the BDI to be a highly reliable psychometric instrument (Beck et. al., 1961; Rehm, 1981; Miller and Seligman, 1973). Concurrent validity studies have yielded coefficients averaging .66 (Byerly and Carlson, 1982). Construct validity has been demonstrated by a number of investigations in which the BDI has been used as the criterion measure (Beck and Beamesderfer, 1974).

Carlson Psychological Survey (CPS).

The Carlson Psychological Survey (CPS) is a self-report personality inventory intended primarily for individuals within the criminal justice system. In developing the CPS, Carlson (1982) reviewed psychological, psychiatric, and social work reports in the files of a correctional institution, in order to compile a list of phrases and adjectives used to describe incarcerated individuals. Based upon this list, a pool of items was generated where for each item the subject chooses from a gradation of five degrees of applicability to self (Carlson, 1982). Subsequent item analysis identified 50 items which were most able to differentiate high and low scores (Carlson, 1982). From the list of items four content areas or subscales were identified: chemical abuse, thought disturbance, antisocial tendencies, and self-depreciation. A validity scale was also

added (Carlson, 1982).

Since the CPS was developed and normed using incarcerated individuals, it is well suited for use within forensic populations. For example, the correlation between the CPS scales and IQ are very low, thereby increasing the range of the population to whom the test may be administered. Studies of test-retest reliability have yielded coefficients well within the acceptable range (Carlson, 1982). There is considerable evidence for the validity of the Carlson Psychological Survey. For example, the CPS was found to differentiate between the various offense categories (Carlson, 1982). Similarly, construct validity was verified when the CPS was found to be sensitive to psychological changes as a result of group therapy (Wilson, 1976). Finally, the CPS was found to identify discrete and meaningful types of offenders (Carlson, 1972).

In order to determine the reliability and validity of the CPS within an adolescent population, Friesen (1984) administered the CPS to 350 incarcerated adolescents. Results indicated that adolescents performed similarly to adults; differences were not of sufficient magnitude to preclude its use within a youth population.

Suicide Probability Scale (SPS).

The Suicide Probability Scale (SPS) is a brief self-report measure for the assessment of suicide risk in adolescents and adults. Based upon theories of suicidal behavior and clinical experience, Cull and Gill (1982) generated a list of over 200 items thought to be relevant to suicide potential. This list was then administered to subjects who had recently attempted suicide, in order to identify those items most able to differentiate high and low scorers. The remaining items were then reviewed by a panel of clinical judges in order to rate clarity and appropriateness. The resultant 36-item inventory constitutes the final version (Cull and Gill, 1982).

Various factor analyses of the SPS have been undertaken. For example, Cull and Gill (1982) identified six factors: suicidal ideation, negative self-evaluation, hostility, angry impulsiveness, interpersonal closeness, and positive outlook. Based upon this and other factor analyses (Beck et al., 1979), four subscales were identified and incorporated: hopelessness, suicide ideation, negative self-evaluation, and hostility.

Split-half and test-retest estimates of reliability yielded coefficients sufficient to demonstrate reliability of the SPS (Cull and Gill, 1982). Concurrent validity was demonstrated by a correlation between SPS items and an experimental MMPI scale designed to measure threatened suicide (Farberow and Devries, 1967). Furthermore, extensive studies of the ability of SPS

items, subscales, and fullscale to discriminate between criterion groups of normals, psychiatric inpatients, and suicide attempters, demonstrated criterion-related validity of the inventory (Cull and Gill, 1982). As a test of construct validity a relationship between the SPS and various MMPI subscales was demonstrated (Cull, and Gill, 1982).

Suicidal Behavior and Demographics Questionnaire.

All subjects were required to complete a suicidal behavior and demographics questionnaire, which was developed by the author. Items include age, sex, status (sentenced-remanded), length of sentence, involvement in open-custody program, most recently completed school grade, present offence, past convictions, length of previous stays at Y.D.C., length of of present stay at Y.D.C. (thus far), age at which a parent was lost, number of foster or group home placements, frequency of suicidal ideation, number of past suicidal attempts (including when, how, and why), and frequency of self-mutilating behavior (including method/methods used). See Appendix A for the Suicidal and Demographics questionnaire.

For purposes of computer data analysis dichotomous variables, such as sex or status (remand-sentenced), were coded as zero or one, and analyzed accordingly. Continuous variables, such as age or response to a scale between one and ten, were encoded as the actual numerical response.

CHAPTER IV

TESTING PROCEDURE

All testing was carried out in a quiet and isolated room. All subjects completed the Correctional Institution Environment scale, (CIES), the Reasons for Living Inventory (RFL), the Beck Hopelessness Scale (BHS), the Automatic Thoughts Questionnaire (ATQ), the Edwards Social-Desirability Scale (Edwards SD scale), the Beck Depression Inventory (BDI), the Carlson Psychological Survey (CPS), the Suicide Probability Scale (SPS), the Marlowe-Crowne Social-Desirability Scale (M-C SD scale), and a demographics questionnaire. Approximately ten months were required for collection of data. Participation was voluntary, and subjects were not paid for their involvement.

Prior to the testing, subjects were instructed regarding procedure, and briefed regarding confidentiality of results. This instruction occurred verbally (via the tester) and via a face sheet which explained that names are not being attached to specific scores and that individual results are confidential.

Instructions to the subjects provided information relevant to test completion. Prior to completing the demographics questionnaire, subjects were instructed to be as precise as possible. Instructions for the psychometric instruments directed subjects to choose the most acceptable alternatives for each of the forced-choiced items. Following the presentation of instructions and guarantee of confidentiality, all subjects were

asked to sign a standard subject consent form (See Appendix B for face sheet; Appendix C for subject consent form).

Testing material was organized into a packet. The face sheet was attached to this packet, and standardized instructions designed for use with the various psychometric instruments preceded each of these tests. Subjects were brought into the testing room, where instructions (face sheet) were presented, and testing executed. Testing followed the structured interview format, where the researcher tested subjects individually, reading instructions and items aloud, and recording all responses. This interview format facilitated rapport, controlled for deficient reading skills, and ensured that there was no missing data, all of which increases confidence in the data.

In order to control for the effect of order, sequential presentation of the psychometric tests and demographics questionnaire (independent variables) were systematically varied. Ten randomized orders or sequences were generated and presented equally among the subjects.

CHAPTER V

DATA ANALYSIS

In order to investigate the relationship between self-destructive behavior and hopelessness, and to determine whether social desirability confounds the measurement of hopelessness, image factor analysis as described by Kaiser (1963) was used. Like principal component analysis, image analysis is an effective data reduction technique. However, in contrast to principle component analysis, image analysis is a type of common factor analysis, and therefore accounts for unique or error variance. Common factor analysis assumes that each variable is influenced not only by determinants which are shared by other variables in the group ("common variance"), but also by idiosyncratic determinants which are not shared by any other variables (unique or residual variance). It is further assumed that the unique part of a variable does not contribute to relationships among variables, and that correlations are entirely the result of variables sharing some of the common determinants. Although image analysis is not the only type of common factor analysis, it is unique in its capacity to test whether or not the common factor model is indeed appropriate, and was therefore utilized in the current study.

In order to "postdict" suicidal and parasuicidal behavior, stepwise multiple regression was utilized. Multiple regression allows analysis of the relationship between a dependent or

criterion variable (suicidal versus nonsuicidal history, as determined by responses to the suicide/demographics questionnaire) and a set of independent or predictor variables (BDI, CIES, Edwards, CPS, etc). Furthermore, regression analysis suggests a prediction equation that indicates how scores on the independent variables could be weighted and summed to obtain the best possible prediction (or in this case postdiction) of past suicidal and parasuicidal behavior.

In order to control for order of presentation, the sequence of independent variables (psychometric instruments and the demographics questionnaire) was varied systematically. Ten randomized orders were generated, and presented equally among the subjects, resulting in ten groups, each containing ten subjects and each receiving a different order of tests. Standard analyses of variance were used to test for significant differences between subject groups, for each of the psychometric instruments.

PART C
RESULTS

CHAPTER I

ANALYSIS OF VARIANCE FOR ORDER OF PRESENTATION

As a first step, it was important to determine whether the order of tests/questionnaires influenced the findings. Therefore the sequence of independent variables (psychometric instruments and the demographics questionnaire) was systematically varied. Standard analyses of variance were used to test for significant differences between subject groups, for each of the psychometric instruments. Results indicated that no two groups were significantly different at the .05 level. This finding strongly suggests that scores on psychometric instruments were not influenced by the ordering of the test battery.

CHAPTER II

FACTOR ANALYSIS

The image factor analysis with oblique rotation extracted 15 factors from 48 variables. Subsequent scree-testing suggested that the number of factors be limited to five. These factors are ordered and numbered according to relative size or importance. The size of each factor was determined by summing the squared factor loadings. Factor loadings for each of the five factors are displayed in descending order in Tables 2-6.

Of the five factors, Factors 1, 2, and 3 are most relevant to the current study. To begin with, the sums of the squared factor loadings suggest that Factors 4 and 5 are relatively unimportant. Furthermore, within the theoretical framework of the current investigation, Factors 4 and 5 are somewhat uninterpretable. For example, although the current research is concerned with suicidal behavior, those variables which have to do with suicide, tend not to load on Factors 4 and 5. More specifically, of the 16 variables which pertain to suicide (Suicide Probability Scale, six subscales of the Reasons for Living Inventory, self-reported suicidal ideation, self-reported number of past suicide attempts, self-reported self-mutilation ideation, self-reported frequency of past self-mutilation, and self-judged likelihood of suicide within the day, several days, month, year, and lifetime), only one, self-reported self-mutilation ideation, loaded on Factor 4. Also, this loading was the smallest of the sequence. Similarly, for Factor 5, the only

suicide-related variables which loaded on it, were self-judged high likelihood of suicide within lifetime and within the next year. Again, the loadings were relatively small.

Although Factors 4 and 5 did not involve suicidal behavior, suicide-related variables loaded heavily on Factors 1, 2, and 3. Therefore a three factor solution was also analyzed. However, because the three factor solution was nearly identical to the first three factors of the five factor solution, and because the scree-test suggested five factors, the five factor solution, with emphasis upon the first three, is presented and discussed.

Factor 1: Psychopathological Self Destructive Behavior

Careful analysis of the nature, order, and valence of variables which load on each factor, suggests factor labels or names. For example, factor loadings for Factor 1 reflect psychopathology associated with suicidal behavior and ideation. Of the 15 variables which load on this first factor, eight are suicide related and suggest a high rate of suicidal behavior/ideation--Suicide Probability Scale; self-reported suicidal ideation; self-judged likelihood of suicide in lifetime; self-judged likelihood of suicide within the next year; self-judged likelihood of suicide within several days; self-judged likelihood of suicide today; self-judged likelihood of suicide this month, and self-reported self-mutilation ideation. Additionally, four of the highest loading variables

for Factor 1, pertain directly to psychopathology--a high level of self-depreciating cognitions, as measured by the Automatic Thoughts Questionnaire; high levels of depression, as measured by the Beck Depression Inventory; thought disturbance, as measured by the thought disturbance subscale of the Carlson Psychological Survey; and self depreciation, as measured by the self-depreciation subscale of the Carlson. Furthermore, there is reason to believe that the highest loading variable for Factor 1, the Edwards Social Desirability Scale, is more reflective of psychopathology than approval seeking. First, Tables 2-6 demonstrate that the Edwards loads very differently from the Crowne-Marlowe Social Desirability Scale. Second, content analysis of the Edwards items suggest that item responses which present the individual positively, are more indicative of mental health than the tendency to seek social approval. Consequently, the strong negative loading for the Edwards on Factor 1 is likely suggestive of psychopathology, and is consistent with the view that Factor 1 represents psychological disturbance associated with suicidal behavior/ideation. The only variables which load on this first factor, but do not pertain directly to psychopathology or suicide are a high number of school failures, and hopelessness as measured by the Beck Hopelessness Scale. In both cases, loadings were low.

Factor 2: Chaotic Life History/Self Destructive Behavior

The nature and arrangement of variables which load on Factor 2 reflect a chaotic life history, that is associated with suicidal behavior and ideation. Fourteen of the 22 variables which load on Factor 2 are suicide related. These variables include low motivation to live, as measured by six subscales of the Reasons for Living Inventory; self-judged high likelihood of suicide within lifetime; self-judged high likelihood of suicide within the next year; self-reported high rate of suicidal ideation; self-reported high rate of self-mutilation ideation; self-judged high likelihood of death if suicide were attempted; high probability of suicide, as measured by the Suicide Probability Scale; self-reported high incidence of past self-mutilation; and self-reported high rate of past suicide attempts. Of the remaining variables which load on Factor 2, the majority suggest a chaotic and troubled life history--antisocial behavior, as measured by the "antisocial tendencies subscale" of the Carlson Psychological Survey; hopelessness, as measured by the Beck Hopelessness Scale; drug abuse, as measured by the "chemical abuse subscale" of the Carlson Psychological Survey; numerous school suspensions; sentenced as opposed to remand status; and numerous foster/group home placements. Furthermore, the involvement of the Reasons for Living Inventory is highly consistent with a chaotic life history. Those reasons for living which the RFL subscales measure, include constructs such as survival beliefs, moral objections to suicide, and concern for

family, attitudes which would probably be less pronounced in individuals with chaotic and disturbed histories. Therefore, it is not surprising that although the first three factors include suicide, only Factor 2 includes a large number of RFL subscales.

Factor 3: Social Approval Motivated Self Destructive Behavior

Loadings for the third factor indicated a very high rate of suicidal behavior/ideation, associated with the need for social approval. Of the nine variables which load on factor three, eight are suicide related--self-judged high likelihood of suicide within the next month; self-judged high likelihood of suicide within several days; self-reported high rate of past suicide attempts; self-judged high likelihood of suicide within the next year; self-reported high rate of suicidal ideation; self judged high likelihood of suicide today; self-judged high likelihood of suicide within lifetime; and low fear of social disapproval of suicide, as measured by the "fear of social disapproval" subscale of the Reasons for Living Inventory. The only variable involved with factor three which does not pertain directly to suicide, is the tendency to seek social approval and peer acceptance, as measured by the Crowne-Marlowe Social Desirability Scale.

Given that factor three is almost entirely associated with suicide, it is puzzling that variables which traditionally accompany suicide, such as hopelessness and depression, are not

involved. The involvement of the Crowne-Marlowe Social Desirability Scale suggests an explanation for this divergency, in that suicidal behavior may be motivated by the need to win the approval of a suicidal peer group. Absence of traditional suicide correlates such as depression and hopelessness, suggest that individuals who engage in approval-motivated, self-destructive conduct, are not clinically depressed. Although the behavior is present, it is attributable to transient environmental determinants, as opposed to the usual, more pervasive underlying personality or emotional factors.

TABLE 2

Factor 1

Psychopathological Self-Destructive Behavior

Edwards Social Desirability.....	-.82
Automatic Thoughts Questionnaire.....	.80
Beck Depression Inventory.....	.79
Carlson Psychological Survey--Thought Disturbances.....	.79
Suicide Probability Scale.....	.69
Carlson Psychological Survey--Self-depreciation.....	.53
Self-reported suicidal ideation.....	.46
Self-judged likelihood of suicide within lifetime.....	.38
Number of School failures.....	.38
Self-judged likelihood of suicide within next year.....	.37
Self-judged likelihood of suicide within several days.....	.30
Self-judged likelihood of suicide today.....	.30
Beck Hopelessness Scale.....	.28
Self-judged likelihood of suicide within the next month.....	.27
Self-reported self-mutilation ideation.....	.25

sum of the squared factor loadings: 4.9

TABLE 3

Factor 2

Chaotic Life History/Self-Destructive Behavior

Reasons for Living scale--survival and coping beliefs.....	-.70
Carlson Psychological Survey--anti-social tendencies.....	.68
Reasons for Living scale--moral objections to suicide.....	-.61
Reasons for Living Scale-fear of suicide.....	-.57
Beck Hopelessness Scale.....	.55
Reasons for Living Scale--fear of social disapproval.....	-.54
Reasons for Living Scale--consequences for family.....	-.49
Self-Judged Likelihood of Suicide Within Lifetime.....	.47
Reasons for Living Scale--child related concerns.....	-.46
Carlson Psychological Survey--chemical abuse.....	.45
Self-Judged Likelihood of Suicide Within the Next Year.....	.42
Self reported suicidal ideation.....	.38
Crowne-Marlowe Social Desirability Scale.....	-.36
Carlson Psychological Survey--self depreciation.....	.35
Self-reported self-mutilation ideation.....	.35
Self-judged likelihood of success if suicide were attempted	.34
Number of school suspensions.....	.30
Status (remand=0, sentenced=1).....	.30
Suicide probability scale.....	.27
Self-reported past self-mutilation.....	.26
Self-reported past suicide attempts.....	.26
number of foster or group home placements.....	.25

Sum of the squared factor loadings: 4.6

TABLE 4

Factor 3

Social Approval Motivated Self-Destructive Behavior

Self-judged likelihood of suicide within the next month.....	.70
Self-judged likelihood of suicide within several days.....	.68
Self-reported past suicide attempts.....	.58
Self-judged likelihood of suicide within the next year.....	.51
Self-reported suicidal ideation.....	.44
Self-judged likelihood of suicide today.....	.40
Crowne-Marlowe Social Desirability.....	.36
Self-judged likelihood of suicide within life.....	.31
Reasons for Living Scale--fear of social disapproval.....	-.28

Sum of the squared factor loadings: 2.9

TABLE 5

Factor #4

Correctional Institutional Environment Scale (CIES)--Support	.63
CIES Involvement.....	.59
CIES Practical Orientation.....	.58
CIES Personal Problem Orientation.....	.57
CIES Clarity.....	.50
CIES Autonomy.....	.49
CIES Order and Organization.....	.42
CIES Expressiveness.....	.37
Carlson Psychological Survey--Chemical Abuse.....	.33
Reason for Living Scale--Consequences for family.....	.29
Self-reported self-mutilation ideation.....	.28

Sum of the squared factor loadings: 2.9

TABLE 6

Factor 5

Total time spent in Y.D.C.....	-.62
Number of Y.D.C. admissions.....	-.55
School grade.....	-.41
Age.....	-.41
Self-judged Likelihood of suicide in Lifetime.....	.40
Age at initiated suicide attempt.....	-.33
Self-judged Likelihood of suicide in next year.....	.30
Number of school suspensions.....	-.30

Sum of the squared factor loadings: 2.0

TABLE 7

Factor Correlation Matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	1.00				
Factor 2	- 0.12	1.00			
Factor 3	- 0.23	0.28	1.00		
Factor 4	- 0.06	0.07	0.06	1.00	
Factor 5	0.06	- 0.10	0.08	- 0.05	1.0

CHAPTER III

RETROSPECTIVE MULTIPLE REGRESSION

Four dependent variables--number of past suicide attempts, self-reported suicidal ideation, frequency of past self-mutilation, and self-reported self-mutilation ideation, were postdicted using 43 independent variables, in a retrospective regression design. Specific results of the stepwise multiple regression for each of the dependent variables are presented in Tables 8 and 9. Both forward and backward systems of stepwise variable introduction were analyzed, but since results were similar, only the forward stepwise regression is presented.

The multiple regression results are consistent with other suicide prediction/postdiction studies, in that postdictive accuracy was low. For example, regarding the dependent variables of self-reported self-mutilation ideation, and frequency of past self-mutilation, the best linear combination of independent variables accounted for only 26% and 8% of the variance respectively (see table 9). For the dependent variables, self-reported suicidal ideation and number of past suicide attempts, although the best combination of independent variables accounted for 91% and 62% of the variance respectively, other aspects of the data contraindicate effective postdiction. Analysis of Table 8 suggests that although R^2 values for suicide ideation and suicide attempts are adequate for postdiction, the independent (postdiction) variables included in the regression

are reworded versions of the dependent variable, thereby assuring highly significant, but somewhat uninteresting, relationships. For example, the independent variable "self-judged likelihood of suicide within the next month" accounts for 32% of the variance in the prediction of past suicide attempts; but to assert that subjective responses about the likelihood of suicide in the future, pre or postdicts suicidal behavior is tantamount to demonstrating a correlation between height in inches and height in feet, definitely significant, but not particularly useful.

TABLE 8

Multiple Regression Results

Suicidal Ideation

R ²	Independent Variables included in Regression
.65	Self-judged likelihood of suicide within the next year
.75	Suicide Probability Scale
.77	Reason for Living--Moral Objections
.79	Carlson Psychological Survey--Chemical Abuse
.80	Self-Judged Likelihood of death if suicide were attempted
.81	Self Judged Likelihood of suicide within the next month
.82	Number of foster or group home placements
.91	Number of charges

Past Suicide Attempts

R ²	Independent Variables included in Regression
.32	Self-judged Likelihood of suicide within the next month
.46	Number of school suspensions
.60	Carlson Psychological Survey--Self depreciation
.62	Total time spent in Y.D.C.

Note: Forward stepwise regression introduces independent (predictor) variables one at a time, until they are no longer significant, resulting in a list of "best predictors, organized in order of importance (F to enter = .05).

TABLE 9

Multiple Regression Results

Self Mutilation Ideation

R ²	Independent Variables included in Regression
.21	Self-judged likelihood of suicide in Lifetime
.26	Carlson Psychological Survey--Chemical Abuse

Past Self-Mutilation

R ²	Independent Variables included in Regression
.08	Carlson Psychological Survey--Antisocial Tendencies

PART D
DISCUSSION

The results of the current study have important implications for incarcerated youth. For example, the proposed factor names suggest categories of self-destructive behavior among sentenced and remanded teenagers. First, there is psychopathological self-destructive behavior, in which suicide/self-mutilation attempts and ideation are associated with serious psychological disturbance such as disturbances in thinking and depression. Second, there is a category of suicidal behavior associated with a chaotic life history, including antisocial tendencies, hopelessness, drug abuse, numerous school suspensions, criminal activity, numerous foster and group home placements, and general instability. Third, there is evidence that within a population of incarcerated youth, there will be individuals who do not appear suicidal in the traditional ways (e.g. depressed and hopeless), but will nonetheless behave and/or ideate in a suicidal fashion in order to "belong" or "fit in" with a suicidal peer group.

The first two categories, psychopathology related self destructive behavior and chaotic life history self destructive behavior, derive considerable, if not definitive support from the current data. Relevant factor loadings are high; and virtually all variables are consistent with the factor labels.

In contrast to the 1st and 2nd categories, evidence supporting the third category, approval-motivated suicidal behavior, is relatively tenuous. Were it not for the involvement of the Crowne-Marlowe Social Desirability Scale, this third

factor would involve suicide related variables exclusively. Although the Crowne-Marlowe loading does suggest the tendency to seek social approval, it is relatively small, and therefore potentially spurious. Consequently, although the current data suggest the possibility of suicidal behavior in order to achieve social approval, the results are inconclusive. Similarly, although approval-motivated suicide is consistent with the observation by institution staff that suicide attempts often trigger a rash of suicidal behavior, such evidence is anecdotal and somewhat unreliable. Clearly, additional research is necessary.

The possibility that self-destructive behavior among incarcerated youth can be categorized as psychopathology-related, as an extension of a chaotic life history, or as motivated by social approval, has obvious and significant implications for intervention/prevention. Currently, the literature describes numerous and disparate theories of suicide intervention; and research reflects considerable controversy as to which is the most efficacious approach to suicide prevention. For example, Kendall (1983) recommends the treatment of alcoholism in the prevention of suicide, based on the hypothesis that alcohol dependence decreases self-esteem, which in turn produces depression and ultimately suicide. Other approaches to suicide intervention/prevention include treatment of underlying depression (Farberow, 1983), treatment of schizophrenia (Tsuang, 1983), sociological measures which

strengthen the family unit (Miller, 1981), and crisis intervention following family loss (Conroy and Smith, 1983). Rather than identifying the single most effective method of suicide prevention, the factor analytic component of the current research recommends a multi-faceted and comprehensive approach, in which widely divergent intervention strategies are employed for different categories of self-destructive behavior. Accordingly, in the psychopathology group, intervention would focus on the treatment of a mood disorder or psychotic symptomatology via appropriate means (i.e., chemotherapy, hospitalization, psychotherapy). In the case where suicide is part of a chaotic and hopeless life history, intervention would entail crisis management, stable residential placement, job training/placement, alternative approaches to education, drug/alcohol counselling, and justice system diversion programs. Finally, for those for whom suicide is an attempt to be seen favorably by a suicidal peer group, intervention would include separation from the suicidal reference group, and social/life skills training aimed at instilling a healthy sense of individuality and purpose.

The current factor analytic results are relevant not only to incarcerated youth, but to the adolescent population generally. The suggestion that there are distinct categories of self destructive behavior, associated with psychopathology and chaotic life history respectively, although a relatively new concept, is consistent with preliminary research within the

larger adolescent population. For example, Garfinkel and Golombeck (1979) found that suicide attempters had difficult backgrounds, including scholastic difficulties and family discord. Conversely, youths who completed suicide had stable backgrounds, but showed signs of sudden-onset psychotic disturbances. Similarities between current research and the Garfinkel and Golombeck study are clear in that both suggest differentiation between suicidal behavior associated with psychopathology and suicidal behavior involving a chaotic and hopeless life history.

Despite obvious similarities between the current results and the Garfinkel and Golombeck study, there are important differences which suggest future research. For example, the Garfinkel and Golombeck study included both attempted and completed suicide. Consequently, the authors were able to conclude not only that suicidal behavior is of two varieties, but that psychopathology self destruction is most likely to result in death, while chaotic history self destruction involves repeated nonfatal attempts. The current research, on the other hand, does not include completed suicide, and therefore cannot address the issue of completed versus attempted suicide. Furthermore, based on the Garfinkel and Golombeck data, it would be expected that the current category of psychopathology self-destructive behavior would exclude low lethality self-mutilation and suicidal ideation. However, this was not the case. Rather, serious suicide attempts, self-mutilation, and

suicidal ideation were distributed equally among the factors (categories).

This controversy regarding differences between those who attempt and those who complete suicide is very important. In order to ensure that genuinely suicidal individuals are not disregarded as mere attention seekers, many theorists contest that it is impolitic to categorize suicide as more or less dangerous. They cite as evidence the fact that most completed suicides have previously attempted suicide, concluding that all suicidal behavior is dangerous, and that those who attempt and those who complete suicide are not distinct and separate groups (Calhoun, 1977). However the issue regarding similarity/dissimilarity between attempters and those who complete suicide, is not easily resolved. The fact that most completed suicides have made previous attempts, does not automatically imply that most attempters ultimately complete suicide. Consequently there has arisen general public opinion that many suicide attempts are manipulative, and intended as a nonlethal communication that attention and assistance are required. Similarly, in addition to the Garfinkel and Golombeck study, there has evolved a large body of literature pertaining to non-suicidal and low lethality self harm and self mutilation (Doctors, 1981; Pattison and Kahan, 1983; and Rosenthal, et al., 1972). Future research is required in order to determine the degree of similarity between suicide attempters and completed suicides. Like the Garfinkel and Golombek study, research should

include completed suicide, and like the current research, it should be factor analytic in nature. Furthermore, future research should be prospective (longitudinal) in nature. Both the Garfinkel and Golombek study and the current research are retrospective or "follow back" in nature, and consequently are subject to methodological limitations.

A major contribution of the current research pertains to the relative importance of depression and hopelessness in suicidal behavior. Because of consistently large correlations between depression and suicide, depression came to be seen as the most important of the variables which correlated with suicide (Beck, 1963). However, when it was found that the depression-suicide relationship decreases once variance due to hopelessness is controlled, hopelessness replaced depression as the variable thought to be most correlated with suicide (Nevid, 1983). Consequently, cognitions involving negative expectations for the future (hopelessness) have come to be seen as the component of depression which relates to suicide, thereby downplaying the importance of depression (Kazdin et al., 1983). However, the results of the factor analysis in the current research refute the argument that any variable, including hopelessness, has special status or is somehow most closely related to suicide. The first and most prominent factor, labelled "psychopathological self-destructive behavior", shows a very high loading for depression, but a very low loading for hopelessness. Conversely, the second factor, known as "chaotic

life history suicidal behavior", shows very high involvement for hopelessness, and none whatsoever for depression. These factors and factor loadings suggest types or varieties of suicidal behavior, one involving psychopathology including depression, but not hopelessness, and another involving a hopeless and chaotic life history, but not psychopathology, a viewpoint which is entirely inconsistent with the argument that the hopelessness variable is preeminent. Rather, it appears that in certain cases depression is a central component, while in others hopelessness is most salient.

There is an interesting interface between the current findings regarding the role of hopelessness and depression, and the Garfinkel and Golombeck study regarding completed versus attempted suicide. If, as the current data suggest there are distinct categories of suicide, one associated with psychopathology/depression, and another involving hopelessness and chaotic life histories; and if, as Garfinkel and Golombeck contest, completed suicides have stable backgrounds, but suffer psychosis, while attempters have unstable backgrounds, it would seem reasonable to view depression and other psychopathology as indicative of increased risk of fatality. Accordingly, in the assessment of potentially suicidal individuals, a depression inventory such as the Beck should be utilized, and a diagnosis of severe depression, especially in conjunction with other indicators of suicide, should be seen as indicating immediate intervention.

The recent emphasis upon the relationship between hopelessness and suicide has come under criticism in that self-reported hopelessness may be confounded with social desirability. For example, Linehan and Nielsen (1983) found the relationship between suicide and hopelessness to be lost when scores on a measure of social desirability are controlled. However, according to Nevid (1983), the covariation of social desirability and hopelessness does not necessarily indict the construct validity of hopelessness measurement. Nevid points out that there are two general explanations for the relationship between hopelessness and social desirability, one which indicates a confound, and another which does not. If the answer to the hopelessness-social desirability correlation lies in the fact that individuals withhold information about hopelessness in order to present in a socially desirable way, then indeed there is a confound. If, on the other hand, the correlation exists because hopeless individuals are less concerned with social presentation, we may conclude that the variables overlap in a consistent and theoretically predictable fashion, which is not indicative of a confound (Cronbach and Meehl, 1955; Nevid, 1983). The current factor analytic results allow empirical investigation of this hopelessness construct validity issue. For example, if it can be demonstrated that the Beck Hopelessness Scale and the Crowne-Marlowe Social Desirability Scale load on different factors, then it can be concluded that they are factorially distinct, and that confound is not a problem. However, results indicate that the Beck and the Crowne-Marlowe

both load prominently on Factor 2, suggesting that social desirability does represent a potential confound in the measurement of hopelessness.

Finally, the multiple regression component of the current study is consistent with the literature in that accurate postdiction of suicidal behavior was not possible. According to Murphy (1983) "the prediction of suicide at a definite or indefinite future time is not likely to meet reasonable standards of accuracy." Murphy's statement stands uncontested by the entire body of prediction research. For example, Watson et al. (1984), using many predictors, including the MMPI, were unable to accurately predict suicide. Similarly, Pallis et al. (1984) estimated suicide risks for a sample of attempted suicides, and concluded that there are great difficulties and complications involved in the prediction of suicide. Pokorny (1983) adroitly carried out a longitudinal prospective research design using over 5000 subjects, but was unable to predict suicide accurately.

The inability to accurately predict suicide does not automatically indict the body of knowledge which has amassed in the area of self-destruction. Consider an example from a relatively precise science --medicine. Much is understood about the relationship between coronary disease and factors such as diet, lifestyle, and heredity, including etiology. Furthermore, medicine can accurately identify high risk groups, and can measurably reduce risk through various interventions; and yet no

physician or medical researcher would presume to predict heart attacks for individuals. Similarly, despite accurate knowledge regarding populations who are at risk for suicide in a general sense, social scientists cannot predict suicidal behavior for specific individuals. However, difficulties inherent in predicting suicide in no way vitiate against the current theories of suicide. Rather, the intractable nature of suicide-prediction stems directly from a statistical or bayesian problem, in that low base rate or rare phenomena are unpredictable. It is entirely possible that a solution to the prediction dilemma simply does not exist.

Although the current results do not allow accurate prediction of individual suicidal behavior, other aspects of the research are nonetheless substantive. For example, the finding that suicidal behavior among incarcerated youth may be of three varieties (psychopathological, chaotic life history, and approval motivated), has both applied and basic significance. Similarly, the finding that under certain circumstances hopelessness is most basic to suicide, while in other cases depression represents the most important variable, impacts significantly in the context of the current literature. However, there remain unanswered questions regarding suicidal behavior among adolescents. For example, research is required in order to evaluate the efficacy of various intervention strategies. Furthermore, the degree of similarity between those who attempt and those who complete suicide is a critical issue which

warrants future research. It is recommended that future research be longitudinal in nature, and that it include parasuicide, attempted suicide, and completed suicide.

PART E
APPENDIX "A"

Suicidal Behavior and Demographics Questionnaire:

- 1) Age:
- 2) Sex:
- 3) Are you sentenced or remanded:
- 4) If you are sentenced, how long is your sentence:
- 5) Most recently completed school grade:
- 6) Present offence (charge);
- 7) Number and type of past convictions:
- 8) Length of previous stays at Y.D.C.:
- 9) If, for whatever reason, you lost one of your parents, how old were you, and which parent did you lose:
- 10) How many foster and group home placements have you had:
- 11) What is your ethnic group or race (check one):
 - Native Indian
 - Black
 - White
 - Oriental
 - Other
- 12) Number of school grades failed:
- 13) Number of school suspensions or expulsions:
- 14) How often do you "think" seriously about killing yourself?
Please assign a number between one and ten. One means never, five means sometimes, ten means every day.
- 15) How often have you tried to kill yourself (where you actually planned to die):

What methods did you use:

Why did you do it:

- 16) Sometimes people try to hurt themselves without actually wanting to die (burning, slashing, etc.).
How often do you "think" about doing this to your self.

Please assign a number between one and ten (as above):

- 17) How often have you tried to hurt yourself without actually wanting to die (burning, slashing, etc):

What methods did you use:

Why did you do it:

- 18) How likely is it that you will attempt suicide today.
Please assign a number from one to five.
One means no chance and five means very likely:
Please do the same for the following:

Likelihood of suicide attempt within several days _____

Likelihood of suicide attempt within the next month _____

Likelihood of suicide attempt within the next year _____

Likelihood of suicide attempt within your lifetime _____

- 19) If you did attempt suicide how likely is it that you would actually die? Please assign a number from one to five:

PART F
APPENDIX "B"

Face Sheet: Explanation and Instructions

The research to be undertaken at Willingdon Youth Detention Centre will investigate the relationship between residents' personalities and various behaviors.

All results will be totally confidential. No attempt will be made to attach names to specific scores. Analysis of data will be statistical and shall apply to generalized groups as opposed to individual cases.

Volunteers will be asked to provide demographic information about themselves; please be as precise as possible. You will also be asked to complete paper and pencil tests of the "yes-no" and "multiple choice" variety. Please use a pencil to clearly mark the best or most acceptable alternative.

If you wish to volunteer please read and sign the following consent form. Thank you.

PART G
APPENDIX "C"

Subject Consent Form

I voluntarily give my informed consent to participate in a research study on the personalities and behavior of residents of the Willingdon Youth Detention Centre. I understand, to my satisfaction, the nature of both the project and my participation. I realized that I can discontinue participation in this study at any time, if I so chose. My anonymity has been guaranteed. It has been explained to me and I am aware that my name or identity will not, in any way, be associated with any questionnaire, psychological survey, or the results from this study. The information I give is confidential and will not be seen by the security or clinical staff of Y.D.C., or by any person associated with temporary absences, classification or other correctional agencies or institutions. If I want a brief summary of the findings of this study, I will leave a mailing address with the research associate and expect that such information will be sent to me.

Participant's signature:

Witness' (research associate's) signature:

Date:

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