

REPETITION OF PARASUICIDE -
PERSONALITY DISORDER, PERSONALITY AND ADVERSITY.

By

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To Kaye, with love.

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DECLARATION

I, Bryan Larry Dirks, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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ABSTRACT

SIGNIFICANCE OF THE STUDY

No local studies have been done to describe the sociodemographic and clinical characteristics of those patients who repeat parasuicide. No follow-up information is readily available for these patients who are seen in the psychiatric emergency unit at Groote Schuur Hospital. Previous work has shown that predictive scales are sensitive but not very specific for those patients who are at risk of further suicidal behavior (Bürk et al, 1985). Risk factors described for repetition of parasuicide by other investigators (eg. Kreitman & Foster, 1991) are not readily applicable in different environments to those in which they were developed.

The last few years have witnessed major revisions of the two main classification systems used by psychiatrists and other mental health workers. Few studies have examined the relationship of personality disorder to repetition of parasuicide in the light of these new developments in the classification systems. Studies that have been done have relied on chart reviews and clinical diagnoses of personality disorder. Clinically based diagnoses of personality disorder have been shown to be unreliable (Walton & Presley, 1973). There are hardly any studies

available which have used newly developed structured interviews to assess for the presence of personality disorder.

Informant and patient completed interviews for the assessment of personality disorder are now available. This study makes use of a standardized and informant based assessment of personality disorder. The validity of this approach, for making personality disorder diagnoses, needs further evaluation. Few studies have examined the validity of this informant based approach for the diagnosis of personality disorder.

In addition to these developments in the classification and assessment of personality disorders, major strides have been taken in personality theory and the assessment of personality. Few studies have examined the relationship of these newly described personality dimensions to repetition of suicidal behavior.

AIMS OF THE STUDY

This study aims to describe the relationship of personality disorders to the repetition of parasuicide whilst taking cognizance of recent developments in the classification of and assessment for personality disorders. This study also aims to determine whether risk factors described by other

authors for further suicidal behavior are characteristic of these patients locally. This study also aims to describe the contribution of newly described personality dimensions to repetition of parasuicide. This study also describes suicidal behavior in the follow-up period of a cohort of parasuicide patients who were seen in the emergency psychiatric service during follow-up.

This study also examines the comorbidity between the personality disorders categories defined by the clinical criteria of the Tenth International Classification of Mental and Behavioral Disorders or ICD-10, (World Health Organization, 1992). This study compares the co-occurrence of these new personality disorder categories with the comorbidity which has been observed in older classification systems (American Psychiatric Association; 1980, 1987) in order to determine whether this new classification system has led to less comorbidity among the personality disorders. This study also examines aspects of the relationship between informant based diagnoses of personality disorder and personality dimensions described by Cloninger et al (1994).

METHODS

This study used a prospective cohort design. Eligible patients were sampled from consecutive admissions to the

emergency unit at Groote Schuur Hospital after parasuicide. Two intern clinical psychologists were trained to administer the Standardized Assessment of Personality (Pilgrim and Mann, 1990) to informants of patients who gave written informed consent to participation in this study.

These patients completed a battery of tests when they entered the study and these tests included assessment of sociodemographic details, previous suicide attempts, substance abuse, psychological distress, life events and social support. All patient were followed up for at least six months. At the follow up interview suicidal behavior and treatment during the interim period was enquired about and patients completed the Temperament and Character Inventory of Cloninger et al (1994). Life events and psychological distress was also enquired about at the follow-up interview.

RESULTS

This study found that the sample of 120 patients studied was typical of other parasuicide populations described in the literature. A logistic regression model found limited support for risk factors which have been described in other investigations for repetitive suicidal behavior and these included unemployment (Odds ratio or OR = 3.62; 95% Confidence Interval or CI: 1.31 to 9.98), increasing

intensity of suicidal ideation (OR = 2.23; 95% CI: 1.3 to 3.96 - for every ordinal increase in suicidal ideation) and borderline personality disorder (OR = 4.37; 95% CI: 1.32 to 14.45). In this model anankastic personality disorder was associated with a reduction in the odds for repetition of parasuicide (OR = .10; 95% CI: .01 to .69) when controlling for other risk factors.

Not all risk factors described for repetition in other studies discriminated those patients at risk for repetition in this study - specifically this study could not confirm that violence from other family members, unskilled workers, and alcohol abuse were associated with repeater status (those patients with a history of previous suicide attempts at entry into the study).

Multiple linear regression showed that antisocial personality disorder, borderline personality disorder, poor self-esteem and previous psychiatric treatment were significantly associated with an increase in the number of previous suicide attempts reported at baseline or entry into the study. Completion of occupational training was a significant but negative covariate in this model as well (R-Square = .4579, F = 15.91, P = .0000).

56.67 % of the patients studied had one or more personality disorders. Of these only 14.17% had one personality

disorder present: the rest had two or more personality disorders diagnosed through informant interviews. Borderline personality disorder had significant co-occurrence with all personality disorders except for schizoid and anankastic personality disorder. Schizoid and anankastic personality disorder had the least comorbidity with other personality disorders.

Of 80 patients followed-up, 2 committed suicide and 8 others made repeat attempts. Those who made repeat attempts had significantly increased mean Harm Avoidance (26.44 versus 20.07, $P = .0073$) and decreased mean Self-directedness scores (18.88 versus 25.04, $P = .0417$) when compared to those patients who made did not make repeat attempts in the follow-up. A logistic regression model showed that for every unit increase in Self-directedness scores at follow-up there was a significant reduction in the likelihood of personality disorder having been diagnosed at baseline (OR = .89; 95% CI: .81 to .99) when controlling for harm avoidance and psychological distress at follow-up.

CONCLUSIONS

Risk factors for repetition of parasuicide described in one setting do not necessarily replicate to another setting. Specific personality disorders - Borderline and antisocial

personality disorder are associated with an increased number of previous suicide attempts reported at entry into the study. Anankastic personality disorder is associated with decreased odds for repetition. Specific personality disorders may increase vulnerability to or protect against repetitive suicidal behavior. The recently described ICD-10 personality disorder criteria have not resulted in decreased co-occurrence of personality disorders found at assessment. The predictive validity of informant based diagnoses of personality disorders at baseline is confirmed in terms of personality dimensional scores at follow-up.

Unemployment is a more important discriminator for repetition of suicidal behavior than other discriminators such as threatening life events, alcoholism and social support. In addition to the risks for repetition of parasuicide as a result of a reactive and anxious temperament and specific personality disorders, social policy planners should take note of the deleterious effects of unemployment on mental health and the morbidity of suicidal behavior.

PART 1

Introduction and Literature Review.

Chapter 1.The Psychiatric Emergency Unit and the Need for this Study.

The psychiatric emergency unit at Groote Schuur Hospital manages approximately 100 patients who present themselves for assessment after parasuicide each month. All of these patients pass through a medical triage system to exclude physical complications and those patients who require medical treatment and hospitalization may not be assessed in ward C23. Patients who are referred for evaluation at the emergency unit are seen by either a psychiatric registrar or a psychiatric social worker. Most of these patients are discharged home following psychiatric assessment in the emergency unit. Only a minority of these patients who are considered to have a serious risk of suicide are kept for further observation or are transferred to a psychiatric hospital for further care. The hospital serves the needs of the Cape Peninsula.

There are two other psychiatric emergency facilities in the neighboring suburbs: A unit at Tygerberg Hospital serves the needs of the Northern Suburbs and a psychiatric unit at Victoria Hospital serves the needs of Wynberg and surrounding suburbs. In addition to these state funded psychiatric services there are also private psychiatric hospitals in the Cape Peninsula to whom patients are admitted by private psychiatric specialists. Patients who

are employed and have a medical benefit fund are usually under the care of private psychiatrists at these units although a large proportion of these are seen initially in ward C23. The patients who present themselves for assessment following parasuicide at the emergency unit at Groote Schuur are probably not representative of all patients with parasuicide in the Cape Peninsula in respect of the drainage areas from where these cases arise. These differences can be accounted for in terms of socioeconomic class and access to private care. Also, the majority of the group which are evaluated in C23 have not made potentially lethal attempts which requires further medical care.

A large proportion of these patients go on to repeat this behavior. Repetition of parasuicide is associated with the risk of eventual suicide as well as increasing physical and psychological morbidity with further attempts. No local studies have been done to determine the characteristics of those patients who present at this psychiatric emergency unit and who are at risk for further suicidal behavior. These patients who repeat parasuicide consume a large amount of professional time therefore secondary and primary interventions need to be improved in order to prevent suicidal behavior and to ensure a good outcome in this group of patients. Interventions are also required to decrease the demands of these patients on limited professional time. There is also no information available

regarding the outcome of those patients who are assessed in the emergency unit at Groote Schuur Hospital.

A prospective follow-up study was done on a cohort of patients who were assessed in this unit following parasuicide in order to describe some of the characteristics of those patients at risk for repetition and also to provide information regarding short term outcome. A review of the literature indicates that there remain some deficits in our knowledge base of the contribution of personality dimensions to repetition of suicide attempts and a major focus of the present study has been to describe the contributions of personality to repetition of parasuicide. In order to determine the extent of the association of personality variables with repetition of parasuicide this study controls for and investigates the discriminative power of other adverse psychological and social circumstances which have been described by other authors as risk factors for further suicidal behavior. It is not the aim of this study to develop a scale for the repetition of parasuicide as has been done in previous research.

Chapter 2.Classification and Suicidal Behavior.

CLASSIFICATION IN PSYCHIATRIC RESEARCH

Classification is an important exercise in clinical psychiatry and also in psychiatric epidemiology. In psychiatric epidemiology misclassification occurs when subjects are erroneously categorized with respect to either exposure (risk factors) or disease (disorder) status. Two types of misclassification are described in the epidemiological literature. These include random or nondifferential misclassification and differential or systematic misclassification. It is this last form of misclassification which is more serious and which leads to bias or systematic error in the assessment of the association between exposure and risk of disease (or outcome). It leads to either an overestimate or underestimate of the association between exposure and a particular outcome.

Random misclassification occurs when the proportions of subjects who are misclassified do not differ between study groups. In a natural experiment, such as the present study describes, it is more likely that random misclassification - where similar proportions of misclassification would occur in comparison groups - is responsible for the

dilution of the estimates of association between risk factors and repetition of parasuicide. This would then imply that whatever positive results are reported are generally not accounted for by bias but also that negative results in this study are not necessarily conclusive.

Misclassification is likely to occur in studies of suicidal behavior as there is no consensus about the definitions of the classes of suicidal behavior which are studied and studies may not be comparable with each other because of different definitions of suicidal behavior.

DEFINITIONS OF SUICIDAL BEHAVIOR

Following Diekstra and Gulbinat (1993) suicidal behavior can be described in terms of three categories - suicidal ideation, parasuicide and suicide. Similarly Mann and Arango (1992) described suicidal behavior ranging from suicidal ideation to completed suicide. Goldney et al (1989) and Paykel et al (1974) described levels of suicidal ideation which ranged from thoughts that life was not worth living to clear plans for killing oneself. Diekstra and Gulbinat (1993) described suicide as any death which was the direct or indirect result of an act by the victim which the victim knew would produce this result.

Diekstra and Gulbinat (1993) noted that there was

considerable overlap among these three classes of suicidal behavior but that little was known about those factors which protected the individual or those which lead to a recruitment from suicidal ideation to parasuicide and finally suicide.

Many different terms have been used to describe self-destructive acts. Stengel and Cook (1958) noted that people who committed suicide and those who made suicide attempts came from different populations. There are some common characteristics which these two populations share but there are also important differences. Most suicide completers are men and most suicide attempters are women and not all suicide attempters intend to die, (Mościcki, 1995). Stengel (1974) defined attempted suicide as every act of self-injury consciously aimed at self-destruction which the patient could not be sure to survive. This term is ambiguous about suicide intention and it would seem to imply that all patients who engage in self-destructive behavior have a degree of suicidal intent.

Mościcki (1995) notes that a major difficulty in collecting standardized data on suicide morbidity is the measurement of suicide intent. Moscicki (1995) in her review described how medical lethality has been used in order to distinguish failed suicide attempts from cries for help. There are problems with this view. Beck et al (1975a) have only shown

a modest relationship between suicide intent and lethality. Beck et al (1975a) have only demonstrated a correlation between lethality (the medical consequences of a suicidal act) and suicidal intent (or the wish to die) when the individual had a knowledge of the possible outcomes of a suicide attempt.

Adam (1985) and other investigators in North America (Beck et al, 1972; Pokorney, 1974; Beck et al, 1975a) endorsed the following classification which had been recommended by the Center for the Prevention of Suicide Studies of suicidal behavior namely: suicide ideators, or people who thought about suicide; those patients who made unsuccessful suicidal attempts and those patients who died of suicide. This is similar to the classification provided by Diekstra and Gulbinat (1993). Each category according to Beck et al (1975a) required rating on a number of axes including severity of the intent to die, the medical lethality of the contemplated or actual attempt and the quantification of suicide ideation.

Kreitman (1977) suggested that parasuicide was a better term for the population of patients who displayed self-destructive behavior with varying levels of intent as the older term, suicide attempt, seemed to always imply the presence of suicide intent. Kreitman pointed out that intent could not be used as a criterion in describing this

behavior as patients who presented with parasuicide were uncertain and gave conflicting accounts of their motives. Parasuicide is defined by him as a "non-fatal act in which an individual deliberately causes self-injury or ingests a substance in excess of any prescribed or generally recognized therapeutic dosage". A problem with this concept is that an overdose from alcohol is excluded from this definition if the patient has had an alcohol addiction.

A further problem arising from this descriptive term is that parasuicide patients are as heterogenous a group as "suicide attempters" in the levels of suicide intent which they experience. Thus according to Ennis et al (1989), the two terms are synonymous. This heterogeneity of the degree of suicide intent may lead to misclassification and also confound the assessment of the magnitude of risk factors for further parasuicidal behavior.

Other terms such as "non-fatal deliberate self-harm" have been proposed by Morgan (1979); "deliberate self-injury" and "deliberate self-poisoning" were proposed by Kessel (1965). These descriptive terms were proposed as they did not include any notion of suicide intent. Many patients with self-harm do however experience some degree of suicide intent. These descriptive terms have been less often used than the two alternative terms "suicide attempt" and "parasuicide". There is no consensus about which term to

use (Adam, 1985). The term "suicide attempt" occurs more frequently in the American literature on suicidal behavior - (Weissman, 1974; Meehan et al, 1992). The term "parasuicide" is seen more often in the British literature on suicidal behavior - Kreitman, (1977). Both of these terms, "suicide attempt" and "parasuicide" are used in this study to describe non-fatal self-destructive behavior with varying levels of suicide intent as these two terms did not seem to have major differences in the dimensions of behavior which they have attempted to describe. Other authors such as Cantor (1994) have also used these terms synonymously. Suicide intent has been measured in this study and is statistically controlled for in the analysis of the data in order to account for the possible effects of the misclassification of individuals with varying levels of suicide intent.

TYPES OF SUICIDE ATTEMPTERS OR PATIENTS WITH PARASUICIDE

Numerous typologies of suicide attempters have been proposed. The clinical utility of some of these typologies has not been well described. Paykel and Rassaby (1978) noted the heterogeneity of suicide attempters in terms of levels of suicide intent, lethality and previous history of suicidal behavior. These investigators found evidence of three groups of attempters using cluster analysis. Their first group consisted of patients who made attempts with

little risk to life and showed evidence of interpersonal motivation rather than self-destructive motivation and less psychiatric disturbance. The second group made more severe attempts and were more self-destructive. The third group had a history of many previous attempts and were often hostile. Kurz et al (1987) also identified a repeater group and serious and non-serious attempts.

Lester (1991) described a classification of attempted suicide in terms of whether the resulting self-harm was foreseen or desired. He described failed suicides, deliberate self-harm, subintentional self-harm and pseudoself-harm. Deliberate self-harm referred to patients who wished to risk death or punish themselves but not sufficiently to die. Subintentional self-harm referred to efforts to change the behavior of a significant other and counterproductive self-harm referred to those patients in which the harmful consequences were not foreseen. Pseudoself-harm described those patients who made mild gestures where self-harm was minimal or absent. Failed suicides referred to patients who intended to die but who had failed.

Hawton et al (1982) described three types of adolescents who took overdoses: a group with no behavioral disturbance and acute problems, a group who had problems for more than a month and no behavioral problems as well as a group with

behavioral problems and who had problems for more than a month. These groups differed markedly in their medical and psychiatric histories as well as their relationships with their families. Treatments offered to the three groups were also different.

Other typologies with some implications for prognosis and treatment have also been proposed for adolescents who attempted suicide. Kienhorst et al (1993) used the statistical technique of multiple correspondence analysis of sociodemographic and psychological variables and showed that adolescent suicide attempters could be classified into two groups: a first group was characterized by recent problematic behavior and a second group was characterized by recent problematic circumstances. The first group was characterized by recent suicidal ideation, recidivism as well as the use of drugs. These investigators identified this group in need of mental health care because their prognosis was poorer.

Ellis (1988) reviewed the various classification systems described for suicidal behavior and noted the lack of agreement among them. Differences in classification systems occurred because of the wide variation in the samples which were studied, the variables which were analyzed and the classification methods which were used. Ellis (1988) in his review suggested that all of these different classification

systems represented incomplete attempts to describe four dimensions of suicidal behavior.

He listed four dimensions which included: (1) - a descriptive dimension which specified the nature of suicidal behavior i.e. whether the patient thought of suicide, made an attempt or committed suicide; (2) - a situational dimension provided information about the circumstances surrounding the suicidal behavior and including loss, interpersonal conflict and modelling of suicidal behavior; (3) - a mediational or psychological/behavioral dimension which described the link between the situational precipitants and the suicidal outcome with some examples such as mood disorders, substance abuse and psychoses; (4) - the teleological dimension or the purpose and intent of suicidal behavior which included problem solving, punishment of self or others and a cry for help. Ellis (1988) suggested that patients needed to be assessed on all these dimensions.

The dimensions which Ellis (1988) describes are important in clinical work as far as the management of suicidal patients is concerned and they also provide a framework for the investigation of suicidal behavior. The framework which Ellis (1988) provides is an ideal. It is all-encompassing and only certain aspects of the dimensions which he described are specifically addressed in this study. This

study concerns itself only with a further description of the repeater group of parasuicide patients which have been identified by Paykel and Rassaby (1978) and also by Kurz et al (1987) and who have also been the focus of the work of other investigators (eg Kreitman and Foster 1991).

The study describes parasuicidal behavior in a cohort of patients seen in the psychiatric emergency unit at Groote Schuur. The study describes the relationship of adverse life events to further suicidal behavior and some of the contributions of mood, personality disorder, personality and social support to repetition of parasuicide. This study, in terms of the framework described by Ellis, does not concern itself with the teleological dimensions of suicidal behavior.

Chapter 3.Repetition of Suicidal Behavior.

INCIDENCE AND REPETITION RATES OF PARASUICIDE

Rises and falls in the incidence of parasuicide have been reported in Oxford, United Kingdom (Bancroft et al, 1975; Platt et al, 1988) and also by Kreitman (1989) who reported a marked increase in the rate of parasuicide during the 1970's and a fall during the 1980's. Weissman (1974) and Klerman (1987) reported that there were increasing rates of suicide attempts in North America. In Natal, South Africa, a similar increase in self-poisoning over time has been noted by Schlebusch (1987).

Many patients go on to repeat parasuicide and it has been estimated that approximately 20% of patients will repeat this behavior and 1-2% will commit suicide in the year following their first attempt, (Buglass and Horton, 1974a; Bancroft et al, 1975). Most of these patients will repeat their suicidal behavior in the first few months following their first attempt and the probability of this behavior decreases as a function of time, (Bancroft and Marsack, 1977). Roy and Linnoila (1990) noted that 30% of suicide victims in the general population have made a previous suicide attempt. They also reported that one percent of individuals who made suicide attempts repeated this within

one year and that approximately ten percent of these would commit suicide over ten years. No local figures are available about repetition rates nor suicide mortality in the patients who present with parasuicide at Groote Schuur Hospital.

A FRAMEWORK FOR THE DESCRIPTION OF RISK FACTORS

The risk factors for suicidal behavior are complex and it is doubtful if any one study could give a complete description of all the risk factors which have been suggested and/or which have been shown to lead to suicidal behavior. Mościcki (1995) provided a useful framework for the description of risk factors for suicide attempts and completed suicide. She describes proximal and distal risk factors. Distal risk factors refer to predisposing factors and are the foundation on which suicidal behavior is built. Proximal risk factors are those immediate precipitants which are temporally closely associated with the suicide event. She noted further that these proximal and distal factors could be grouped into psychiatric, biological, social, familial and situational. Most psychiatric, biological and familial groups of risk factors could be thought of as distal while the more situational risk factors are proximal and these trigger the suicidal event. These situational risk factors are likely to differ with age, gender and other sociodemographic factors.

The present study concerns itself mainly with a further exploration of some of the distal factors which have been described to be associated with the repetition of suicidal behavior. It attempts to describe in greater detail some of the risk factors which contribute to the repetition of parasuicide with a particular focus on those factors which arise from the personality of the patient namely, temperament and character factors, personality disorder and coping resources such as self-esteem. The environment which includes - life events with long term threat, social support and employment as well as sociodemographic risk factors such as age, gender and marital status are also examined.

This study - because of time, financial and logistic constraints - has not attempted to describe the association of familial risk factors such as the contribution of a shared familial environment or the biological predisposition to suicidal behavior nor the role of family violence and abuse in suicide attempts as has been done in previous studies (Moscicki, 1995). The study also does not focus on some situational risk factors such as exposure to the suicidal behavior of others. Mościcki (1995) felt that the best method for preventing suicide was one which was designed to address the major distal risk factors of the physical and psychosocial environment and that these programs should be comprehensive with a focus on mental

health in which multiple risk factors were targeted.

SURVEILLANCE SYSTEMS FOR SUICIDAL BEHAVIOR

Potter et al (1995) described surveillance in public health as the collection, analysis and interpretation of health-related information for planning, implementation and evaluation of programs. Potter et al (1995) noted in their review of suicide prevention and public health that morbidity surveillance was not as well developed nor as systematic as was mortality surveillance for suicidal behavior. Birkhead et al (1993) noted that emergency department based surveillance systems for attempted suicide could provide data to monitor trends in attempted suicide and to define high risk groups.

Mościcki (1995) noted further that the correlates of suicidal behavior derived from clinical samples may be biased. It has only happened recently that population or community based surveillance systems have been developed in countries such as the United States with a comparatively better developed public health care system in which there is a focus on suicide morbidity rather than a focus on suicide mortality (Potter et al, 1995). Birkhead (1993) noted that even general population based estimates of suicidal behavior are problematic: these include definitions of suicide attempt in studies; only a small

proportion of those subjects in the general population make suicide attempts which lead to medical care and one time point incidence of suicidal behavior cannot not provide the required information to describe incidence data on an ongoing basis. These investigators feel that emergency department based surveillance systems are the least expensive and the most useful strategy for monitoring trends and patterns of attempted suicide at the local level.

Systems to monitor suicidal behavior - within the wider community and to provide improved information beyond that which our poorly developed hospital based data systems are able to do - are not yet available in South Africa. In South Africa surveillance systems for suicide mortality data are also deficient and are not well developed. Flisher and Parry (1994) for example noted the poor quality of data available for suicide mortality in general and about black South Africans in particular.

METHODOLOGICAL PROBLEMS IN THE DETERMINATION OF RISK FACTORS FOR THE REPETITION OF PARASUICIDE

Useful information has nevertheless been generated in previous clinically based studies, mainly in countries other than South Africa, in order to describe patients at risk for further suicide attempts despite the selection

biases inherent in clinical populations. Much of this research has focussed on the generation of scales in order to identify patients at higher risk of repeat suicide attempts. Reviews of the literature show that while many of these scales show adequate sensitivity, they are not very specific and as a result, many false positives are generated.

Studies of repeat suicidal behavior are not always comparable. They may differ in their classification of patients who repeat their suicidal behavior. Peterson and Bongar (1990) grouped together in their repeater group those patients who presented later at the emergency unit only with suicidal ideation and those who made repeat suicide attempts during the follow-up period. Other investigators confined their studies to patients who presented with repeat parasuicide (Morton, 1993; Kreitman and Casey, 1988).

Many of these studies have used chart reviews in order to describe which patients repeated parasuicide; there are few studies which have collected their information prospectively or employed multivariate statistical techniques in the analysis of their data. Bagley and Greer (1971) used a multivariate analysis to describe predictors for repeat suicide attempts. They note that studies which incorporate a follow-up interview are not common. Many

studies (Kreitman and Foster, 1991; Morton, 1993) confine themselves to an examination of readmissions to hospital and this may lead to a biased assessment of poorer outcome. Outcome for those patients who have done well is generally missing from chart review data.

Morton (1993) has commented on the complexity of variables determining repetition as many of these do not act independently. She found evidence, for example, of the possible confounding of the relationship of unemployment with further suicidal behavior by personality disorder. The relationship between parasuicide and unemployment was no longer significant when the population was stratified for the presence or absence of personality disorder. The independence of the association of unemployment as a risk factor, in the presence of personality disorder, for further suicidal behavior is still not clear. Platt (1986), by way of example, wrote that unemployment could be used as an indicator of personality deviance. Jones et al (1991) found that an independent third factor, possibly personality characteristics, increased the risk of both unemployment and self-poisoning and gave rise to a non-causal relationship between unemployment and parasuicide.

Kreitman and Foster (1991) have shown that the characteristics of patients with a prior history of parasuicide vary from year to year. Buglass and Horton

(1974b) found that fewer than half of the variables associated with parasuicide in any one cohort attained statistical significant levels in all three cohorts (who were admitted in different time periods). Siani et al (1979) reported similar findings. Siani et al (1979) studied an Italian population and also wrote that different follow-up methods may lead to discrepancies in the rates of parasuicide repetition. These investigators, who used personal follow-up interviews, found a higher rate of repetition than studies in Edinburgh by Buglass and Horton (1974a) and by Bancroft and Marsack (1977) in Oxford, in which repetition was ascertained through readmission data only. Siani et al (1979) noted the low specificity of their own and other's predictive scales. They also wrote that the discriminating factors for repetition of parasuicide varied across time.

Bürk et al (1985), in their review of suicide risk scales, commented that most risk scales suffered a significant loss of predictive accuracy when they were transferred to new patient samples. These authors felt that although accuracy of prediction was not satisfactory from a statistical point of view, risk scales were still helpful in clinical management. They assisted in the identification of that high risk group who were at risk of further suicidal behavior.

Bürk et al (1985) also emphasized that risk scales for suicide attempters should describe suicidal behavior more precisely through rating instruments for suicidal intent (Beck et al, 1974; Pierce, 1977). Despite these recommendations by Bürk et al (1985) the discriminant validity of recently developed suicide risk scales such as the Plutchick Suicide Risk Scale (Plutchick et al, 1989) for distinguishing different levels of suicide ideation and suicide attempts has been still been shown to be unsatisfactory by Koslowksy et al (1991). Van Egmond and Diekstra (1990) in their meta-analysis of studies, found that suicide prediction research had made little progress over a quarter of the century. Cantor (1994) also described how risk factors described in an instrument may change dramatically over time - a patient who is married today for example may become separated tomorrow. Clinicians are more sensitive to these changes than a risk assessment instrument.

Changes in the characteristics of patients may affect the factors related to the repetition of parasuicide and reduce their consistency. Merrill and Owens (1990) in their review noted that these changes may include a greater incidence of depression among young adults - or that those young people who took overdoses in the 1960's were now twenty years older and older adults may have now adopted these suicidal gestures, (a cohort effect). Kreitman and Foster (1991)

noted that fluctuations in characteristics of different cohorts of patients could reflect sampling error but could also reflect non-random variation due to secular changes.

Secular changes or period effects can be described as those risk factors unique to a specific period in history to which a cohort of subjects in any study are exposed. Kreitman and Foster (1991) suggested that data, in order to overcome period effects and cohort effects - which refers to the effects of those unique characteristics of the cohort itself, see Merrill and Owens (1990) above - needed to be examined from widely separated time periods in order to identify those features which consistently proved useful in characterizing the repeater group.

Kreitman and Foster (1991) described a common set of characteristics derived from widely separated periods in order to identify those features which consistently proved useful in characterizing repeaters. It had been observed by Kreitman and Foster (1991) that risk factors described in a particular cohort of patients may not necessarily describe the risk of future parasuicide in other cohorts of parasuicide patients.

Kreitman and Casey (1988) showed that characteristics which distinguish a "first-ever" patient from a "minor repeater" are different from those identifying the "minor" from the

"major" repeater category (with five or more attempts). Kreitman (1989) also notes that the relative proportions of first-evers, repeaters and "grand repeaters" each of which have unique characteristics may also have changed over time. Despite these complex methodological problems similar items have been described by various workers for the prediction of further suicidal behavior according to Kreitman (1989).

These predictive scales (because of their nature) have focussed on the identification of risk factors for the repetition of suicidal behavior. There are few studies which have focussed on protective factors which decrease repetition rate. Protective factors are factors that modify the impact of risk factors by lowering the risk of disorder. These may include personality factors such as self-esteem, support systems and educational opportunities (Rutter, 1985). There is also no mention of the role of social support beyond marital status nor life events other than those due to violence, unemployment and criminality in these predictive scales for further suicidal behavior.

RISK FACTORS ASSOCIATED WITH REPETITION OF SUICIDAL BEHAVIOR

Kreitman and Casey (1988) described some of the risk factors for further attempts. Kreitman and Casey (1988)

emphasized that the risk factors for repetition of parasuicide were not necessarily the same as the ones which precipitated the first parasuicide. The high prevalence of female patients, for example, seen in the parasuicide population is not seen in that group of patients who make repeat suicide attempts. A retrospective analysis of different cohorts of patients admitted to the Regional Poisoning Treatment Center, Edinburgh, was done. Kreitman and Casey (1988) wrote that the psychosocial factors which lead to induction of parasuicidal behavior and those which maintained this behavior need to be more adequately described. They also cautioned, in the report of their study, that the presence of personality disorder - which they highlighted as a risk factor for repetition of parasuicide - needed further investigation as a risk factor for the repetition of parasuicide. Their study used the standardized clinical records of the Regional Poisoning Unit in Edinburgh. A diagnosis of personality disorder was made by clinical interview only. Kreitman and Foster (1991) again emphasized that tighter definitions of personality disorder was required.

Some of the common characteristics of these cohorts were used to later generate a scale (Kreitman and Foster, 1991) to predict repetition of parasuicide. This scale included risk factors which had been previously described by other investigators such as: previous parasuicide, personality

disorder, alcoholism, previous psychiatric treatment, unemployment, belonging to social class V (according to the United Kingdom Registrar General's coding of occupations), a history of having been a victim of violence from family members or having been violent to others, drug abuse, criminal record, aged between 25-40 years and single status, divorced or separated. Kreitman and Foster (1991) used bivariate statistical analyses and did not make allowance for intercorrelations between the items they described on their scale. There is a similarity of these characteristics which Kreitman and Foster (1991) described with the risk factors described for completed suicide in other studies.

Despite some similarities in the risk factors for repetition of parasuicide and completed suicide, there are conflicting reports about the role of social risk factors as predictors of completed suicide. Nordentoft et al (1993) found in a 10 year follow-up of suicide attempters that more than one previous suicide attempt and age were important predictors of subsequent suicide. Nielsen et al (1990) reported that the results of a five-year follow-up study of suicide attempters in Denmark showed that the predictors for future suicide were chronic somatic disease, depression, abuse of medication and chronic alcoholism. These investigators found, of the social variables which they examined, that criminality was the only significant

social risk factor for suicide. Single status, unemployment and interpersonal conflict and losses were not significant risk factors for completed suicide. Nordentoft and Rubin (1993) also found an association between borderline personality disorder, violent method used, unemployment, two or more previous attempts and suicide later on. In this study alcohol and drug abuse and lack of social support did not influence risk.

The role of personality disorder in studies of completed suicide requires further evaluation. Few studies have used recognized instruments for the assessment of personality disorder, which is notoriously unreliable in clinical situations. Hawton et al (1993) reported that in a cohort of young people who presented with parasuicide, previous psychiatric treatment, unemployment, substance abuse, previous attempted suicide and personality disorder were significantly associated with eventual suicide. A case-control study of young men by Lesage et al (1994) showed that completed suicide was associated with major depression, borderline personality disorder and substance abuse; comorbidity involving any of these disorders appeared to be common. These investigators used an adapted version of the Interview Schedule for Children described by Kovacs (1985) in order to identify types of personality disorder.

Chapter 4.Personality Disorder and Suicidal Behavior.METHODOLOGICAL PROBLEMS IN THE ASSESSMENT OF PERSONALITY
DISORDER IN STUDIES OF SUICIDAL BEHAVIOR

Some of the methodological difficulties which have limited the investigation of the association between parasuicide and personality disorder have been described by Casey (1989). Casey (1989) investigated the relationship of personality disorder and suicide intent. She observed that comparatively few studies had been done in this area and noted that information regarding personality was generally poor and unreliable. She further encountered another problem of circuitous reasoning - parasuicide was seen as evidence of personality disorder. Mental state was also often confused with personality traits.

Previous studies have not attempted to systematically describe the contribution of different personality disorder categories to repeat parasuicidal behavior. Most of the assessments for personality disorder completed in previous studies were done shortly after suicide attempts when the patients were still in crisis and psychiatrically ill or distressed. Hirschfeld et al (1983) have shown that even slight levels of depression have an effect on personality assessment. Many investigators have in addition not used

structured interviews to determine the presence of personality disorder.

The inter-rater reliability of personality disorder as assessed by clinical interview has been shown to be notoriously unsatisfactory (Presley & Walton, 1973; Walton & Presley, 1973; Melsop et al, 1982). Variance in reports of personality disorder among this group of patients are partly accounted for by observer and subject error. These errors arise from the patients more favorable description of their personality and their difficulties in describing the extent of dysfunctional interpersonal relationships together with distortions of their subjective descriptions and the observations made by the clinician as a result of their current mental state (Pilowsky, 1979; Hirschfeld et al, 1983; Reich et al, 1986).

Gorton and Akhtar (1990) in their review of the literature on personality disorders wrote that other reasons for the poor reliability of personality disorder diagnoses were fuzziness of the boundaries between normal personality and personality disorder and the confusion of mental state with personality traits. They further noted that the diagnostic efficiency of any particular feature of a personality disorder was a function of base rates and that diagnostically significant findings in one setting were not necessarily so in another. Other possible explanations for

poor reliability were patients' inability or reluctance to report symptoms which were ego-syntonic or embarrassing. Gorton and Akhtar (1990) suggested that in the absence of a gold standard for the validation of personality disorders there were a number of potential external validators. These included biological markers, the course of illness, treatment response and familial aggregation. They also emphasized that prototypical behaviors and the relationship of personality disorders to axis 11 disorders could also be used as validators. Zimmerman and Coryell (1990) noted that Spitzer's (1983) widely accepted -LEAD- or Longitudinal Expert Evaluation using All Data, standard which is used for the validation of other psychiatric disorders was inappropriate for the validation of personality disorder diagnoses derived from questionnaires or structured interviews. These questionnaires and interviews were developed because of the poor reliability for personality disorders among expert clinicians. Thus diagnoses of personality disorder by experts could not be used to validate diagnoses derived from questionnaires or structured interviews. In many ways the problems of reliability are artificially created in the attempt to define categories of personality disorder which are inherently not discontinuous and which have a lot of overlap with each other.

In addition to these methodological considerations,

investigators of the association of personality disorder with repetition of parasuicide have also used broad and different descriptions of the categories of personality disorder. This limits the comparability of many studies. Investigators have used descriptions such as psychopathy - Kessel and McCulloch (1966); sociopathy - Buglass and Horton (1974b); personality disorder - Kreitman and Foster (1991); in order to describe the association of personality abnormality with repeat parasuicidal behavior. Shepherd and Sartorius (1974) also noted that the then currently available descriptions of personality disorder (when a large number of these studies were done) in the World Health Organization's international classification of diseases was not comprehensive.

DEFINITIONS OF PERSONALITY DISORDER AND SUICIDAL BEHAVIOR

Various definitions of personality disorder have been offered. Schneider (1950) laid emphasis on the individual's discomfort and the suffering of society from an "abnormal personality" in his definition of personality disorder. A similar definition was given by Tyrer and Ferguson (1988) who described persistent abnormalities of personal and social functioning which was independent of mental integration. Rutter (1987) described a pervasive abnormality in social relationships and functioning and suggested that different categories should be collapsed

into one category which was defined in terms of relationship difficulties. Davis (1987) emphasized the cognitive components of personality disorder and related the distress in social and occupational functioning experienced by patients with personality disorder to their enduring ways of perceiving, relating to and thinking about the environment. Both the classification systems of the WHO - World Health Organization (1989) and the APA - American Psychiatric Association (1987) describe maladaptive traits with an onset in adolescence and causing social or occupational dysfunction as well as subjective distress as being characteristic of personality disorder.

Ovenstone (1973) noted that persistent disturbances of interpersonal relationships or instability of mood were important features of personality disorder; character disorder occurred when the predominant distress was experienced by the patient and sociopathy when the predominant distress fell upon society. Batchelor (1954) described a high prevalence of "psychopathic states" among patients who made repeat suicide attempts. These are broad definitions of personality disorder and these investigators have used diagnoses of personality disorder made through unstandardized clinical assessments. It is difficult to be certain of the validity and reliability of these descriptions.

Clinical diagnoses of "psychopathy", "sociopathy" and "antisocial personality" and personality disorder have been identified as risk factors for further suicidal behavior (Buglass and McCulloch, 1970; Buglass and Horton, 1974a; Bagley and Greer, 1971; Adam et al, 1983). Assessment for the presence of these disorders was done by clinical assessment only; no further attempt was made to subdivide "psychopathy" into different personality disorders.

A range of psychopathic personalities were described by Schneider (1950). In German psychiatry this was a general term for all forms of personality disorder as well as neurosis and it did not have the more narrow definition ascribed to this category by British and American psychiatry, (Livesley et al, 1994). Kreitman and Foster (1991) in their study of a predictive scale for the repetition of parasuicide, also emphasized that tighter definitions for personality disorder as a risk factor for further parasuicidal behavior was required.

In North America investigators have explored the relationship of specific personality disorders especially borderline personality disorder and antisocial personality disorder to suicidal behavior. Fyer et al (1988a) found that borderline patients with affective disorder and substance use disorders had a higher rate of serious suicide attempts. These investigators noted that in the

clinical evaluation of the suicidal potential of borderline patients that it was important to assess for axis I pathology. Fyer et al (1988a) also stressed how crucial it was to control for the presence of axis I pathology in studies of suicidal behavior in patients with borderline personality disorder. Fyer et al (1988b) also noted that DSM-III borderline personality disorder was a very heterogeneous disorder and that comorbidity reflected base rates of psychopathology rather than anything inherent to borderline personality disorder and that further studies were needed which controlled for comorbidity in order to ensure homogeneity of comparison groups.

Fyer et al (1988a) found that suicidal behavior was not ubiquitous in borderline personality disorder. It seemed to be related to affective and substance abuse disorders but this group of investigators could not exclude that suicidal behavior was related to borderline personality alone.

Zanarini et al (1990), in an investigation of potential discriminators for borderline personality disorder from other axis I disorders, found that suicide attempts were characteristic of borderline personality disorder and could discriminate borderline personality disorder from other personality disorders and noted that affective features - although ubiquitous in patient with borderline personality - was not pathognomonic for borderline personality

disorder. While these findings may be valid in North America it may not be so locally. No studies have been done in developing countries to test this association.

Further, Zanarini et al (1990) do not appear to have controlled for the presence of specific axis I pathology in their cohort of patients as recommended by Fyer et al (1988b) but rather compared the borderline patients' affective symptoms with other personality disorders in terms of the Revised Diagnostic Interview for borderline patients (Zanarini et al, 1989). There is no information, apart from these affective symptoms as to whether the groups which they compared were heterogenous in their experience of depression and hopelessness which have well described associations with suicidal behavior.

The association of parasuicide with borderline personality disorder has not been described in the developing world. Paris (1991), in a review of the relationship between parasuicide, personality disorder and culture, noted that it was not clear whether suicide attempts in the third world are associated with the broad impulsive behavior of borderline personality disorder as had been observed in North America.

Tyrer and Ferguson (1987) noted that borderline personality disorder was not part of the Ninth Revision of the

International Classification of Diseases, the ICD-9, (World Health Organization, 1978) and that its validity as a separate personality disorder still needed to be established. This personality disorder has only recently been included in the Tenth Revision of the International Classification of Diseases, the ICD-10, (World Health Organization, 1992). It would be important to investigate the correlates of this personality disorder category in countries outside of North America.

In addition to these specific methodological problems in the description of personality disorder and suicidal behavior, it is important to take note of the difficulties that have been encountered in the ongoing work towards a more adequate classification of personality disorder as well as the problems associated with the measurement and description of personality disorder.

Chapter 5.The Classification and Assessment of Personality Disorder.

THE SEPARATION OF MENTAL STATE AND PERSONALITY DISORDERS

With the publication of the Third Diagnostic and Statistical Manual of Mental Disorders or DSM-III (1980) by the American Psychiatric Association - APA, for the first time the personality disorders were separated from axis I disorders and clinicians were encouraged to make a separate assessment of those personality difficulties which contributed to psychiatric morbidity in patients by using specified criteria. The decision to place mental state disorders on a separate axis from personality disorders was an arbitrary one. Livesley and others (1994) have questioned the rationale for the separation of personality disorder from axis I mental state disorders and these reviewers describe many similarities which the personality disorders share with axis I disorders.

These reviewers noted that there were many similarities between axis I and axis II. There was comparable temporal stability for disorders such as dysthymic disorder, generalized anxiety disorder and somatization disorder as was seen in the personality disorders. There were complex psychosocial and biological etiological factors for the occurrence of disorders on both axes - the disorders on the

two axes did not have unique constellations of etiological factors i.e., there was not a preponderance of developmental or psychodynamic risk factors for personality disorder as had been claimed by the psychoanalysts. There was extensive co-occurrence between disorders on both axes. Livesley et al (1994) noted also that it was possible that both axis I and axis II disorders could arise from similar underlying traits.

Walton (1986) did not accept the hypothesis that there was no fundamental differences between traits and mental state symptoms. He wrote (1986) that traits were universal and "abnormalities" of personality really represented extreme variations of traits. Symptoms and signs according to him only affected a small segment of the general population. This author also noted that symptoms really were a disruption of the continuity of behavior whereas traits described enduring behavior. Traits were also generally experienced as egosyntonic while symptoms were experienced as egodystonic. Other investigators such as Watson et al (1994) have suggested that many types of psychopathology are stable and trait-like in character and that dysphoria, other mood states and dysfunctional cognitions are all components of trait constructs such as neuroticism or negative emotionality.

Tyrer and Ferguson (1987) have also described how

inconsistent some of the shifts have been between axis I between axis II disorders. Schizophrenia spectrum disorder or schizotypal personality disorder was moved to axis II and affective spectrum disorder or cyclothymic disorder was moved to axis I in DSM-III (APA, 1980).

POLYTHETIC AND MONOTHETIC CLASSIFICATION SYSTEMS

In a polythetically derived classification system any combination of a specified minimum number of behavioral criteria determines the presence or absence of a disorder. This contrasts with a monothetically defined system in which the presence of all the defining features of a personality disorder category are defined by one characteristic. Polythetically defined categories really describe "family resemblances" among individuals belonging to a particular class. There is no one defining characteristic as in monothetically derived categories and any individual may have a greater or lesser number of characteristics, which have equal weight, of a set of characteristics which describe a prototype of the personality disorder.

These polythetic descriptions of personality disorder give rise to fuzziness of boundaries and overlap of categories as well as heterogeneity of psychopathology in individuals within any particular category. This contrasts with a

monothetic system in which classes would be expected to be highly homogenous. The polythetic model has been used in both the ICD-10 (WHO, 1992) or the Tenth Revision of the International Classification for Mental and Behavioral Disorders and the Fourth Revision of the Diagnostic and Statistical Manual for Mental Disorder or DSM-IV (APA, 1994). The thresholds chosen to determine the presence of individual personality disorders are arbitrary. Many patients with subthreshold symptoms may resemble patients who are diagnosed as having a particular disorder.

STUDIES INVESTIGATING THE FACTOR STRUCTURE OF THE CURRENT POLYTHETICALLY DERIVED CLASSIFICATION SYSTEMS

Factor analytic studies have been undertaken in an attempt to describe possible latent structures behind our current classification systems which describe the similarities and variation between personality disorders and to reduce long typologies to smaller clusters of personality disorders. There have been contradictory and inconclusive findings with limited clinical utility.

Tyrer and Alexander (1979) found evidence for four personality disorder groupings: flamboyant, withdrawn, anxious personality disorders and a fourth for the compulsive (anankastic) personality disorder. DSM-III and DSM-III-R (APA, 1980; APA, 1987) described three clusters

of personality disorders: cluster A or the eccentric group, cluster B or the dramatic group and cluster C or the anxious group. These recommendations of the APA were not empirically based and a number of factor analytic studies have shown a varying number of three or four factors. Different groupings of personality disorders have also been suggested in various factor analytic studies.

Zimmerman and Coryell (1990) showed, through a principal components analysis, that three factors which corresponded to the three groups of DSM-III also accounted for most of the variation among the personality disorders in a nonclinical population. These investigators noted the heterogeneity of patients with particular personality disorders which resulted from using the artificially created DSM-III dichotomies of polythetically defined disorders.

Despite their findings of three factors underlying the personality disorders, Zimmerman and Coryell (1990) cautioned against the reduction of the 11 personality disorders into three groups as they did not find high correlations between the dimensions of personality within the clusters that they had found; they showed that no two dimensions were interchangeable. These investigators found evidence that these dimensions were associated with different demographic and axis I correlates. They also

found that compulsive personality disorder and passive aggressive personality disorder did not load strongly on any of the three factors in their study.

Dowson and Berrios (1991) assessed the factor structure of DSM-III-R personality disorders with a self-report questionnaire in a group of psychiatric patients. Dowson and Berrios (1991) using factor analysis found a 3-factor solution for only seven of the eleven DSM-III-R personality disorders. This result proved different to the results from previous factor analytic studies which had found three or four clusters which had showed good correspondence with suggested DSM-III personality disorder clusters (Kass et al, 1985; Hyler & Lyons, 1988; Zimmerman & Coryell, 1990). The fourth factor found by Kass et al (1985) and Hyler and Lyons (1988) had been dismissed in the original investigations as a methodological artifact. However Schroeder et al (1992) have interpreted this fourth factor as representing the conscientiousness dimension of the Five-Factor Model of personality (Digman, 1990).

Dowson and Berrios (1991) further subjected their data to a cluster analysis of personality disorder scores and found evidence of three clusters. There was a lack of agreement between the personality disorder clusters defined by the three factor solution and the three groups of patients defined by cluster analysis. These three groups were

distinguished mainly by their personality disorder scores. They concluded that personality disorder clusters had only a limited value in routine clinical practice.

A notable finding in the Dowson & Berrios (1991) study was the grouping of avoidant personality disorder with the odd cluster and passive-aggressive behavior with the dramatic or emotional cluster. Widiger and Costa (1994) have also noted that narcissistic and antisocial personality disorder are not well captured by the constructs of dramatic or emotional and that the schizoid personality is more anhedonic than odd or eccentric.

DIMENSIONAL DESCRIPTIONS OF PERSONALITY AS SOLUTIONS TO THE PROBLEMS OF POLYTHETICALLY DERIVED CLASSIFICATION SYSTEMS

Factor analytic studies with their mixed and contradictory findings have illustrated some of the difficulties in describing variations in personality in terms of a polythetic categorical approach. A dimensional description of personality has been proposed as a solution by many workers in this field. Tyrer (1988b) and Bass and Murphy (1995) recommended a change to a dimensional classification in order to better reflect the reality of "abnormal personality". Tyrer (1988b) also suggested that interviews with an informant would improve the validity of classification. Despite this suggestion, Tyrer (1987) noted

that some disorders such as borderline and schizotypal personalities could possibly be qualitatively distinct and not be well described by means of a dimensional approach.

Ekselius et al (1993) examined the distribution of DSM-III personality disorder criteria in a sample of healthy volunteers and psychiatric patients. These investigators found that criteria were continuously distributed in this population and that there was no evidence of bimodality or distinct points of rarity. Kendell (1980) had noted that distinct disease entities showed either a bimodal distribution or a nonlinear relationship between symptoms and a criterion measure.

Livesley et al (1992) have also described how personality traits are normally distributed in populations and that patients with some personality disorders especially dependent and obsessive-compulsive personality disorders may have extreme dimensions of these normal personality traits. Discrete disease entities would be expected to give rise to a bimodal or multimodal distribution of traits. Livesley et al (1992) also have found no evidence of bimodality and points of rarity.

Livesley et al (1994) described the high comorbidity among various personality disorder categories and the considerable overlap in criteria sets. These investigators

reported that the dysfunction associated with personality disorder was continuously distributed and correlated with the number of personality disorder criteria met. Factor structures of personality have been found to be similar in clinical samples and in general population samples. Livesley and Schroeder (1991) found no unique factor solution for personality in patients with personality disorder.

Schroeder et al (1992) demonstrated a significant relationship between the Five Factor Model - a model developed to describe personality and which originated mainly from the studies of nonclinical populations - and measures of personality disorder. Livesley et al (1994) have argued that personality disorders do not represent discrete disease entities but rather that they are extreme variations of personality associated with the failure to attain the universal tasks of identity, attachment, intimacy or affiliation.

Dimensional models have been proposed to describe personality variation and questionnaires have been designed to measure personality disorder in terms of these models. Among those which have been developed specifically for the measurement of personality disorder are the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ) described by Schroeder et al (1992) and the

psychobiological model of Cloninger (1987) which is measured by the Tridimensional Personality Questionnaire.

DEVELOPMENTS IN THE CLASSIFICATION OF PERSONALITY DISORDER

Gorton and Akhtar (1990) noted that among the drawbacks to a categorical description of personality disorder was the loss of patients from categories who nevertheless had significant subthreshold symptoms. They also noted that in a categorical system of description there was a need for wastebasket categories such as mixed and atypical disorders. They emphasized the potential for the artificial reification of states of "abnormality" in personality description. Walton (1986) also noted that a category system for the description of personality disorder failed to do justice to the complexity of personality description and led to disagreement among clinicians about diagnosis. A lot of relevant information was lost as a patient could have a complex personality disorder with mixed abnormal personality types.

Tyrer (1988b) noted that many of the criteria used in DSM-III were based on inadequate evidence and that a categorical system failed to recognize the wide variation of personality abnormality in which personality disorder represented only a small part.

Despite these criticisms, there have been many new developments in the typology of personality disorder and also improved methods to assess personality deviation. The development of specified criteria for the diagnosis of personality disorder as recommended for use in both the DSM-IV or Fourth Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association - APA, 1994) and the International Classification of Mental and Behavioral Disorders or ICD-10 (World Health Organization - WHO, 1992) have been major milestones.

The typology for personality disorders of the ICD-10 does not include some DSM-IV personality disorder constructs such as schizotypal personality disorder and narcissistic personality disorder. The authors of the ICD-10 felt that schizotypal personality disorder was better grouped with the schizophreniform disorders and as they were concerned about the validity of narcissistic personality disorder, they decided not include this personality disorder in the ICD-10 classification of mental and behavioral disorders (WHO, 1992).

Widiger and Costa (1994) have also described the instability of DSM-III (Third Revision of the Diagnostic and Statistical Manual) nomenclature. They note in their review that borderline, avoidant, schizotypal and narcissistic personality disorders were new to DSM-III

(APA, 1981) and that sadistic, self-defeating and passive-aggressive personality disorders were moved to and deleted from the appendix of DSM-III-R (APA, 1987) and DSM-IV (APA, 1994).

Tyrer in an editorial (1995) noted the unwelcome rapidity of changes in the number of personality disorders as well as the changes in names of personality disorder categories. He observed that between ICD-9 and ICD-10, cyclothymic personality disorder was lost to the affective disorders, asthenic personality disorder was renamed dependent personality disorder, explosive was renamed impulsive, antisocial was renamed dyssocial and borderline personality disorder was allowed into the classification as a variant of emotionally unstable personality disorder. He noted further that DSM-IV had dispensed with passive-aggressive personality disorder and that the APA also introduced and subsequently dispensed with self-defeating and sadistic personality disorder. He concluded that these changes had not advanced clinical science.

SITUATIONAL VARIABLES AND THE STABILITY OF PERSONALITY TRAITS

The ICD-10 (WHO, 1992) defines personality disorder as "deeply ingrained and enduring behavior patterns, manifesting themselves as inflexible responses to a broad

range of personal and social situations." The authors of DSM-IV (APA, 1994) included in their definition of personality that it was an enduring pattern of inner experience and showed deviations in behavior from the expectations of the individuals culture as manifested in at least two areas which included: cognition, affectivity, interpersonal functioning and impulse control - which was pervasive and stable over time.

Mischel (1968) challenged this view that personality characteristics were consistent over time and across different social situations. Mischel (1968) described poor correlation between behavior in one situation when compared with another. Funder and Ozer (1983) however have demonstrated that situational variables failed to account for more than 15% of behavioral criterion variance in personality description. Carson (1989) in his review of developments in the research and theory of personality felt that this debate was possibly over. However Maher and Maher (1994) noted that this debate about the consistency of personality traits across situations has not come to a definitive conclusion. For example, Walton (1986) has shown that parallel to clinical improvement personality ratings are less deviant at follow-up.

Kendrick and Funder (1988) have described some of the lessons to be learnt from the person-vs-situation

controversy. They have shown that many of the hypotheses advanced by the situationists to account for whatever consistency had been found - artifacts of inter-rater agreement due to language, base rate accuracy, shared stereotypes, discussion between observers or situation based consistencies - did not hold up to scrutiny. These investigators also listed procedures for improving behavioral correlations based on ratings and these included the use of raters well acquainted with ratees, the use of multiple behavioral observations and multiple observers, and the use of characteristics that were publicly observable.

In the clinical arena, Walton and Presley (1973) have documented the unreliability of a clinical diagnosis of personality disorder. Presley and Walton (1973) recommended that a dimensional approach to the classification of personality disorder would improve reliability. Other investigators such as Heumann and Morey (1990) in an investigation of the interrater reliability of categorical and dimensional judgments of personality disorder came to similar conclusions that dimensional judgements were substantially more reliable than categorical diagnoses. Despite these findings, there has been a reluctance on the part of clinicians to abandon a categorical classification of personality disorder. Paris (1991) noted that this was partly due to tradition but at least some of the

psychiatric categories for personality disorder represented recognizable clinical syndromes. The DSM-IV (APA, 1994) and the ICD-10 (WHO, 1992) have retained these categories despite many recommendations for a change to a dimensional system of assessing personality (Tyrer, 1988b; Livesley et al 1994).

THE CLINICAL UTILITY OF NEW PERSONALITY DISORDER CATEGORIES

There has been over many years an ongoing refinement of diagnostic criteria for the classifications of personality disorder. This is seen in the successive revisions of the Third Diagnostic and Statistical Manual of Mental Disorders or DSM-III (APA, 1980), The Revision of the Third Diagnostic and Statistical Manual of Mental Disorders or DSM-III-R (APA, 1987) and DSM-IV (APA, 1994) and also the revisions of ICD-9 and ICD-10 by the WHO (1978; 1992). Higgitt and Fonagy (1992) noted that despite these refinements in the description of personality disorder categories that there had been few practical benefits.

Tyrer et al (1990) failed to identify any predictive value associated with categories of personality disorder and response to treatment. Walton (1986) reported similar findings that personality disorder category did not predict illness outcome but was predictive of patient's social adjustment, degree of social disability. Similarly Reich

and Green (1991) in their review of the effect of personality disorders on the outcome of treatment found evidence that personality disorder was associated with poor outcome in many studies however the literature was inadequate to determine whether certain pathological traits were important in the prediction of outcome.

Baer et al (1992) found evidence that cluster A DSM-III personality disorders such as paranoid, schizoid and schizotypal categories were predictors of poorer outcome in patients with obsessive-compulsive disorder and who were treated with clomipramine. Nestadt et al (1992) have shown in an epidemiological survey that personality disorders do have specific relationships with axis I conditions: these investigators found an increased odds of association between generalized anxiety disorder, simple phobia and smaller odds for alcohol use disorders with compulsive personality scores while antisocial personality scores were associated with greater odds of alcohol use disorders and smaller odds for generalized anxiety disorder. Nestadt et al (1992) concluded that personality disorders have different vulnerabilities and different protective influences for the development of axis I conditions.

Parallel to these innovations in the criterion based descriptions of personality disorder, there has been the development of semi-structured interviews and self-

completed questionnaires to measure the revised criteria of the respective classification systems.

SEMI-STRUCTURED INTERVIEWS AND QUESTIONNAIRES TO ASSESS PERSONALITY DISORDER

Semi-structured interviews were developed in order to improve the poor reliability among clinicians which was demonstrated to be poor even when they were given definitions of personality disorder categories by Walton and Presley (1973). Standage (1989) listed some reasons for the poor reliability of psychiatric diagnoses. This occurred as a result of changes in the behavior of the patient across time and between interviewers, deficiencies in classification and biases introduced by clinicians.

Standage also noted that some further difficulties arose in the consistent use of structured interviews for personality disorders. These were the influence of the patients mental state, the overlap between different types of disorder and the different descriptions of personality by patients and informants. Standage (1989) also noted that illness and personality factors co-vary and Walton (1986) has shown that ratings of abnormal personality become less deviant with clinical improvement.

Pilgrim et al (1993) also noted that patients who had

impaired insight could give inaccurate and misleading descriptions about their personality. Loranger et al (1991) found that the PDE - Personality Disorder Examination - was not affected by anxiety or depression. However Stuart et al (1992) reported that mental state affected the assessment of personality disorder when using the PDE.

In the United Kingdom, Tyrer and Alexander (1979) developed the Personality Assessment Schedule or PAS. This instrument determined the presence of personality disorder and used a dimensional approach to generate categorical diagnoses. Tyrer (1988a) has demonstrated that the PAS is compatible with the personality disorder classification of the American Psychiatric Association's (1980) DSM-III as well as the ICD-9 or Ninth Revision of the International Classification of Diseases (WHO, 1978).

Some of the personality disorder categories generated by this instrument have not met with broad recognition. Tyrer et al (1990) identified hypochondriacal personality disorder by cluster analysis of data from the Personality Assessment Schedule. Bass and Murphy (1995) provided evidence for this viewpoint in a recent review of the relationship between somatoform and personality disorders and suggested that somatoform disorders reflect an underlying dysfunction of personality. The PAS was designed to incorporate both the patient's and an informant's

description of personality. In addition to the distorting effects of mental state, Tyrer and Alexander (1979) noted that patients gave idealized accounts of themselves when compared to the histories of informants who were biased towards identifying disorder in the patient's personality. The two descriptions often differed.

Mann et al (1981) developed the SAP, or Standardized Assessment of Personality, a semi-structured interview for the categorical assessment of ICD-9 (WHO, 1978) personality disorders. In order to provide a more comprehensive assessment of personality in this group of patients than that which the ICD-9 provided for, these investigators extended their evaluation of personality disorder to include anxious and self-conscious personalities. Informant reports of these categories were found to be consistent over twelve months. This instrument has been revised recently by Pilgrim and Mann (1990); it now provides more structure to assess the criterion based classification for personality disorders of ICD-10, or the Tenth Revision of the International Classification of Diseases of the WHO (1991). It is an informant based interview. Standage (1989) noted in his review of structured interviews for the diagnosis of personality disorders that it had to be appreciated that the view of the patient about his/her personality was incomplete. The PAS, SAP and PDE rely on a report by an informant to derive a diagnosis of personality

disorder.

PROBLEMS ASSOCIATED WITH INFORMANT BASED INTERVIEWS OF PERSONALITY DISORDER

There are also problems associated with the use of informants in order to assess for the presence of personality disorder. Standage (1989) noted in his review of structured interviews for the diagnosis of personality disorder that the informant's description of personality was incomplete. Informants might not necessarily agree among themselves nor with the patients description of personality characteristics. Riso and colleagues (1994) demonstrated poor patient-informant concordance for personality disorder categories of the PDE - Personality Disorder Examination.

These investigators found higher concordance with patients' description of personality disorder when friends were used as informants rather than family members. Riso et al (1994) also noted that patients reported more personality disorder symptoms than relatives. Zimmerman et al (1988) also found poor concordance between patient and informant derived diagnosis of personality disorder. Pilgrim and colleagues (1993) demonstrated that the reports of patients' personality characteristics by female informants as well as by informants with greater length of acquaintance with the

patient, were more reliable.

It is also possible that mental disorder in informants may bias the assessment of personality disorder. Riso et al (1994) noted that axis 11 psychopathology in informants themselves seemed to adversely affect concordance. The comments of Chapman et al (1994) about using informants in the family studies of psychiatric disorder are also relevant here. Chapman et al (1994) have demonstrated that family studies may have biased assessments if the informant has a mental disorder. These investigators note that informants with mental disorder are inclined to describe more mental illness in family members than not-ill informants who tend to be less likely to identify illness in their relatives.

Chapman et al (1994) also describe that sensitivity of data from informants for mental disorder is low to moderate and genuine illness often goes unreported but specificity is usually good and not-ill individuals are seldom misidentified in family history reports. Some instruments to measure personality disorder are based on both subject and informant report. This approach may have unique problems itself as it is not clear how to weigh the differing descriptions of behavior through self-report or by others.

INSTRUMENTS FOR MEASURING PERSONALITY DISORDERS DESCRIBED
IN THE CLASSIFICATION SYSTEM OF THE APA

The first interview to measure DSM-III personality disorders was the Structured Interview for DSM-III Personality Disorders -SIDP- (Pfohl et al, 1982; Stangl et al, 1985). The interview was intended for administration to both the patient and an informant. It has been updated to include DSM-III-R criteria (Pfohl et al, 1989). The Personality Disorder Examination was described by Loranger et al (1987) and yields both dimensional scores and categorical responses. The International Personality Disorder Examination (IPDE) is a development of the PDE and has been described by Loranger et al (1991; 1994). The PDE was modified to allow for international use and compatibility with both the ICD-10 and the DSM-III-R classification systems.

Other semi-structured interviews developed to measure DSM personality disorders have been the Structured Clinical Interview for DSM-III Personality Disorders, SCID II (Spitzer et al, 1985) and the revised version for DSM-III-R personality disorders (Spitzer et al, 1987). Zanarini et al (1987) described the reliability of the DIPD or Diagnostic Interview of Personality Disorders.

Skodol and Oldham (1991) noted that a major difference

between these structured interviews is in their format. The SCID-11 and the DIPD are organized by the personality disorder that they are meant to explore, unlike the PDE and SIDP which are organized around areas of functioning such as work, affects or interpersonal relationships.

In addition to the development of these semi-structured interviews for the assessment of personality disorder, there has been the simultaneous development of patient completed questionnaires in order to screen for the presence of personality disorder. In general there have been problems associated with a questionnaire approach to determine the presence or absence of a personality disorder. Hyler et al (1990) reported that the revised version of the Personality Disorder Questionnaire (PDQ-R) has high sensitivity but low specificity for the determination of the presence of personality disorder. There are many false positives when PDQ-R has been used and the developers of this instrument recommended that it be used mainly as a screening test for the presence of personality disorder.

Correspondence or agreement for the presence of personality disorders between semi-structured interviews and patient completed questionnaires has been investigated with poor results. Zimmerman and Coryell (1990) noted that depression in patients and the PDQ lie scale score were responsible

for poor concordance with the Personality Disorder Questionnaire (Hyer et al, 1983) and the SIDP. In their study of the validity of the PDQ-R, Hyer et al (1990), also noted that the agreement between the SCID-11 and the PDE was only modest with poor reliability in the case of some personality disorders. Hyer et al (1990) cautioned that one structured interview was not necessarily a substitute for another as the PDE and the SCID-11 yielded different results for some personality disorders in their study.

Concern has also been expressed about the effects of mental state on the dimensions of personality disorder of other personality questionnaires such as the Millon Clinical Multiaxial Inventory-11 (Millon, 1987). The Minnesota Multiphasic Personality Inventory has also been utilized for the development of the Minnesota Multiphasic Personality Inventory scales to measure and describe DSM-111 personality disorders by Morey et al (1985).

Parallel to these developments in the classification and measurement of personality disorder in clinical populations major strides have been taken in the theoretical description of personality and these studies have involved persons in the community rather than patients who have presented for treatment of psychiatric disorder. Many of these models for the description of personality are now

being applied to clinical populations in order to describe the contribution of the dimensional components of personality to personality disorder and other psychiatric disorders.

Chapter 6.Personality - a lexical and factor analytic approach.

There have been many recent and novel developments in the theory of personality and temperament. Keeping pace with these new models, instruments have been described to enable more precise delineation and definition of the dimensions of personality. Although these general models of "normal personality" were developed in nonclinical populations they have been used clinically to describe personality disorders.

DEFINITION OF PERSONALITY

Allport (1937) defined personality as, "...the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to the environment. " Thorpe (1956) described learning as the "organization of behavior as a result of individual experience". Cloninger et al (1993) described individual differences in learning which involved the reception, processing and storage of information as defining personality in general.

Personality can be conceptualized in a variety of different ways and at various levels of abstraction. Many concepts have evolved and numerous instruments have been developed

to measure these concepts. Researchers are faced with a large number of personality scales from which to choose and there is little guidance about which instrument to use.

THE LEXICAL DESCRIPTION OF PERSONALITY

Klages (1932) and Allport (1937) used a lexical approach for the description of personality traits. This approach took the view that most personality characteristics were encoded in natural language, (John, 1990). Allport and Odbert (1936) listed the personality-relevant terms found in the Websters New International Dictionary (1925). Terms were included if they distinguished the behavior of one human being from that of another. This early approach of Allport was to emphasize intraindividual or idiographic trait organization according to Watson et al (1994) in contrast to later nomothetic structures of personality which were generalizable across individuals.

Allport and Odbert (1936) described four categories of the 18 000 words which they listed. Their first category consisted of relatively neutral terms which described possible personality traits, such as aggressive or sociable. Their second category listed terms which described temporary moods and states such as frantic, abashed and rejoicing. Allport and Odbert noted that some of the words in the first category could have also been in

the second category, thus some characteristics could describe both trait and state. The third category consisted of terms such as irritating or insignificant. These terms referred more to social evaluations than possible personality traits. Their fourth category consisted of metaphorical and doubtful terms and included physical characteristics such as lean and redhead.

THE FACTOR ANALYTIC DESCRIPTION OF PERSONALITY

Personality traits can be inferred from systematic covariation of behavioral responses and are aggregates of individual responses across multiple situations. Trait concepts emerge, according to Watson et al (1994), from patterns of measures which covary together or apart from one another. Investigation of these traits may take place at various levels. These traits may be evaluated as summaries of consistencies in behavior or they may be understood as phenotypic structures of latent psychological structures which need further investigation. This trait covariation according to Watson et al (1994) is the essence of the general structure of personality.

The list of Allport and Odbert was unwieldy and overinclusive. Many of the terms that they listed were synonymous and investigators have subsequently used factor analysis to produce more parsimonious models for the

description of personality traits. Factor analysis summarizes the pattern of covariation among measures and observed correlations are accounted for by hypothesizing variation along a few latent factors. Factor analysis according to Watson et al (1994) has been criticized for subjective decisions in the process which shape the emerging structure. These include decisions of how far to continue the process of factor extraction and that in reality there are an infinite number of rotations for a given number of latent factors. Watson et al (1994) note that, despite these criticisms of factor analysis, different rotational methods and different factor extraction methods have yielded similar results.

Cattell (1943) incorporated the work of Allport and Odbert (1936) in his multidimensional model of personality structure. Cattell used Allport and Odbert's first category and added 100 of the state terms from the second category to this. He then applied factor and cluster analytic techniques to these personality descriptors. Cattell supplemented these derived clusters with ability traits such as general intelligence and special abilities. By means of factor analysis, Cattell (1945) obtained 12 primary personality factors. He later constructed the Sixteen Personality Factor Questionnaire to assess these factors in patient self-reports, (Cattell et al 1970). Twelve of these dimensions are found in other trait rating

factor-analytic studies and four of the dimensions are specific to his questionnaire (John, 1990). Despite Cattell's painstaking and pioneering work, Digman and Takemoto-Chock (1981) noted that Cattell's personality model is not correct because of errors in Cattell's analysis.

Other investigators such as Fisk (1949), constructed simplified trait ratings from Cattell's variables. Fiske's factor analysis (1949) suggested that there were five factors underlying these descriptive traits rather than twelve. Tupes and Christal (1961, 1992) in their study and analysis also found five recurrent factors for personality description. They labelled these factors (I) Surgency - talkative, energetic, assertive; (II) Agreeableness - good natured, cooperative, trustful; (III) Dependability - conscientious, responsible, orderly; (IV) Emotional stability - calm, not neurotic, not easily upset; (V) Culture - intellectual, cultured, polished, independent minded. Goldberg (1981) called these factors the "Big Five".

In contrast other personality models (Eysenck and Eysenck, 1985; Tellegen, 1985) have three dimensions only and are known as the "Big Three" models of personality. Tellegen (1985) concluded that the three factors of his model: positive emotionality, negative emotionality and constraint

were similar in content to Eysenck's dimensional model of extraversion, neuroticism and psychoticism (Eysenck and Eysenck, 1985).

Goldberg (1981) noted that each domain of the "Big Five Model" of personality was very broad and summarized a large number of distinct personality traits. Digman (1990) described four levels of abstraction which ranged from behavioral responses through habits or act frequencies and characteristics or scale facets to the domain of five factors.

Norman (1967) compiled a revised list of personality descriptive terms in order to update the Allport and Odbert list and to rectify the imperfections in Cattell's analysis. Goldberg (1981) used Norman's (1967) updated list to examine the underlying factor structure of personality ratings. Goldberg replicated the earlier findings of Tupes and Christal (1961) for a five-factor solution for the description of personality.

PROBLEMS ASSOCIATED WITH THE BIG FIVE MODEL OF PERSONALITY

The Big Five Model of personality structure has been hailed as a major advance in the description of personality. However it is premature to conclude that this is a final model for the description of personality and a number of

investigators have described some of the problems associated with the Big Five Model of personality. Concern has been expressed about cultural biases in this model as well as the number and content of these domains.

John (1990) has described the enormous coverage of the domains of the Big Five model of personality. This could lead to problems in predicting specific behaviors as item information was lost when these were aggregated into scales. In other words these very broad descriptions of behavior are not very specific in their prediction of behavioral responses. John (1990) in his review also noted that the actual content of the big five and labels for the big five had not been agreed on. John (1990) also reported that several domains of personality were not adequately described by the Big Five and these included dimensions of individuation, autonomy, traditional values and maturity. Waller and Ben-Porath (1987) argued that it was premature to declare the "Big Five" as a final model for the structure of personality.

Lewis-Fernández and Kleinman (1994) have described the cultural and largely unexamined biases of North American constructs of personality. These reviewers described the egocentricity of the self in North American culture. They noted that societies consisted of unique mixes of sociocentric and egocentric traits. Egocentricity referred

to the self as an autonomous reality. Radical egocentricity did not examine the social roots of psychiatric disease, the social course of mental illness and the interpersonal patterning of personality. These authors found that most of the world adhered to a sociocentric ideology where individual experience was nested in social relationships which were the loci for self-worth, self-fulfillment and self-control.

They also described the mind-body dualism in North American constructs of psychopathology. According to Lewis-Fernández and Kleinman (1994) most of the world's people experienced human suffering in an integrated somatopsychological way or simultaneous mind and body distress. They wrote that a third assumption of North American constructs of psychopathology was that culture was only an epiphenomenon in relationship to an invariant bedrock of biology and this led to a discounting of illness experiences and healing practices of people in other cultures.

Lewis-Fernández and Kleinman (1994) noted that the Five-Factor model of personality was a highly abstract expression of individualistic personality rather than a universal pattern of personality dimensions and noted that the Five-Factor model had been mainly tested in North-American university educated samples. Results obtained in North-America might not necessarily replicate to other

cultures.

These authors also noted that a cultural theory of personality asserted that the local cultural world preceded the appearance of the individual and patterned his or her developing biological and psychological processes and mind-body states. Notions of personality were profoundly shaped by collective cultural paradigms. They emphasized that their cultural theory of personality did not attempt to do away with the notion of a self-aware person or individual agency nor the influence of biological propensities such as temperament and coping styles on human personality.

Variation in the content of these domains has also been described by other investigators. Zuckerman et al (1991) emphasized activity in their five factor model and did not include an "openness or culture" factor. These investigators noted that activity was not given sufficient attention by other workers in this area. Digman also noted in his (1990) review that there was disagreement about the meaning of the five dimensions. He noted that Dimension I corresponded to Eysenck's (1985) extraversion/introversion and Dimension IV referred to as neuroticism or emotional stability had links with Eysenck's similarly named dimension. Eysenck's psychoticism dimension was according to Digman (1990) an amalgam of Dimension II or friendliness and Dimension III or conscientiousness/will.

Watson et al (1994) have described an integration of the Big Five and Big Three Models of personality. These investigators note that extensive data indicates that neuroticism or negative emotionality and extraversion or positive emotionality in the Big Three Model and Big Five Model have a high correlation and thus share a "Big Two" of neuroticism and extraversion. Watson et al (1994) investigated whether psychoticism or disinhibition represented some combination of conscientiousness and agreeableness.

They used instruments to measure the Big Three and The Big Five Model and through principal-components analysis showed that measures of the Big Three split between conscientiousness and agreeableness. They concluded that the Big Three and Big Five models defined a common Big Four space with the exclusion of the final Big Five trait of imagination or openness. They proposed an integrative hierarchical structure consisting of four major domains or Big Four. These domains were: I - neuroticism or negative emotionality, the extent to which the person perceived the world as distressing and experienced negative emotions; II - extraversion or positive emotionality, the willingness to engage and confront the environment; III - conscientiousness or constraint, the control of basic impulses; and IV - agreeableness, the ability to get along with others. These four domains were comprised of many

primary traits.

OTHER DESCRIPTIONS OF PERSONALITY WHICH HAVE NOT BEEN
DERIVED FROM FACTOR ANALYTIC STUDIES OF THE NATURAL
LANGUAGE

There are several alternatives to the lexical approach in order to determine the dimensions of personality. One alternative to the lexical approach was to use clinical expertise and relied on experts to supply statements and descriptive phrases that they had found useful for personality description. The 100-item California Q-sort (Block, 1961) was developed in such a way and factor analysis suggested that the big five could be recaptured from this item set, (McCrae et al, 1986).

Wiggins (1982) proposed a circumplex model of interpersonal behavior defined by Power and Love-Hate. McCrae and Costa (1987) have shown that this circumplex model may be accounted for by the extraversion and agreeableness dimensions of the five-factor model.

Cloninger et al (1993) noted that although the Five-Factor Model offered a useful description of personality, it was limited in explaining the etiology of behavior. Cloninger et al (1993) felt that information beyond that provided by factor analysis was required. Some personality models which

have attempted to describe the etiology of behavior are examined next.

Chapter 7.Personality - the domains of temperament and character.

DEFINITION OF TEMPERAMENT AND CHARACTER

Other investigators have proposed temperament-based models of personality structure. Temperament has been defined by Rutter (1987) as "simple, non-motivational, non-cognitive, stylistic characteristics...describing individual differences between people," and, "such differences appear early in childhood, show substantial stability over time,represent predictable modes of response...and possibly have direct neurobiological correlates...".

Cloninger (1994) defined temperament as the automatic associative responses to emotional stimuli that determined habits and moods and which were moderately heritable; Cloninger further contrasted temperament with character. Character referred to self-aware concepts that influenced voluntary intentions and attitudes, and which were weakly heritable. Rothbart and Ahadi (1994) defined temperament "as constitutionally based individual differences in reactivity and self-regulation influenced over time by heredity, maturation and experience." Reactivity according to these authors referred to the responsiveness of the emotional, activation and arousal systems. Self-regulation referred to such processes as approach, avoidance and

attention which modulated the reactivity of the individual.

THEORETICAL MODELS OF TEMPERAMENT

The notion that temperament has its root in physiological processes has a long history. During the periods of the early Greco-Roman and Arabic theorists who laid the foundations for Western medicine and also through the Middle Ages, temperament was understood to be the result of a balance of the four humors: the sad and anxious melancholic was understood to have an overabundance of black bile, the irritable choleric was understood to have a preponderance of yellow bile, the extraverted and sociable, sanguine person was perceived to have a preponderance of blood and the phlegmatic person who was slow and unreactive was seen to have an excess of phlegm. Temperament determined vulnerability to illness and no distinction was made between physical and mental illness. Techniques to restore the balance of the four humors included bleeding, vomiting and purging.

In keeping with these ancient hypotheses, Rothbart and Ahadi (1994) have described temperament as providing the substrate from which personality develops. The domain of personality is much wider than temperament according to these authors. Rothbart and Ahadi (1994) described personality as containing temperamental dispositions as

well as skills, individual thoughts, values, needs, goals, the perception of self and others. Temperament, as considered by these authors, had a role in influencing the development of these other aspects of personality.

Thomas and Chess (1977) described nine dimensions of temperament from their work on the studies of temperament in infants 2-3 months of age. Rothbart and Ahadi (1994) reported that five to six dimensions have emerged from factor analytic work on the dimensions described by Thomas and Chess (1977). These factors were: I - fearfulness, II - irritability, III - positive affect, IV - activity level, V - attentional persistence and VI - rhythmicity.

Rothbart and Ahadi (1994) in their model of temperament described three broad factors which were recovered from factor analytic studies of the behavior of older children between 3 and 8 years of age. They labelled these factors: surgency/extraversion, negative affectivity and effortful control. They noted that these dimensions, described by themselves, were similar to some of the dimensions of the "Big Five" model of McCrae and Costa (1987) and the "Big Three" models of personality (Tellegen, 1985; Eysenck and Eysenck, 1985).

These investigators noted a correspondence between fearfulness and irritability in childhood and neuroticism

in adulthood. Positive affect and activity level were possibly related to the adult dimension of extraversion. Attentional persistence in childhood could correspond with adult dimensions of control or constraint.

Rothbart and Ahadi (1994) described temperament from a developmental perspective. They described how temperament was implicated in learning processes and development. They noted that each child experienced a given situation differently and described how initial emotional responses influenced the development of the child's self-concept and perception of others. Individuals varied in their regulation of emotional reactivity; those individuals with a low threshold for distress attempted to keep things quiet and individuals who needed high levels of stimulation for pleasure would attempt to increase excitement.

Rothbart and Ahadi (1994) observed that various components of temperament were displayed at different developmental stages; they noted that the positive approaching six month old was different from the hesitating, self-soothing 10-month old, who was beginning to demonstrate both fear and caution. Thomas & Chess (1977) described goodness of fit where there was a match between the temperamental characteristics of the child and the expectations of the parent. This goodness of fit had implications for the development of later psychopathology.

Rothbart and Ahadi (1994) noted that the development of attachment between mother and child was a dynamic social process conditioned by the infant's emotional reactions and the responses of its care giver. This interaction had various outcomes which were dependent on the quality of the relationship between infant and caregiver. Temperament according to these authors could thus predispose to or protect individuals from the development of psychopathology in a number of different ways.

Rutter (1986) wrote that temperamental variations modified responses to stress and adversity. This was brought about directly or indirectly. Children with difficult temperaments were more likely to be the targets of parental irritation and hostility. Rutter noted that behavioral inhibition had a relatively direct effect. This could be adaptive where long periods of attention was required.

Among the temperament based models for personality assessment are Eysenck's (1986) three factor model of extraversion, neuroticism and psychoticism and Tellegen's (1985) three dimensions of positive emotionality, negative emotionality and constraint. Buss and Plomin (1975) also described four temperament characteristics - emotionality, activity, sociability and impulsivity. Cloninger et al (1993) have described their psychobiological model of temperament and character. Cloninger et al (1993) noted

that a fundamental difference between their model and other investigators was the recognition that genotypic and phenotypic structures of personality differed because phenotypic variations could result from the interaction of environmental and genetic influences. Cloninger et al (1993) described how other tridimensional models - Eysenck and Eysenck (1985), Tellegen (1985), Gray (1982) - made the assumption that observed phenotypic structure was the same as the underlying biogenetic structure of personality.

Heath et al (1994) demonstrated significant genetic contributions to Harm Avoidance, Novelty seeking and Reward Dependence (some of the temperament dimensions described by Cloninger et al, 1993). Heath et al (1994) also demonstrated that the personality systems of Cloninger and Eysenck were not alternative descriptions for the same personality dimensions but rather that each provided incomplete descriptions of personality differences.

Carey and DiLalla (1994) reported in their review of the relationship between genetics, personality and psychopathology, that genetic factors accounted for between 30% and 60% of the variance in adult personality traits. These authors also noted that genes could account for over 50% of the correlations between neuroticism and state symptoms of anxiety and depression. They concluded that genetically influenced biological systems could confound

the relationship between apparent phenotypic cause-effect relationships. Maher and Maher (1994) have however noted that these mathematical models of the genetic contribution to personality still await confirmation from molecular biology.

Cloninger et al (1993) postulated that there were four temperament dimensions; harm avoidance, novelty seeking, reward dependence and persistence. Cloninger et al (1991) reported few important differences between ethnic and gender groups for scores on the Tridimensional Personality Questionnaire. This questionnaire did not measure the dimension of persistence. Cloninger et al (1993) found that the original model (Cloninger, 1986) which included harm avoidance, reward dependence and novelty seeking was inadequate. This model has now been extended to include three character dimensions of self-directedness, self-transcendence, cooperativeness and a fourth temperament dimension of persistence. These and other investigators (Pedersen et al, 1988; Tellegen et al, 1988; Heath et al, 1993; Heath et al, 1994) have demonstrated that there is a strong genetic influence on these temperament dimensions. There is no genetic data available for the three character dimensions which have been described nor an evaluation of the amended theory of Cloninger et al (1994).

Cloninger (1994) has linked his dimensions of temperament

and character to different patterns of learning. According to this theorist (Cloninger, 1994) temperament is linked to associative learning and is percept based. It includes procedural memories which involve the learning of habits and skills. This learning is unconscious or implicit and encodes for visiospatial information and affective valences (Cloninger et al, 1993). Character is linked in Cloninger's model of personality to abstract symbolic learning and includes self-directed behavior, social cooperation, empathy and creativity. This learning is concept based, conscious and explicit (Cloninger et al, 1993). Differences in learning, according to Cloninger et al (1993), in the reception, processing and storage of information define personality in general. In addition to describing links between different learning patterns and his model of personality, Cloninger (1994) also described how temperament found its anatomical representation in the limbic circuits linking the hippocampus, amygdala, hypothalamus and related subcortical structures. Character had it's anatomical representation in the hippocampal formation and cerebral neocortex.

Dopaminergic neurones are possibly linked to novelty seeking and form part of the behavioral activation system. This system is involved in the incentive activation of pleasurable behavior and the avoidance of boredom and the active pursuit of reward. Individuals phenotypically high

in novelty seeking are curious and may be impulsive. Serotonin is the neuromodulator linked to the behavioral inhibition system which is measured phenotypically by the harm avoidance dimension. Individuals high in harm avoidance are fearful, pessimistic, shy and fatigable. This behavioral inhibition system is responsible for passive learning processes that inhibit behavior associated with aversive consequences, novelty or nonreward. The behavioral dependence or maintenance system is linked to norepinephrine metabolism and is concerned with the maintenance of warm social affiliations as well as the maintenance of other behavior. Reward dependence is the phenotypical dimension in Cloninger's model which measures the activity of this system. Cloninger also postulated that projections from the hippocampal subiculum to the nucleus accumbens links the behavioral inhibition system and the behavioral activation system and is involved in the maintenance of behavior despite frustrative non-reward. This behavioral response is measured by the dimension of persistence. Individuals high in this dimension tend to be ambitious overachievers.

Cloninger (1994) has also described some possible links of character dimensions with brain function. Self-directedness includes responsibility and resourcefulness in the achievement of personal goals. These individuals are described as mature and are able to organize behavior

towards self-chosen goals. Frontal lobe activity is linked to this character dimension. Cooperativeness or the ability to get along with others is possibly linked to prefrontal and temporo-parietal cortical activity. Self-transcendence measures identification with universal concerns and spirituality rather than rational materialism and those individuals who are high in self-transcendence show strong coherence of activity in homologous cortical regions as shown in electroencephalograms during episodes of creativity.

In summary models of personality and the measurement of personality have developed from diverse perspectives. There are two models which are presently receiving extensive investigation and these are the Five-Factor model and the psychobiological model of Cloninger et al (1993). The Five-Factor model was originally developed to describe variation in personality traits normatively rather than to provide an assessment of personality pathology. Particular problems are encountered with this model when attempts are made to describe personality disorder categories as the neuroticism factor incorporates a heterogenous mix of anxiety, depression and impulsivity. This could confound the assessment of personality disorder with mental state disorders. The psychobiological model of personality described by Cloninger et al (1993) was developed to describe personality trait variation among patients with

personality disorders (Cloninger, 1987).

Originally this model only incorporated three factors (Cloninger, 1987) but has now been extended to include seven personality dimensions. The persistence dimension was derived from the reward dependence dimensions. It is not clear to what extent the newly described dimensions of character (Cloninger et al, 1993) are derived from these earlier dimensions. Fairly high correlations have been noted between self-directedness and also between harm avoidance and cooperativeness and reward dependence (Cloninger et al, 1993). However this model has been demonstrated to describe more variance among the different personality disorder categories (Svrakic et al, 1993) than the five-factor model. This model is a major and fundamental advance in personality theory as it incorporates mechanisms of learning, concepts derived from developmental psychology and also attempts to describe the biological substrate for personality variation.

Keeping pace with these developments in the theoretical descriptions of personality has been the development of structured interviews and questionnaires to assess the postulated personality dimensions. There have also been efforts to link these dimensions with psychiatric disorder and personality disorder. A few studies have focussed on the relationship of personality dimensions to suicidal

behavior.

Chapter 8.The Relationship of Personality Dimensions to Personality Disorder and Suicidal Behavior.

INSTRUMENTS DEVELOPED TO ASSESS MODELS OF PERSONALITY

Instruments have been developed to test the Five Factor Model of personality. Among the most notable of these is the NEO-PI of Costa and McCrae (1985). NEO is an acronym for N - neuroticism, E - extraversion and O - openness, which are three of five domains. The other domains are A - agreeableness and C - conscientiousness. (Costa and McCrae, 1992a). Costa and McCrae (1992b) have described a revised version of the NEO-PI or NEO-PI-R. Costa and McCrae (1992c) have emphasized that the five-factor model should not be identified with any of its operationalizations, such as the NEO-PI which they developed in order to measure the five-factor model. The five factor model is an evolving scientific construct of the domains of personality.

Instruments have also been developed to assess postulated temperament dimensions. Eysenck and Eysenck (1975) described the Eysenck Personality Questionnaire. Tellegen (1985) described the Multidimensional Personality Questionnaire. Cloninger et al (1991) initially developed the Tridimensional Personality Questionnaire to assess their dimensions of temperament. This model of temperament

originally described by Cloninger in 1987, has recently been revised (Cloninger et al, 1993). In keeping with these refinements of their model of personality, these investigators developed the Temperament and Character Inventory (Cloninger et al, 1993; Cloninger et al, 1994).

Ben-Porath and Waller (1992) have outlined the basic tasks for personality inventories in clinical assessment. They have stressed the importance of validity scales to assess whether the individual understood the test items or whether he or she attempted to portray himself or herself in a favorable or extreme way. They have also written that a personality test should be a source of information to formulate and test a diagnostic hypothesis. These authors noted that a personality test should also provide a description of current level of adjustment and stable personality patterns. They concluded that a personality test should also provide information for treatment.

Costa and McCrae (1992) argued that although the NEO-PI was developed for the assessment of "normal" personality (and it was developed in nonclinical populations), the NEO-PI could nevertheless help clinicians to understand patients, formulate diagnoses, establish rapport, develop insight, anticipate the course of therapy and select the optimal form of treatment for the patient. Ben-porath and Waller (1992) wrote that the NEO-PI did not provide information

about protocol validity. They emphasized that validity needed to be evaluated in each individual to whom the test was administered. The NEO-PI aggregated anxiety, depression and impulsiveness in the domain of neuroticism. Ben-porath and Waller (1992) found this aggregation aberrant and expressed concern about the construct validity of the instrument's scale of Neuroticism. They also noted that the NEO-PI identified stable personality patterns but was insensitive to state fluctuations and this included scores for measures of anxiety and depression. Ben-Porath and Waller (1992) wrote that the NEO-PI had not been shown to have treatment implications.

DIMENSIONS OF PERSONALITY AND PERSONALITY DISORDER

These concerns about the validity of the NEO-PI as a clinical test (Ben-Porath and Waller, 1992) have arisen despite some reports of high correlation with DSM-III personality disorder categories. Schroeder et al (1992) examined the convergence of the five factor model and DSM-III personality disorders (APA, 1980). They found that although there were substantial relationships between the Big Five model and personality disorders, the more behavioral aspects of the personality disorders were not related to the five factor model.

Trull (1992) reported significant correlations between DSM-

III-R personality disorders as assessed by patient self-report using the Personality Diagnostic Questionnaire - Revised, PDQ-R (Hyer and Rieder, 1987), the Minnesota Multiphasic Personality Inventory Personality Disorder scales, MMPI-PD (Morey et al, 1985) and the NEO-PI. Trull (1992) also noted that there were minor variations in the correlations between the NEO-PI factors and the different instruments which he used in his study to assess personality disorder. He concluded that different patterns of association could be obtained using alternative instruments to describe Axis II. Despite these findings there is limited information available to indicate how the NEO-PI is to be used in a differential diagnosis of personality disorder. Cloninger et al (1994) on the other hand have described how the Temperament and Character Inventory can be used as a screen to determine the presence of personality disorder.

Neuroticism is one of the five domains of personality which the NEO-PI measures. This domain includes measures of a predisposition to experience anxiety, depression as well as a tendency towards impulsivity. Cloninger (1994) expressed concern about possibly confounding axis II pathology with mental state or axis I disorders by the personality factor of neuroticism. He noted that this factor could not distinguish personality disorder from other axis I disorders. It should be noted however, that Livesley et al

(1994) have described the arbitrariness of the separation of axis I disorders from the axis II disorders and have suggested that the features of Axis I disorders could arise from underlying traits in the same way that personality disorders could.

Schroeder et al (1992), demonstrated that the neuroticism factor of the NEO-PI had the strongest relationship with DSM-III-R personality disorders. Similarly Trull (1992) reported that neuroticism seemed to be characteristic of most of the personality disorders.

Originally Cloninger et al (1991) developed the Tridimensional Questionnaire to measure the temperamental factors of novelty seeking, harm avoidance and reward dependence. He has recently reviewed his model of personality and extended it to include seven factors, (Cloninger et al, 1993). The three new character factors which he describes are cooperativeness, self-directedness and self-transcendence. Persistence, which had previously been assessed as a facet of reward dependence, but which was later shown to be independently heritable, is the fourth temperamental factor.

According to Cloninger (1987), the three temperamental factors, reward dependence, harm avoidance and novelty seeking differentiate between the different categories of

personality disorder. However, in order to diagnose personality disorder other character dimensions of self-directedness and cooperativeness are required. Svrakic et al (1993) have shown that patients with personality disorder are low in self-directedness and low in cooperativeness.

Cloninger's theory is a major advance in the dimensional description of personality and personality disorder and attempts to bridge the gap between a dimensional and a categorical description of personality. This theory goes beyond the descriptive approach to personality of the Five Factor Model. Cloninger's theory also provides a biological framework for personality. Heath and colleagues (1994) have described the genetic heritability of these temperamental factors and Cloninger et al (1993) have described how these temperamental factors are linked to variation in monoaminergic neurotransmission.

The Temperament and Character Inventory -TCI- was designed for use in clinical populations. Unlike the NEO-PI the TCI does have validity scale checks (Cloninger et al, 1994) and it is sensitive to state changes. Its harm avoidance axis has been shown to be sensitive to the effects of mood state and its temperament dimensions have been shown to have implications for treatment. Joyce et al (1994) showed, in a group of patients who had major depression, that

temperament as measured by the TPQ, accounted for more variance in treatment outcome than clinical variables.

DIMENSIONS OF PERSONALITY AND SUICIDAL BEHAVIOR

There have been some efforts to describe the association between personality and suicide attempts by means of dimensional assessments of personality differences rather than categorical diagnoses of personality disorders. Many different personality inventories have been used in the psychological assessment of parasuicide patients. Vinoda (1966), one of the early researchers in this area, reported that parasuicide patients scored very high on the General Hostility component of the Hostility and Direction of Hostility Questionnaire (Caine, Foulds and Hope, 1967). On the Direction of Hostility these patients were more intropunitive. This data was later re-analyzed by Foulds (1967) who used a scale of Character Disorder derived from the Symptom Sign Inventory, SSI, (Foulds and Hope, 1968).

Foulds (1967) found that 39% of Vinoda's attempted suicides had "character disorders" and that 52% were "personally ill." The Personal Disturbance Scale is a measure derived from the SSI and measures the patient's self-report of his/her illness status and it contains only items that refer to symptoms and signs of neurotic and psychotic illness (Foulds, 1962). Murthy (1969) reported lower verbal

IQ and greater hysteroid scores as well as extrapunitive hostility among non-serious suicide attempters. Serious suicide attempters in this study were more obsessoid and more intropunitive. These observations have not been confirmed by subsequent investigators. Casey (1989) could not confirm a link between obessionalism or more specifically anankastic personality disorder and serious suicide attempts.

Phillip and McCulloch (1968) using the same scales of the SSI found that 59% of their women attempted suicides had character disorders and 33% were personally ill. Phillip (1970) in an investigation of the association of personality traits with suicide attempts found that an SSI diagnosis of character disorder occurred in almost half of his sample and at twice the frequency that it occurred in psychiatric populations and that suicide attempters were more hostile, more anxious, more introverted and less conscientious on average but concluded that there was no unique "suicidal personality".

The scope for the psychological assessment of suicide attempters has become wider since Lester's (1970) review of the utility of personality measures in the study of suicidal behavior. Lester (1970) reviewed studies which used psychological tests to predict suicidal risk and concluded that tests available till then, had not been

fruitful.

Pallis and Birtchnell (1976) used the MMPI - Minnesota Multiphasic Personality Inventory - in an investigation of personality and suicidal history. These investigators showed that suicide attempters were more inclined to be hostile, sociopathic and prone to depression. The hysteria scale of the MMPI failed to distinguish between suicide attempters and nonsuicidal controls. Pallis and Birtchnell (1977) also demonstrated that non-serious suicide attempters were more deviant and showed higher scores on the dependency, hostility and unconventionality scales of the MMPI. Male suicide attempters in this study were shown to have the most disturbed personality profile.

Goldney (1982) described the association of external locus of control - the extent to which patients consider the outcomes of their behavior to be due to chance or other people - with suicide attempts. Mehrabian and Weinstein (1985) showed that suicide attempters have temperamental attributes of neuroticism or trait anxiety. Banki and Arato (1983) used the Mark-Nyman Temperament Scale based on Sjöbring's (1973) theory of personality and showed that validity was lower and stability was higher in suicidal patients and that these findings were more pronounced in their violent subgroup of suicide attempters.

Sjöbring (1973) wrote that validity corresponded to energy resources and efficiency, solidity referred to steadiness and lack of changeability and stability to abstraction and emotional distance. Stability corresponded with introversion and solidity with impulsivity or monotony avoidance and validity had some relationship with Eysenck's neuroticism. Cerebrospinal 5-hydroxyindoleacetic acid in the study of Banki and Arato (1983) was shown to have an inverse correlation with validity. These investigators speculated that a central serotonergic hypofunction and low energy output (validity) were risk factors for suicide.

Markar et al (1991) used the Schizotypy Questionnaire of Claridge and Brocks (1984) to assess borderline and schizotypal personality disorder traits in a group of parasuicide patients. These investigators found that presence of schizotypal personality disorder predicted borderline symptoms but a high frequency of borderline personality disorder symptoms could not predict schizotypal personality disorder symptoms.

They concluded that schizotypal symptoms represented a more severe tendency towards disintegration and was higher than borderline personality disorder in a hierarchy and if present almost always implied borderline symptoms such as unstable relationships, difficulty in regulating affect and unstable relationships. They noted that it was important to

assess internal sources of stress rather than just external stressors such as life events and chronic difficulties. This internal stress or aberrant perception which arose from such experiences as sixth sense, magical ideation and ideas of reference could contribute to a suicide attempt.

Botsis et al (1994) have found that suicidal patients used mature coping styles less frequently than psychiatric controls and that suicide and violence risk were predicted by coping styles of minimization, replacement and blame as measured by the Albert Einstein College of Medicine Coping Style Questionnaire (Plutchik and Conte, 1989). Botsis et al (1994) suggested that suicidal patients have inadequate mental resources to deal with life problems.

Benjaminsen et al (1990) investigated personality characteristics in a group of suicide attempters, psychiatric and normal controls. These investigators found that there were significant differences on several personality dimensions between suicide attempters and normal controls. Suicide attempters scored higher on the neuroticism score and were more introverted. Few dimensions however discriminated between suicide attempters and psychiatric controls: suicide attempters had lower hysteroid scores and lower scores for neuroticism. These investigators used the Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975) and the Lazare-Klerman-Armor

Trait Scale (Lazare et al, 1966). These investigators also noted that their findings suggested that there was little to be gained from continued efforts to find personality features that were specific to suicide attempters by means of psychometric tests.

Benjaminsen et al (1990) did not account for the possible confounding of personality measures by the effects of the patients' mental state when comparing these parasuicidal patients to psychiatric controls. This may have led to an underestimation of personality differences between patients with or without a history of suicidal attempts. It has been well documented that dimensional scores on personality inventories are affected by anxiety and depression, (Strakowski et al, 1992; Svrakic et al, 1992; Pilowsky, 1979).

There have been major developments in the psychometric assessment of personality since the work of Benjaminsen et al (1990). These developments in the assessment of personality allow for the further evaluation of the contribution of personality to suicidal behavior. Cloninger et al (1994) have subsequently described their psychobiological model of temperament and character. Benjaminsen et al (1990) used the EPQ, which is not as comprehensive as the seven-factor model described by Cloninger et al (1994). The possible contribution of

personality dimensions to repetitive suicidal behavior was also not examined in Benjaminsen's study.

Hardly any information is available of the relationship of personality dimensions to repetition of parasuicide. Ashton et al (1994) reported that patients with multiple episodes of deliberate self-harm had higher psychoticism scores and lower extraversion scores than controls. Lower extraversion scores distinguished patients with multiple episodes from patients with only a single episode of self-harm.

Markar et al (1991) noted that in order to understand the chronic repeater the disturbance in the context of the whole personality needed to be understood. Sakinofsky et al (1990) found that resolution of psychosocial difficulties did not affect the rate of repeat suicide attempts in a three month follow-up study. Sakinofsky and Roberts (1990) found that their patients, who made repeat suicide attempts, were characterized by normlessness, an inability to tolerate frustration and had greater powerlessness among other discriminating sociodemographic characteristics.

The relationship of the personality dimensions of the psychobiological model of temperament and character (Cloninger et al, 1993) to repeat suicide attempts has not been described. Brent et al (1993), using the TPQ or tridimensional personality questionnaire showed that

adolescent suicide attempters were higher than controls in Harm Avoidance and were more likely to show evidence of personality disorder, particularly those of the borderline type.

The relationship of these findings to repetition of suicidal behavior was not explored by Brent et al (1993). The dimensions of character (described by Cloninger et al, 1993, in their revised model) and their association with suicidal behavior was also not assessed in that study. It is postulated in the present study, that there are differences in these personality dimensions in patients who repeat parasuicide when the effects of mental state are taken into account.

Mann and Arango (1992) have described a stress-diathesis model that classified risk factors for suicidal behavior into trait- and state-dependent factors. These authors noted that biological correlates of suicidal behavior were either state- or trait-dependent. They have emphasized that the differences in serotonin metabolism which have been noted in patients with suicidal behavior were constitutional or trait related risk factors. It is important to distinguish between state and trait risk factors when describing the role of personality in repetitive suicidal behavior.

Chapter 9.Depression, Suicidal Ideation, Suicide Intent and Lethality
as well as Self-esteem in Parasuicide.

THE CONFLICTUAL ROLE OF DEPRESSION IN PARASUICIDE

Most studies have shown that a large proportion of parasuicidal patients have moderate to severe depression when inventories are used to measure depression. Lower rates of depressive disorders are found in these same cohorts when diagnostic criteria have been used. Ennis et al (1989) have shown that clinical DSM-III diagnoses provided a more accurate estimate of the frequency of affective disorders in a self-harm population. These investigators noted that most patients were moderately or severely depressed on the Beck Depression Inventory but that only a minority had a depressive illness according to DSM-III criteria.

They also reported a significant drop in -BDI- Beck Depression Inventory scores five days after admission. Their estimate of a 31% point prevalence of DSM-III defined major depression in deliberate self-harm patients has been challenged by Théret and Pascalis (1989) who found a point prevalence of 58% of major depression using DSM-III-R criteria. Montgomery and Montgomery (1983) also described that psychiatric illness accounted for 40% of suicide

attempt admissions and that most patients had personality disorders. These authors noted that there could be a biological basis to suicidal behavior in patients without depression.

Davis (1990) also showed a significant reduction in the severity of depression measures over one week. Newson-Smith and Hirsch (1979) reported a similar large reduction in symptoms of distress within seven days of self-poisoning using the General Health Questionnaire -GHQ- (Goldberg, 1972) and Present State Examination -PSE- (Wing et al, 1974). Both the BDI (Beck et al) and GHQ were developed as symptom inventories and not as diagnostic instruments. Ennis et al (1989) recommended that depression should be diagnosed in self-harm patients by using diagnostic systems such as DSM-III rather than symptom inventories. The presence of acute severe depressive symptoms did not necessarily imply a diagnosis of depressive illness. In South Africa, Schlebusch (1986) using DSM-III criteria did not find that any of his parasuicide patients had a major depression or bipolar affective disorder.

DEPRESSION, SUICIDAL IDEATION AND SUICIDE ATTEMPTS

Conflicting views have been expressed about whether there is a continuum from suicidal ideation through suicide attempts to completed suicide and also about the correlates

of suicidal ideation. Brent (1986) suggested that there was a hierarchy of suicidal ideation from nonspecific thoughts of death without intent to more specific thoughts with suicidal intent and that suicidal ideation and suicidal behavior are continuous phenomena in psychiatrically referred populations.

Paykel (1974) has reported similar findings in a general population study and found a continuum of suicidal feelings. Cantor (1976) found evidence of a quantitative relationship between the frequency of suicidal thought and the likelihood of attempted suicide. Vandivort and Locke (1979) found evidence in the general population of an association between depression and suicidal ideation but suggested that there were a number of factors which determined whether someone would act on their suicidal thoughts and also found that a large proportion of patients who reported suicidal ideation did not have depression. Paluszney et al (1991) found evidence among a group of adolescent suicide ideators, suicide attempters and controls that the characteristics of the ideator group was intermediate between the control and attempter group in terms of chaotic families, depression and behavior problems. Other investigators have reported inconclusive findings for the association of suicidal ideation and suicide attempts.

Goldney et al (1991) described the enduring nature of suicidal ideation and its associated morbidity of poor self-esteem and depression but they did not find evidence that the screening of children could possibly predict those who would attempt suicide. Flisher et al (1992) found in an epidemiological study of risk taking behavior among Cape Peninsula high school students that in many cases of suicide attempts there was no continuity from suicidal ideation through communication of suicidal intent to an actual attempt. Flisher et al (1992) did however report that 85% of those who made suicide attempts had thought about it seriously. Pearce and Martin (1994) found in a study at a high school that suicide ideation was associated with attempted suicide.

OTHER CORRELATES OF SUICIDAL IDEATION

Fawcett et al (1990) have demonstrated that suicidal ideation was associated with long term risk of completed suicide within a year in a group of patients with major depression. These investigators also noted that short term risks for suicide were different from long-term risks for completed suicide. Friedman et al (1992) found that symptoms of borderline personality disorder - affective instability, self-destructive behavior (other than suicide attempts) and a perception of life as chaotic and empty were predictive of suicidal ideation. These investigators

concluded that suicidal behavior in panic disorder patients was best explained either by other axis 1 pathology and/or borderline personality disorder.

Other correlates of suicidal ideation reported in adolescents include drug abuse, depression and hopelessness as well as stress, social support, psychological distress and poor interpersonal communication (Howard-Pitney et al, 1992). Suicidal thoughts have also been linked to parental rejection during development and a lack of self-esteem (Ross et al, 1983). In their study of the correlates of suicidal ideation and parental rearing among university students, Ross et al (1983) also showed that those students who reported higher levels of suicidal ideation had significantly higher psychoticism and neuroticism scores on the Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975).

Linehan et al (1991) found that although cognitive-behavioral treatment caused a significant reduction in the repetition of parasuicide during the first year of treatment, it did not appear to have an effect on measures of depression, hopelessness nor suicidal ideation. In that study, this benefit however was not maintained and at 18- to 24-months, there were no differences in the parasuicidal behavior of patients exposed to dialectical behavior therapy and treatment as usual.

The relationship of acute and transient increases in the intensity of suicidal ideation (which may reflect an underlying trait vulnerability) to repeat parasuicidal behavior needs further investigation. Mehlum et al (1994) suggested that suicidal ideation was enduring in patients with borderline personality disorder and that it did not seem to be related to episodic Axis I mood disorders but was more related to character. Adam et al (1983) in their follow-up study of attempted suicide reported that persistence of suicidal ideation and repeat attempts were correlated with the diagnosis of psychosis and personality disorder. These investigators did not further subcategorize personality disorder which was made by clinical assessment only.

Diekstra and Gulbinat (1993) have noted that it is difficult to compare the results across studies. The period of enquiry varied substantially between studies from lifetime prevalence of suicidal ideation to suicidal ideation in the recent past. Marked differences in rates of suicidal ideation have been noted by these investigators. These result from differences in the definition of suicidal ideation and differences in the period of reference.

SUICIDE INTENT AND REPETITION OF PARASUICIDE

Beck et al, (1974) have shown that patients who reattempted

suicide within one year had significantly higher scores than those who did not reattempt. Pierce (1981) noted, in a follow-up study of a cohort of patients who presented after parasuicide, that high intent together with a high rate of repetition eventually predicted some suicides. Beck et al, (1985) found that hopelessness was a more important variable in predicting eventual suicide.

Although suicide intent was demonstrated to have a significant correlation with depression (Silver et al, 1971), Beck et al (1975b) showed that hopelessness accounted for most of the association between depression and suicide intent. Brittlebank et al (1990) did not find an association between hopelessness and suicidal intent. These investigators found a significant correlation between hopelessness and intropunitive hostility. They noted that this may have been an artifact of methodological differences in their study. Dyer and Kreitman (1984), who replicated the findings of the Beck et al (1975a) study, emphasized that the patient should be asked to reconstruct their level of intent before the attempt and not what it was when they were examined as was done in the study of Brittlebank et al (1990).

This study attempts to control for levels of suicide intent in this heterogenous group of patients and also to determine the importance of suicide intent as a predictor

of repeat suicide attempts. It is important to describe the degree of suicidal intent in those patients who are at risk of eventual suicide. Stengel and Cook (1958) emphasized a long time ago, that patients who attempt suicide and those who commit suicide come from different populations and that the risk factors described for one behavior can not easily be used to describe patients at risk for the other behavior. These investigators noted that suicide intent and lethality needed to be rated separately.

LETHALITY, SUICIDE INTENT AND REPETITION OF SUICIDAL BEHAVIOR

Faberow (1950) and Stengel and Cook (1958) emphasized that suicide intent (or the wish to die) had to be distinguished from medical lethality (or seriousness of the physical consequences of self-injury). Power et al (1985) and Goldney (1981), although noting a relationship between medical lethality and suicidal intent, cautioned that medical lethality was only a useful guide to the patients degree of suicidal intent and that all attempts should be taken seriously. Suokas and Lönnqvist (1991) reported that moderate to serious lethality and severe intention to die at index suicide attempt - were predictive of later suicide. Beck et al (1975b) showed that suicidal intent correlated with lethality only when the attempter had sufficient knowledge to assess the outcome of his or her

attempt.

Weissman and Worden (1972) described a risk-rescue rating instrument of lethality. Risk, according to these authors, referred to the method used and the actual damage sustained during an attempt rather than to the probability of future suicidal behavior. Rescue referred to the circumstances and resources present at the time of the attempt. The risk to rescue ratio gave an estimation of the probability of inflicting irreversible damage from an attempt. Weissman and Worden (1972) distinguished between their risk-rescue rating measure of lethality (or lethal implementation) and other measures of lethality namely, lethal intentionality and lethal involvement while engaging in life threatening behavior. They felt that suicide prognosis was a summation of these different kinds of lethality.

Brent et al (1987) reported similar findings to Beck et al (1975a) and using the risk-rescue assessment showed that in impulsive suicide attempts the availability of a lethal weapon was the most significant predictor of the lethality of a suicide attempt while suicide intent and severity of psychopathology accounted for most of the variance in lethality in hopeless dysphoric individuals. Van Aalst et al (1992) reported on a cohort of patients who had made unsuccessful violent suicide attempts (or potentially very lethal attempts) and found a low rate of repeat suicide

attempts - 7% in this group, and more severe injury at index episode did not appear to influence repeat suicide attempts. These investigators felt that the serious nature of the index episode either mobilized support networks or the seriousness of the patient's injuries were a reminder to the patient of what in life was important.

Mehrabian and Weinstein (1985) described neuroticism or trait anxiety in suicide attempters when compared to the general population and also found a correlation between lethality of a suicide attempt and trait arousability.

The measurement of suicide intent has been demonstrated to have greater prognostic implications than measurement of the lethality of a suicide attempt. The relative contribution of suicide intent as a risk factor needs to be assessed in this group of patients who make repeat suicide attempts. Ashton et al (1994) showed that patients who presented with multiple episodes of deliberate self-harm had significantly higher levels of suicide intent and higher hopelessness scores.

SELF-ESTEEM AND PARASUICIDE

Rutter (1985) described how people with good self-esteem were less likely to develop psychiatric distress when faced with stressful life events. Roy et al (1995) noted that

individuals who have high self-esteem tend to be optimistic when faced with adversity and have a better sense of control over their lives.

Self-image was described by Rosenberg (1965) as an attitude toward the self and consisted of "...facts, opinions, and values with regard to the self, as well as a favorable or unfavorable orientation toward the self." In order to measure these attitudes towards the self, or self-esteem, Rosenberg developed the Self-Esteem Scale (1965).

Roy et al (1995) noted in their review that self-esteem has been linked to unemployment, lack of social support, early parental loss and rearing patterns characterized by lack of parental acceptance, inability to set limits and parental conflict. Roy et al (1995) reported that in addition to the psychosocial determinants of self-esteem genetic factors were also important and found evidence in a twin study that 52% of the variance in self-esteem could be accounted for by genetic factors and was a relatively stable trait. Roy et al (1995) however noted that it was unlikely that genes would be found which directly influenced self-esteem and suggested that a either a tendency to dysphoria was inherited or there was an interaction of some temperamental feature such as neuroticism with the environment and this introjection of poor social support mediated the heritability of poor self-esteem.

Freud (1917) and other psychoanalysts have postulated that suicide attempts reflected an internalization of aggressive impulses. It would seem that patients who make suicide attempts have a lot of self-hatred and negative attitudes to the self with resultant poor self-esteem. Farmer (1987) linked intropunitiveness and depressive states in parasuicidal individuals. Goldberg and Sakinofsky (1988) demonstrated that highly intropunitive individuals who presented with parasuicide had a marked improvement of their depression when exposed to a cognitive interview which challenged the patients suicidal attitudes and beliefs.

This study postulates that patients who make repeat suicide attempts have poorer self-esteem and have more self-critical attitudes towards themselves. Brittelbank et al (1990) showed in their study that hopelessness and intropunitive hostility - an excessive self-critical attitude - was higher in patients who repeated deliberate self-harm and suggested that intropunitive hostility could possibly predict those who were at risk for further self-harm.

Chapter 10.Life Events, Social Support and Parasuicide.

METHODOLOGICAL ISSUES IN LIFE EVENT RESEARCH

Paykel (1983, 1994) has described some of the methodological issues in the measurement of life events and social support. He has stressed the importance of reliability and the need to distinguish objective reality from individual perceptions. Depressed patients might have a tendency to report greater numbers of life events and to also report more dissatisfaction with social supports. He also noted that life events were not necessarily externally engendered but could be caused by illness, personality, life style and genetic elements. He noted that it was important to judge the independence of events and illness and to confine attention to occurrences preceding symptom onset.

Alloway and Bebbington (1987) in their review noted that there was good evidence to suggest that the most important period for developing affective symptoms was within three months of the advent of the life event. Life events recorded over longer periods reflected aspects of life-style. They recommend that assessment should not exceed six months preceding the development of symptoms.

INSTRUMENTS TO MEASURE LIFE EVENTS.

Two approaches have developed for the assessment of life event stress. There is the life events inventory technique and examples include that of Paykel et al (1971) and Holmes and Rahe (1967). Inventories have been used since the original work of Holmes and Rahe (1967). This inventory of Holmes and Rahe (1967) - The Schedule of Recent Experiences - was based on the assumption that life changes were themselves stressful regardless of the desirability of the events and both desirable and undesirable life events were included in the life stress score. Measurement of change on this inventory was also determined in terms of group norms and thus the inventory could not accurately reflect the impact that events had on particular individuals.

Brown and Harris (1978) developed a second approach which is more time consuming but has some advantages over the inventory technique. This was an attempt to provide a more objective assessment of the impact of life events. Brown and Harris (1978) described the -LEDS-, or Life Events and Difficulties Interview Schedule. The method of Brown and Harris (1978) includes the assessment of the contextual threat or rating of the impact of the life event or threat independently of the patient's mental state by the consensus of a team of raters. These raters are provided with social and demographic details as well as a detailed

description of the life event in the individual's social context. This avoids contamination of the independent variable or threat of life events with the dependent variable or psychological state of the individual. It also eliminates the systematic bias which could appear if only one rater is used. The reliability and validity of this technique has also been documented to some extent by Brown and Harris (1978) and has been further examined by Tennant et al (1979) who reported satisfactory reliability and that inexperienced raters achieved highly reliable ratings only after brief training.

The work of Brown and Harris (1978) suggested that it was only events rated as having moderate or marked long term contextual threat which were associated with the onset of depression. The List of Threatening Experiences (Brugha et al, 1985) was derived from a series of life events collected in an epidemiological survey of the general population in Camberwell (Bebbington et al, 1981). In that study (Bebbington et al, 1981) life events were rated in terms of moderate or marked long term threat according to the methods of Brown and Harris (1978). Brugha et al (1985) showed that a substantial proportion of stressfulness in a general population study was accounted for by a small group of severe life events such as serious illness, injury or death and major losses. Rey et al (1988) suggested that short schedules of severe events would be more useful in

clinical settings than longer inventories which included minor stressors.

The method of Brown and Harris did not entirely solve the problem of obtaining objective measures of life events and criticism of Brown's method has focussed on the emphasis placed on the contextual threat of life events by these investigators. Dohrenwend et al (1992) have described how Brown's original approach involved collapsing in non-explicit ways situational and personal variables that could be important risk factors in their single life event measure of contextual threat. Brown et al (1995) have recently described a development of their LEDS approach. This refined measure includes assessment of loss and danger as well as those feelings of humiliation and being trapped following a threatening event.

Dohrenwend et al (1992) have developed the Structured Event Probe and Narrative method -SEPRATE - for measuring stressful life events. Unlike Brown and Harris' approach, Dohrenwend et al (1992) exclude consideration of the stressful characteristics of the ongoing situation and the nature of the personal disposition in ratings of stress-inducing event characteristics. The magnitude of change is assessed normatively (how the average person would experience the situation) rather than in terms of contextual threat.

Rey et al (1988) also expressed concern about the method of Brown and Harris (1978). They noted that raters coming from diverse cultural backgrounds might have themselves perceived different events as having different degrees of stressfulness. Swartz et al (1983) noted that in their study of life events among Xhosa individuals in Cape Town that their respondents did not give a high impact rating to marital separation, divorce or death of a spouse. They noted that this could have been due to the emphasis on a communal culture rather than on a nuclear family among traditional Xhosa speaking people. It must be noted however that this study was done over a decade ago and a great deal of urbanization with consequent change in cultural values has taken place since then and those findings may no longer hold true for the Xhosa community in Cape Town today.

The LEDS requires special interviewer training and the SEPRATE technique requires a panel of raters. These methods were beyond the scope of the current study. The simpler List of Threatening Events (Brugha et al, 1985) - with documented reliability and validity and only focussing on events with long-term threat - was chosen to investigate the role of life events in the repetition of parasuicide.

LIFE EVENTS AND SUICIDE ATTEMPTS

The importance of life events in patients who make suicide

attempts has been described by Paykel et al (1975). These investigators showed that suicide attempters experienced a significant excess of life events as well as a substantial peaking of events in the month before the attempt. Paykel et al (1975) used two control groups: a group of depressed patients and normal population controls. Slater and Depue (1981) found methodological difficulties in the Paykel et al (1975) study.

Slater and Depue (1981) investigated the contribution of life events to serious suicide attempts in patients with primary depressive disorder and reported that the diagnostic composition of the suicide attempter and the control groups in the Paykel et al (1975) study was not known and that it was difficult to assess the proportion of the sample which had a primary depressive illness. They also noted that the group of suicide attempters which Paykel et al (1975) studied was a group of primarily young females who made attempts with low lethality.

Slater and Depue (1981) used explicit diagnostic criteria in order to establish primary depressive diagnoses and used a nonsuicidal primary depressive control group as well as a specific measure for the seriousness of the suicide attempt. They found, similarly to Paykel et al (1975), that there was a significant excess of independent life events in their group of primary depressive patients who made

suicide attempts as well as a high density of events between onset of depressive disorder and suicide attempt.

Farmer and Creed (1989) were not able to confirm these findings of Slater and Depue that there was an excess of life events after the onset of depression. Farmer and Creed (1989) found that life events as a whole were experienced at a similar rate by the self-poisoners in their study but that self-poisoners had a higher exposure to more severe life events. Adams et al (1994) reported similar results in adolescent suicide attempters. These investigators found that adolescent suicide attempters experienced elevated levels of major negative and exit events when compared to high school controls. Chronic strains were found by these investigators to be related to an increase in the severity of depression and not suicide attempts.

Adam et al (1994) stressed that the role of possible modifiers of chronic strain and life events such as social support, personality style and coping skills in suicide attempters needed further research. Farmer and Creed (1989) also found in their study of life events and self-poisoning that greater numbers of life events were found in those patients who were high in extrapunitive behavior. The role of life events in patients who repeat their suicidal behavior requires further exploration as this was not explored in any of the studies which have been previously described.

This study controls for and examines the role of social support, personality characteristics and self-esteem in modifying the response to adverse circumstances.

DEFINITION OF SOCIAL SUPPORT

House and Kahn (1985), Cohen (1988) and Gallo (1990) suggested that social support could be considered in terms of: (1) social network - the structure and sources of relationship around the individual, (2) social integration or social relationship measures - the number, density and range of relationships available, and (3) the function of or content of supportive acts. The functional aspects of support include: (a) emotional support - trust, concern, listening, appraisal, affirmation, feedback; (b) informational support - advice, suggestion, and (c) instrumental support - aid, time, modification of the environment.

Kong et al (1993) also suggested that social support was best understood as a metaconstruct referring to three subsidiary constructs: social network resources, supportive behaviors and subjective appraisals of support. Gallo (1990) emphasized that a global index of social support was an oversimplification of a complex construct and there was no reference standard of what constituted good or adequate support.

METHODOLOGICAL ISSUES IN THE MEASUREMENT OF SOCIAL SUPPORT

Dooley (1985) noted that most social support research was correlational and noted that this design was subject to major biases in the analysis and interpretation of data. Dooley emphasized the difficulties associated with the establishment of the direction of causality in cross-sectional studies and that other uncontrolled factors in these studies could confound the relationship of social support and health. He also emphasized the importance of multivariate analysis to control this confounding and suggested panel longitudinal designs to control for the direction of causality. Kiesler (1985) noted in general the inadequacy of social support data for a policy analysis. It was not clear from the literature which described the main effect and the buffering effect of social support that any positive effects would accrue as a result of increasing social support.

Social support has been described as a moderating factor or "buffer" in adversity, (Cohen & Willis, 1985). The buffer theory of social support postulates that social support interacts with adverse circumstances to change the impact of adversity. There is evidence in the literature to suggest that this buffering effect only applies to patients who have an external locus of control and who lack a sense of control over their own lives. Dalgard et al (1995)

emphasized the importance of taking individual, interpersonal and social resources into account when assessing the individuals risk of developing mental disorder.

The buffer theory of social support contrasts with a "main effects model" in which social support independently of adversity influences health outcome measures. Alloway and Bebbington (1987) in a literature review of the buffer theory of social support found that evidence for a buffering role of social support was inconsistent. Alloway and Bebbington (1987) in their review noted that it was not possible to establish the direction of causality in a cross-sectional study and emphasized the importance of a panel design.

Bloom (1990) noted that social support could be a primary coping resource or could interact with the individuals coping response and the indirect effects of social support were mediated through one's style of coping. Gore (1985) emphasized that the question of a stress-buffering effect of social support was contingent upon whether support was mobilized and not whether it existed as a potential. Gore (1985) emphasized the assessment of coping activity as a personality trait in the mobilization of social support.

Many investigators have emphasized the importance of

patient satisfaction with support (Fiore et al, 1986) and have stressed the importance of the subjective components of social support as predictors of depression (George et al, 1989). Fiore et al (1986) as well as George et al (1989) found little evidence to suggest that depression had confounded their subjective measures of social support. Hendersen (1984) had previously suggested that subjective measures of social support were confounded or contaminated by depressed affect.

Other investigators have also found that social support was itself affected by adversity. Kong et al (1993) have shown that perceived social support is not necessarily a stable characteristic of the subject's environment. These investigators documented the changes in perceived social support which could result from unemployment. They noted that it was a questionable assumption that social support was stable. It was also questionable whether life events and social supports were independent of each other. These assumptions contributed to inconsistency in the research findings of the stress-buffering hypothesis.

Kong et al (1993) could not find evidence that life events (continuous job loss in their study) and social support were independent of each other. Their results showed a lessening of perceived social support as economic distress increased with ongoing unemployment and noted that social

support from friends and relatives could be eroded through a community climate of insecurity and the threat of job loss.

INSTRUMENTS TO MEASURE SOCIAL SUPPORT

Many instruments have been described to measure social support and these have placed different emphases on the aspects of social support which have been previously described. Orth-Gomér and Undén (1987) reviewed the measurement of social support in population surveys. They reported that there were two distinct groups of instruments - one group described the quantitative, structural aspects of social network and social interaction and another group described the function and adequacy of social support. Orth-Gomér and Undén noted that the former group of instruments had been found to predict physical illness in prospective studies but that their psychometric properties of reliability and validity were not well documented. This contrasted with instruments which focussed on the functional aspects of social support in which psychometric properties were documented but which sometimes included questions which were not universally applicable to a general population. The illness predictive capacity of this last group of instruments has been less effectively documented.

Most social support instruments attempt to describe some function of the multidimensional aspects of social support such as emotional, instrumental and informational support. The majority of structural as well as functional instruments attempt to describe qualitative aspects of social function but a few place relatively little emphasis on function and quality.

Structural instruments tend to be relatively brief and they describe the size and structure of the network, the frequency of interaction and participation in formal and informal groups. Orth-Gomér and Undén (1987) noted that the Sarason social support questionnaire (Sarason et al, 1983) - like other functional instruments - was also significantly correlated with a depressive psychological profile. They emphasized the importance of controlling for this and other personality factors when assessing the role of social support.

Different constructs of social support may lead to different results. Davidson et al (1993) investigated the epidemiology of social phobia and used a composite measure of social support which included an assessment of social network size, social interaction, perceived social support and instrumental support. These investigators found that social phobics were significantly less likely to report unimpaired subjective social support and unimpaired

instrumental support. However, the social phobics were not significantly different from community controls in terms of social network nor social interaction.

Gallo (1990) noted a lack of consensus regarding measurement instruments and concepts. Gallo (1990) further noted that the components of social support which are measured are not always identified in research studies. Heitzmann and Kaplan (1988) in their review of instruments for measuring social support noted that the current state of social support measurement was not necessarily bleak as different conceptualizations suggested that several different constructs could be labelled as social support. These conceptual differences dictated that a variety of corresponding measures be available for specific research issues which needed to be addressed.

Sarason et al (1987b) investigated the correlation of different support measures with each other. They found that measures of received support were not strongly related to perceived availability of support measures. They also found that instruments which measured perceived available support generally assessed the extent to which the individual felt loved, accepted and involved in relationships where communication was open. They emphasized that further research was needed to examine the antecedents of adult support networks and that social support was a

developmental personality characteristic rather than an environmental provision.

Sarason et al (1987b) further noted that evidence for a main-effect model of social support was found when support was measured in terms of integration within a social network and evidence for a buffering model of social support was found when support measures assessed specific interpersonal resources. Sarason et al (1985) described how self-perceived social support was correlated with several personality characteristics such as anxiety, hostility and locus of control. These investigators also described the relation of social skills to self-perceived social support. Individuals high and low in social support differed in their knowledge of socially skilled behavior.

Vitaliano (1990) noted that the way in which individuals experienced anger could powerfully influence the way social supports were used. He wrote that people with high levels of expressed anger could have lower levels of support because they judged their relationships harshly, produced tension and conflict in their social environment and emotionally drained potential supports. He suggested further that individuals who were independent might not reach out for help from available support.

Cohen (1988) in his review of psychosocial models of the

relationship between social support and physical disease suggested that social integration and perceived availability of support were predictive of disease and mortality. Rutter (1986) in his review of the literature on personality and life experiences noted that one of the key factors in understanding this relationship was not only the availability of social contacts but also the perceived adequacy of and psychological use made of social support. Rutter (1986) also wrote that it was not clear whether inadequate social support was a function of the individual personality, the environment or the person-environment interaction.

Sarason et al (1983) described the importance of the individual's degree of satisfaction with his social support system. These authors wrote that a persons experience of being loved and accepted provided the most accurate assessment of the construct for social support. They also emphasized that social support was a developmental personality characteristic rather than simply an environmental provision. Both the relative contributions of social network size and patients' satisfaction with social support are assessed in this study.

SOCIAL SUPPORT AND SUICIDAL BEHAVIOR

Durkheim (1951) noted the importance of social context in

order to understand suicidal behavior. Hart et al (1988) examined the relationship of social network and the occurrence of suicidal behavior. They reported significant differences in the availability and extent of support network at entry into the study and also the adequacy of attachments among "psychiatric" suicide attempters (those patients with a psychiatric disorder) when compared to "non-psychiatric" suicide attempters (those patients without a psychiatric disorder) and nonsuicidal controls. Improvement in social network was limited to attempters with no formal psychiatric disorder. The relationship between repeat suicide attempts and social support was not explored in that study.

Öjehagen et al (1991) found evidence that repeaters of deliberate self-poisoning lacked social support. Social support in this study, seems to have been assessed in terms of greater frequency of contact with a significant other by the investigators and reports of fewer relationship conflicts among the nonrepeater group. These researchers do not appear to have used a recognized instrument to assess the patients perception of the availability and satisfaction with social support.

Magne-Ingvar et al (1992) reported in a further investigation of the social network of people who attempted suicide that when using the Interview Schedule for Social

Interaction or ISSI described by Henderson et al (1980) there were no significant differences between repeaters and nonrepeaters on the ISSI. This group of investigators made no attempt to explain these different findings from their original conclusion that repeaters of deliberate self harm lacked social support, (Öjehagen et al, 1991). These differences may be accounted for by their different definitions of social support in the two studies.

Morano and others (1993), using the Social Support Questionnaire, found, in a study of adolescents who made serious suicide attempts, evidence that perceived lack of family support and hopelessness provided evidence for a "stress-vulnerability" model of adolescent suicidal behavior. D'Attilio et al (1992) also found in a sample of adolescents that the variables of the Social Support Questionnaire (Sarason et al, 1983) accounted for more than half of the variance in suicide potential and suggested that those adolescents at greater risk for suicide were significantly less satisfied with the quality of their social support.

In summary the relation of social support and life events to repetition of parasuicide is not well documented. Methodological difficulties in the assessment of both these constructs has been described. Investigators in this area have used different definitions and measures of these

constructs and the confounding effects of personality on both social support and life events has mostly not been taken into consideration. The relation of poor social support and life events to repetition of parasuicide requires further examination in light of the conflicting findings which have been described. This study will therefore take personality variables - self-esteem and personality disorder among others into account when describing the relation of these potential risk factors - to repetition of parasuicide.

PART 11

The Study - Aims and Methods.

Chapter 11.

Summary of the Significance and Objectives of this study as well as the Hypotheses which are examined in this study.

SIGNIFICANCE OF THIS STUDY

No local work has been undertaken to determine the relationship of personality and personality disorder to the repetition of parasuicide. It is not known whether the risk factors described in other studies (which have been mainly done outside of South Africa) for the repetition of parasuicide are characteristic of those patients who are seen at Groote Schuur Hospital and who have a history of previous suicide attempts. Earlier studies have demonstrated that many predictive scales for the repetition of parasuicide are sensitive but that they are not very specific (Bürk et al, 1985). Other workers (Kreitman & Foster, 1991; Siani et al, 1979) have also demonstrated that the efficiency of predictive scales are subject to period or secular effects and cohort effects: they may not work as well in different cohorts of parasuicide patients in different time periods and in different locations. It would be important to determine whether the characteristics of the repeater group described in previous work also describe our patients with a history of multiple suicide attempts.

Many of these studies (e.g. Buglass & Horton, 1974b; Kreitman and Foster, 1991) which developed predictive scales for the repetition of parasuicide have confined themselves to a retrospective examination of easily obtainable sociodemographic descriptors from clinical case records and few studies have collected information prospectively. Ratings of personality disorder in clinical situations tend to be unreliable (see Walton & Presley, 1973) and are especially confounded by the patients' mental state when seen in the emergency unit. Investigators of the relationship of the repetition of parasuicide and personality disorder have generally not used standardized psychiatric interviews or recognized instruments with known psychometric properties to assess for the presence of personality disorder in their studies.

They have also used broad concepts of personality disorder in order to describe the relationship of personality disorder to the repetition of parasuicide. Exceptions to this have been investigations of the role of borderline and antisocial personality disorder, which were examined in a few studies (Garvey & Spoden, 1980; Fyer et al, 1988a; Zannarini et al, 1990). The reliability and validity of many of these findings are questionable and accordingly this study has made use of the recent developments in the classification and assessment of personality disorder in order to further examine the relationship of personality

disorder, while controlling for the presence of other risk factors which have been described for the repetition of parasuicide.

Few studies (Sakinofsky & Roberts, 1990; Ashton et al, 1994) have examined the role of personality dimensions in relation to the repetition of parasuicide. This study also incorporates some of the many new developments in the theory and assessment of personality in order to extend the description of the repetition of parasuicide through these personality dimensions. There are no studies which describe further suicidal behavior in relation to newly described dimensions of character and temperament of the psychobiological model of Cloninger et al (1993).

Few studies have systematically examined the role of social support or adverse life events in the repetition of parasuicide (Öjehagen et al, 1991) nor have they have controlled for confounding effects of personality which would influence both life events and also levels of social support. In assessing the potential roles of personality and personality disorder it would be important to evaluate these risk factors as they could potentially confound the relationship of personality and personality disorder with repetition of parasuicide.

Two major revisions of existing classification systems for

mental and behavioral disorders have been recently described by the World Health Organization (WHO, 1992) as well as the American Psychiatric Association (APA, 1994). Previous work has documented a great deal of overlap between personality disorder categories in older revisions of the two major diagnostic systems as well as a high rate of comorbidity among personality disorders (Oldham et al, 1992).

It is not known to what extent these recent revisions of the relevant diagnostic systems have reduced the comorbidity which had been noted between personality disorder categories in the successive revisions of DSM-III (APA, 1980) and DSM-III-R (APA, 1987) especially. It would be important to assess this in order to evaluate the discriminant validity of these new personality disorder categories which the clinical ICD-10 criteria (WHO, 1992) describes.

Due to the many problems associated with a categorical approach to the description of personality disorder, dimensional models for personality disorder have been proposed. Among these are the temperament and character model of Cloninger et al (1993). This model postulates that persons who have low scores of self-directedness and cooperativeness have a higher probability of been diagnosed as having a personality disorder. Conversely those patients

who are identified as having a personality disorder should score low on these dimensions. This latter hypothesis is examined in a prospective manner in this study.

The relationship of self-directedness and cooperativeness to personality disorder has up to the time of writing this thesis been only examined in two previous studies and both of these relied on interviews and questionnaires completed by the patient. No study has examined whether these findings - which are in need of further confirmation and examination - hold true for the diagnoses of personality disorder made through informant interviews using the Standardized Assessment of Personality.

There have been many concerns about the validity of informant interviews and it would be important to document some aspects of the predictive validity of this approach. In this study personality disorder - identified according to an informant's description - is examined to see whether it is a predictor of low self-directedness and cooperativeness scores in the patient. The concurrent validity of informant accounts of personality disorder among parasuicide patients has also not been described in the literature and this is examined in this study in relation to self-reports by patients of problems which they experience.

The literature describes the role of previous suicide attempts in ambiguous and contradictory ways. Patients who have a history of previous parasuicide are characterized as having low suicide intent (Power et al, 1985). An important predictor described for completed suicide is a previous suicide attempt (Pierce, 1981). Few studies (e.g. Ashton et al, 1994) have specifically examined whether those patients who repeat parasuicide have lower suicide intent nor has the intensity of suicidal ideation experienced by this group of patients who repeat parasuicide been examined. This study examines the role of the intensity of suicidal intent, suicidal ideation as discriminators for patients with a history of previous suicide attempts at entry into this study. Unlike other studies in which repetition of parasuicide and completed suicide have been used to describe outcome suicidal behavior, this study also uses a measure of suicidal ideation at follow-up in order to describe outcome.

OBJECTIVES OF THIS STUDY

This study aims to determine the prevalence of personality disorders in patients who are assessed after parasuicide in the psychiatric emergency unit and to describe the risks for repetition of parasuicide in terms of personality disorder using the recently described ICD-10 clinical criteria while examining and controlling for some of the

risk factors which have been described in other studies.

Another objective of this study is to compare its findings with previous studies of risk factors for the repetition of parasuicide as many of the correlates described for repetition may not be associated with repetition of parasuicide in a different environment to the one where these risk factors were originally described.

This study describes suicidal behavior at follow-up and over a short term in a cohort of patients who were evaluated at index admission to the psychiatric emergency unit. Suicidal behavior at follow-up is described in terms of suicidal ideation, repetition of parasuicide and completed suicide.

This study aims to describe patient completed assessments of personality and to determine the association of personality dimensions with repetition of parasuicide in the follow-up period. This study also aims to describe the relationship of informant based assessments of personality disorder to patient completed assessments of personality.

This study will describe the comorbidity of categories of personality disorder according to the ICD-10 (WHO, 1992) as described by informants and compares this to previous studies of comorbidity where comorbidity has been examined

in terms of patient completed interviews and diagnoses have been based on DSM-III-R (APA, 1987).

This study aims to document some of the sociodemographic correlates described by the patients themselves of their informant based assessments of personality disorder and compares this with previous work which has examined some of these sociodemographic correlates of personality disorder on patient completed evaluations in order to describe the concurrent validity of informant accounts of personality disorder.

HYPOTHESES EXAMINED IN THIS STUDY

This study examines the following hypotheses:

1. Unspecified personality disorder is not associated with repetition of parasuicide (or a history of previous parasuicide in this study).
2. Specific ICD-10 personality disorder subtypes have different risks for repetition of parasuicide (or a history of previous parasuicide in this study).

3. Risk factors which have been previously described for repetition of parasuicide in other studies such as unemployment, substance abuse, criminality, and violence are associated with the repetition of parasuicide in this local cohort of patients.

4. Those patients with a history of previous parasuicide report different levels of suicide intent, suicidal ideation, social support and threatening life events when compared to those who have made their first attempt.

5. Specific ICD-10 personality disorder categories have different odds of co-occurrence with each other.

6. Informant based diagnoses of ICD-10 personality disorder among patients are associated with reports by patients themselves of violence, alcoholism and non-prescription use of psychoactive drugs.

7. Low self-directedness scores and low cooperativeness scores derived from the Temperament and Character Inventory (Cloninger et al, 1994) among patients at follow-up are predicted by ICD-10 diagnoses of personality disorder made at entry into this study using an informant interview - the Standardized Assessment of Personality (Pilgrim and Mann, 1990).

8. The group of patients who repeat parasuicide in the follow-up period report different mean scores in terms of temperament and character dimensions at follow-up than patients who show no further suicidal behavior after entry into the study.

Chapter 12.Methodology.

STUDY DESIGN

This study used a prospective cohort design in order to assess and follow-up patients who had presented to the psychiatric emergency ward at Groote Schuur Hospital after parasuicide. As the majority of patients are discharged shortly after admission and assessment, this study was done in the community and all patients were interviewed in their homes within two weeks after they were seen at Groote Schuur Hospital. Patients were consecutively approached for inclusion into the study over a six month period in 1994. Patients had a variable follow-up period which ranged from 6 to 20 months with a median of 9 months of follow-up.

PATIENT SAMPLE

All patients who were 18 or older and who were assessed in the psychiatric emergency unit were eligible for inclusion into the study. Selection into the study was from consecutive admissions to ward C23. All patients who gave written informed consent and who were able to be interviewed in either English or Afrikaans were eligible for inclusion. Patients who were resident outside of the Cape Peninsula or who had no informants nor fixed abode

were excluded from the study. In order to allow for an adequate assessment of personality disorder in this group of patients, it was decided to limit the study to patients over the age of 18 and to those who had informants who could provide collateral information about premorbid personality.

From the time that the first patient entered this study until when the last patient was included in this cohort, 628 patients were recorded in the admissions register of ward C23 for assessment of parasuicide. Of these, 37 were resident outside of the Cape Peninsula or had no fixed abode, 102 were less than 18 years of age. A further 55 patients used a language other than English or Afrikaans at home, according to hospital records. In terms of the inclusion and exclusion criteria of this study, 434 adult patients spoke either English or Afrikaans and were resident in the Cape Peninsula. The mean age of this target population was 29.27, SD = 9.98 years. 138 or 31.80% of these patients were male. There was a female to male ratio of 2.1:1 in this population. 120 consenting adult patients who had informants and a fixed abode entered this study consecutively over six months. Statistical tests showed no significant differences between the study sample and the target population in terms of their age and sex distributions as well as the residential areas in the Cape Peninsula from which these patients came.

INSTRUMENTS USED IN THIS STUDY TO ASSESS PERSONALITY AND
PERSONALITY DISORDER

Translation of the questionnaires and interviews.

Two versions of all questionnaires were used in this study - an English and Afrikaans translation. It was beyond the capacity of this investigation to undertake a translation and validity studies of a Xhosa translation of the relevant instruments. Most of the patients who entered this study are bilingual with a preference for one of these languages. Afrikaans and English culture are more similar to each other than to Xhosa culture and less problems would have been encountered in the translation of English to Afrikaans than to Xhosa. All instruments were translated by a retired teacher of Afrikaans and a senior psychiatric nursing sister with many years of clinical experience and who uses Afrikaans as her home language independently checked the accuracy of this translation. The research assistants who administered the questionnaires and interviews were all bilingual and reported no major difficulties in the administration of the Afrikaans version of these instruments to the patients who were included in this study. It should also be noted that these research assistants included trainee clinical psychologists and a psychiatric nursing sister, all with extensive mental health experience and who were able to resolve any

difficulties in understanding on the spot as all questionnaires were completed in the presence of the research assistant. Any possible confounding of the results of this study through the use of two language versions of the instruments is described and analysed later in this thesis.

The Standardized Assessment of Personality.

Pilgrim and Mann (1990) reported that this informant based interview avoided the distortions of self-description in patients who were acutely ill. Many of the instruments which are available for the assessment of personality disorder are lengthy and are dependent on an interview with the patient. An instrument which was brief and which had been demonstrated to have good reliability was needed. The SAP is one of the few instruments which has been designed for epidemiological studies where brevity is an important consideration.

Pilgrim and Mann have recently described various revised versions of this instrument (Pilgrim and Mann, 1990; Pilgrim et al, 1993). This study used the penultimate version of the SAP and this version is based on the ICD-10 clinical criteria for personality disorder (WHO, 1992). The interrater reliability of this version was reported on by Pilgrim et al (1993) in their study. At entry into this

study informants, who knew the subjects well in a variety of social situations and for at least five years, were asked to complete the ICD-10 version of the SAP based on clinical criteria. The final SAP, based on the ICD-10 research criteria (WHO, 1993), only became available to the investigator when most of the personality assessments in this study had already been completed.

The research criteria are not strictly comparable with the clinical criteria for personality disorders of the ICD-10 (WHO, 1992). The clinical criteria are set at a lower threshold than the research criteria. The thresholds of the categories for the research criteria are much higher in order to ensure more homogenous groups. Also some specific criteria need to be fulfilled. For example, in order to make a diagnosis of Impulsive Personality Disorder according to research guidelines then the criterion, "often becomes quarrelsome especially if impulsive acts are criticized" must be present.

The clinical criteria does not specify that this criterion specifically needs to be met before a diagnosis of impulsive personality disorder can be made. A few patients classified as having an impulsive personality disorder according to clinical criteria would not meet the threshold of the research diagnostic criteria for this personality disorder. A diagnosis of Borderline Personality Disorder

also cannot be made, according to the research diagnostic criteria, unless a prior diagnosis of Impulsive Personality Disorder has been made. Thus some patients classified as having a Borderline Personality Disorder according to clinical criteria in this study would not necessarily meet the diagnostic threshold of the research criteria.

Because of the possible biases - as has been previously described - which could arise through the use of informant reports in order to assess for the presence of personality disorder, it was decided in this study also to use concurrent self-reports by patients about their personality difficulties in order to validate these interviews. Patients were also given the opportunity at follow-up to describe their personality difficulties by administering Cloninger's Temperament and Character Inventory (Cloninger et al, 1994) and these allowed for the predictive validity of these informant accounts of personality disorder to be evaluated.

Only informants who had known the patients for at least five years were included. It is possible that suicidal behavior in the patient may have caused the informant to give a biased account of personality disorder symptoms in the patient however, it should be noted that the informant was asked to concentrate on how the patient usually was. Also the first part of the SAP does not specify suicidal

behavior in any of the probes which are used to screen for personality disorder symptoms before the administration of specific questions concerning personality disorder criteria. Thus informant bias as a result of recurrent suicidal behavior in the patient is probably minimal.

The Temperament and Character Inventory.

The Temperament and Character Inventory seemed to satisfy many of the requirements for a personality inventory as outlined by Ben-Porath and Waller (1992) - see the literature review of this thesis. Because of this, the Temperament and Character Inventory was chosen to provide a dimensional assessment of personality in this study.

Two very different assessments of personality have been used in this study in order to describe personality and personality disorder. The Standardized Assessment of Personality was used to generate informant based categories of personality disorder in this group of patients and the Temperament and Character Inventory gave patients the opportunity to describe their personality difficulties themselves. This allowed the investigator to determine whether low cooperativeness and low self-directedness, as described by Svrakic et al (1993), were characteristic of patients identified as having personality disorder by their informants' reports.

Trull (1992) noted that it would be important in future studies to determine whether correlations between self-reported personality inventories and assessments of personality disorder based on the patients' account of their personality replicated to situations where a knowledgeable informant was the source for the personality disorder description of the patient.

Use of the Temperament and Character Inventory at follow-up allowed for the predictive validity of the ICD-10 (WHO, 1992) classification of personality disorder - based on informant report - to be assessed. It is not known what the relative contributions of character and temperament are to repeat suicide attempts. It is highly likely that both temperament and character factors contribute to repeat suicide attempts in the follow-up period.

INSTRUMENTS USED TO MEASURE MENTAL STATE

One of the main aims of the current investigation was to document the association of personality disorder with repetition of parasuicide. More effort was thus required for the reliable and valid assessment of personality disorder through structured interviews and inventories. As the interviews were lengthy, patients had to complete 6 clinical inventories at baseline and 3 at follow-up, it was impossible because of logistical reasons and also to ensure

the cooperation of patients, to do structured interviews of axis 1 pathology which would have further prolonged already lengthy interviews.

The Scaled Version of the General Health Questionnaire.

It was decided to use a general measure of psychological distress as many patients who make suicide attempts experience transient and severe psychological distress rather than experiencing problems from a DSM-III depressive illness, (Ennis et al, 1989; Schlebusch, 1986). Murphy (1990) wrote that the General Health Questionnaire was sensitive to symptoms which rose and fell quickly. This attribute and also because the GHQ did not require a trained interviewer nor was it necessary for the patient to be seen in person for its completion, were some of the reasons for using the GHQ in this study. Various versions of the General Health Questionnaire -GHQ- have been used in previous studies of parasuicide.

Power et al (1985) used the 60-item GHQ and noted that the -GHQ- score accounted for more of the variance in suicidal intent than life stress. Goldney et al (1989) reported that although scales to assess suicidal ideation had been devised, they did not seem to have been widely used and suggested that questions derived from the scaled version of the GHQ - Goldberg and Hillier (1979) - could be used to

evaluate the degree of suicidal ideation in the absence of standardized methods for the assessment of suicidal ideation.

The scaled version of the GHQ also allows for the evaluation of symptoms of anxiety, depression, somatization and social dysfunction. Use of this instrument at both baseline and follow-up interviews enabled the degree of psychological distress which the patient experienced to be described as well as the intensity of suicidal ideation. Among other inventories to measure suicidal ideation are the Suicide Ideation Scale -SIS- described by Rudd (1989) and the Scale for Suicidal Ideation -SSI- described by Beck et al (1979a). Even these have not been extensively used.

The Beck Depression Inventory.

The Beck Depression Inventory or BDI has become one of the most widely used instruments for assessing the intensity of depression in psychiatric patients and for detecting depression in normal populations, (Beck et al, 1988). This instrument was chosen to provide a more specific measure of the level of depression experienced by this group of patients than could be provided for by the scaled version of the GHQ (Goldberg and Hillier, 1979). This instrument was originally described by Beck et al, in 1961. The format

of this instrument was reviewed by Beck et al (1979b). The revised version was used in this study. While depression is an important risk factor for suicide and attempted suicide (Silver et al, 1971), the relationship of depression to repeated parasuicidal behavior needs further evaluation.

Suicide Intent Scale.

The suicide intent scale was described by Beck et al (1974). This scale was developed to measure the intensity of the wish of a patient to terminate his/her life and is completed on the basis of retrospective data obtained from the patient. Only the first 15 items of the scale are scored and it is only these items which have been included in this study. Good internal and inter-rater reliability was reported by Beck et al for this scale (1974). It has well established reliability and validity (Weissman, 1974). Slater and Depue (1981) as well as Morano et al (1993) have used a seriousness of intent score greater than or equal to 10 as a threshold to discriminate patients who were considered to be serious suicide attempters.

INSTRUMENTS TO MEASURE SELF-ESTEEM, LIFE EVENTS AND SOCIAL SUPPORT

Rosenberg Self-esteem Scale.

This instrument was shown by Rosenberg to have satisfactory reproducibility (Rosenberg, 1965). This scale reflects global self-approval rather than assessing competency in specific roles (see Roy et al, 1995). The Rosenberg Self-esteem scale has been used in previous studies of parasuicide (Sakinofsky et al, 1990). The results of this study can be compared to that of previous work.

The List of Threatening Experiences (LTE) Questionnaire.

The List of Threatening Experiences - Questionnaire was described by Brugha et al (1985). The LTE was shown to have good reliability and validity by Brugha and Cragg (1990). The list of 12 major threatening experiences was described by Brugha et al (1985) to overcome the problems of longer inventories and it omitted common events that were unlikely to be of etiological importance. This list was recommended for use when cost or other practical considerations precluded the use of more sophisticated methods. Because of its brevity and ease of administration, this instrument with documented reliability and validity was chosen to measure life events with long term contextual threat.

The Sarason Social Support Questionnaire.

In this study a short measure of social support as described by Sarason et al (1987), has been used. This measure of social support has been demonstrated to have good validity and reliability. Heitzman and Kaplan (1988) have pointed out that many of the relationships investigated by social support researchers are not robust and if a measure of social support has low reliability then it becomes difficult to detect relationships which may exist. All of the items on this version of the Social Support Questionnaire (Sarason et al, 1987) are of a general nature and reflect the affective aspects of relationships. Sarason et al (1983) emphasized that there were two important domains of social support, the size of the social network as well as the level of satisfaction with the network. The Social Support Questionnaire (Sarason et al, 1987) measures both these aspects of social support. This measure of support has been criticized by House and Kahn (1985) because it focussed only on the number of supporters and satisfaction with them. These authors emphasized that all three aspects of social relationships needed to be considered i.e. the existence and degree of social integration - density, numbers and range of relationships, social network structure - nature and sources of support as well as the functional content of relationships. Sarason et al (1987) stated that it was more

useful to view support as the respondents' perceptions that they were valued and loved and that they had persons available who would provide assistance if this was necessary rather than conceptualizing social support in functional terms i.e. listing individuals who provide certain services. Perception of social support according to these authors was more important than the actual receipt of social support.

OTHER VARIABLES WHICH WERE ENQUIRED ABOUT

Structured Interviews (see examples in the appendix) were developed for both baseline and follow-up assessments. These interviews at baseline - done after the index episode or entry into the study - described sociodemographic variables, the number of previous suicide attempts and symptoms of alcoholism as measured by the CAGE questionnaire (Mayfield et al, 1974). CAGE is an acronym for four questions about "cutting down on drinking", "annoyed by criticism of drinking", "guilt about drinking" and an "eye-opener or a drink first thing in the morning". Nonprescription use of drugs to alter mental state as well as criminality, violence to and from others and previous history of psychiatric treatment was also enquired about. The reliability of this interview was examined and is presented in the results section.

At follow-up patients were asked about the number of intervening suicide attempts since they were last seen as well as the month in which these events occurred and the psychiatric treatment which they had received in the interim.

INTERVIEWERS - THEIR CREDENTIALS AND THEIR TRAINING

Two intern clinical psychologists who had completed their year of clinical internship were trained by the author of this thesis to administer the Standardized Assessment of Personality to knowledgeable informant's of the patients. Special training in London was recommended by the developers of the Standardized Assessment of Personality to the author. This was not feasible because of limited funding for this study.

Dr. J. Pilgrim, one of the senior authors of the Standardized Assessment of Personality, sent a videotape demonstrating the use of the Standardized Assessment of Personality to the author of this thesis. The author then made an audiotape of a series of interviews with informants which he had done by himself using the Standardized Assessment of Personality and sent this to Dr. J. Pilgrim in London who then listened to this audiotape to ensure that the SAP had been used correctly. He was satisfied with the way in which the SAP was used and permission was

granted for its use in this study.

The two intern clinical psychologists who were trained to administer the SAP did all the assessments for personality disorder and also all the baseline interviews. They also completed most of the follow-up interviews. They were not able to complete all of the follow-up interviews because of other work commitments and two other research assistants - both of whom had a bachelors degree - one had a degree in psychology and the other a senior psychiatric nurse who had a degree in nursing - were trained by the investigator to continue the follow-up interviews.

These changes in the interviewers during the follow-up component of this study would probably not bias the results of this study as only 6 questions - see follow-up interview in appendix - were completed in an interview by the research assistant and the rest of the follow-up procedures were the completion of questionnaires by the patient.

Throughout this study the investigator met regularly with all research assistants to ensure that questionnaires were satisfactorily completed and to ensure that the Standardized Assessment of Personality, done at baseline or entry into the study, was used in the correct way. The investigator was not involved in data collection in order to avoid case ascertainment bias - a knowledge of disease

status and awareness of hypotheses could have lead to differential probing. This collection of all data by research assistants rather than the author of this thesis increases the validity of the study's findings. All research assistants were blind to the hypotheses of this study and were not involved at all in the planning for this study. Methodological planning for this study, choice of questionnaires, quality and data control as well as the statistical analysis were done by the investigator alone.

PROCEDURES AT THE FIRST OR BASELINE INTERVIEW

Eligible patients were approached within two weeks of assessment at the emergency unit and gave written and informed consent - see example in appendix - to participation in this study. They were interviewed in their homes. At the baseline interview in addition to specific questions which were asked the following research instruments were administered:

1. Beck's Suicide Intent Scale
2. Becks's Depression Inventory
3. Goldberg's Scaled General Health Questionnaire
4. Brugha's List of Threatening Experiences
5. Rosenberg's Self-Esteem Scale
6. Sarason's Social Support Questionnaire

At this initial interview the patients were asked to name an informant who knew the patient well for at least a period of five years. This person was then approached and completed an interview which described the patient and used the Standardized Assessment of Personality.

PROCEDURES AT THE FOLLOW-UP INTERVIEW

Patients were contacted after at least 6 months had elapsed in order to complete the follow-up interview. There is a wide range for the follow-up periods as this was a community based study and all patients were seen in their homes. This was unavoidable as only two research assistants were available to work on this component of the study at any given time. At follow-up the patient was asked about psychiatric treatment as well as repetition of suicidal behavior since they were last seen. At the follow-up interview the following questionnaires were completed by the patients:

1. Cloninger's Temperament and Character Inventory,
2. Brugha's List of Threatening Experiences,
3. Goldberg's scaled version of the General Health Questionnaire.

RELIABILITY STUDIES OF INTERVIEWS AND QUESTIONNAIRES AT
BASELINE AND FOLLOW-UP

A small subsample of patients were approached to repeat their baseline interviews and to complete the questionnaires again. Temporal reliability over one week was determined for all the instruments used at baseline. It was also important to determine the interrater agreement for the Suicide Intent Scale as well as the Standardized Assessment of Personality. Patients were reinterviewed separately by research assistants to document the interrater agreement for the Suicide Intent Scale and informants were also separately and independently reinterviewed by another rater to describe the consistency of personality disorder diagnoses in this study across raters.

The temporal stability for the dimensional scores of the Temperament and Character Inventory was determined over a two month period in another group of patients who were not part of this parasuicide cohort. The group of psychiatric patients who participated in this reliability study were in a general psychiatric ward and completed the Temperament and Character Inventory at admission and just before discharge from the ward. This reliability study was done in another cohort of patients in order to avoid exhausting the subjects of this study who had already completed so many

interviews and questionnaires.

STATISTICAL ANALYSIS OF THE DATA

Tests for reliability

Reliability has been described in terms of Spearman's rho for ordinal and continuous data. This nonparametric coefficient was chosen because of the small sample sizes available for the reliability study of this project and because it avoids the requirements for a normal distribution of the data; it also gives a more conservative estimate of correlation than the Pearson correlation coefficient. Two versions of kappa have been used in this study. Cohen's Kappa (1960) has been used to describe the reliability of categorical data. Cohen (1968) also described a weighted version of kappa which gave credit for partial agreement. The weighted form of kappa was determined using a quadratic system of weights for the levels of disagreement as has been recommended by Norman and Streiner (1994) for categorical data as well.

A test-retest approach was used to determine the reliability of the Standardized Assessment of Personality in this study. Zimmerman (1994) wrote that a more rigorous examination of agreement between two raters is the test-retest approach where two raters separately interview the

patient. There are three sources of error in a test-retest study: rater variance in the interpretation of criteria, rater variance in the elicitation of information and patient or informant variance across interviews. A fourth source of variance in this test-retest approach and not listed by Zimmerman (1994) would be the variance caused by using different informants if an informant based assessment of personality was done. In order to limit this last source of variance, the present reliability study was limited to a second interview with the same informant who had given the first. Kappa's determined by this test-retest approach are generally lower than that which would have been determined by a joint interview design. In this design the corater may be guided by the structure of the instrument and his corater's use of this structure. There is only one source of variance in such a study, i.e. rater variance in the interpretation of criteria and consequently higher kappa's are recorded in studies using this design. The more conservative test-retest design for determining interrater agreement (requiring the second interviewer to separately and independently interview the same informant) was used in this study.

Bivariate tests for group differences

Generally group means were compared using non-parametric tests such as the Wilcoxon-Rank Sum Test. The Wilcoxon

Rank-Sum test, a nonparametric test of statistical significance for ordinal data was done instead of Student's T test in order to compare the mean values of questionnaire scores in subsamples of first ever parasuicide patients to repeaters. No assumptions were thus made about a normal distribution for this data which would have to be made in order to use Student's T test.

Fisher's Exact Test has been computed to determine the significance of bivariate associations for categorical data. This was done in preference to the Chi-square test as it is more conservative and more appropriate for cells with small frequencies in a contingency table. Fisher's exact test determines the exact probability of the association of categorical variables (Rosner, 1990). It is a more conservative test of the significance level of an association or alpha (the probability of a type 1 error) than the Chi-square test which gives an approximate estimate of this probability. The relevant statistic derived from the chi-square test is unstable if there are less than 5 expected counts in more than 20% of the cells in a contingency table. Fisher's exact test is thus suitable for small sample sizes where there is a great likelihood of more than 20% of the cells of a contingency table having expected values of 5 or less. It was thus decided to use this more conservative test in order to determine the significance of associations in these

contingency tables in order to reduce the possibility of making an alpha or type 1 error in a relatively small sample where it would have been more likely to occur had the chi-square test been used.

Test for strength of association

In this study the odds ratio has been computed to determine the comorbidity of personality disorders and also for relevant explanatory variables derived from the logistic regression. This statistic is a measure of the strength of association between two variables. The odds ratio is not influenced by base rates but rather makes comparison across studies with different base rates possible, (Fleiss, 1981). It is a cross product ratio of the likelihood that variables would occur together divided by the likelihood that they would rather occur apart from each other.

Multivariate analyses of the data set

Multivariate statistical techniques have also been used in addition to a bivariate examination of the data set in order to describe the relation of many independent variables to an outcome variable and to control for possible confounding. Two techniques are used in this study. They include logistic regression for dichotomous categorical data and multiple linear regression for

dependent variables which have a normal distribution. Multivariate analysis allows for the statistical control of confounding which may occur in the assessment of the relationship between two variables by other variables.

Multivariate analysis also allows for the statistical modelling of and examination of the interaction between two independent variables. Interaction refers to those situations where there is an effect brought about by the presence of both variables which is different to that produced on their own. Multivariate analysis is thus a more useful analytic tool especially in this study in which many of the personality disorders have been shown to have a high rate of comorbidity with each other and also with other variables.

Logistic regression is also useful in that it allows for easy estimation of the odds ratio in order to provide an estimate of the importance or strength of association between variables. This is obtained by deriving the antilogarithm of the estimated coefficient of the relation between the dependent variable and the explanatory or independent variable if it is dichotomous. Likewise confidence intervals for this estimated odds ratio are easily obtained by computing a confidence interval for the estimated coefficient and taking the antilogarithm of its upper and lower limits.

Data entry was done and checked by the author himself. All statistical analyses were done by the author of this thesis on an IBM PS/2 55 SX computer using STATA (Computing Resource Center, 1990) - a program for statistics, graphics and data management.

Sample size determination

Sample size was determined according to the formula for case-control studies described by Hennekens and Buring (1987) in terms of the first hypothesis which had been proposed for this study namely that unspecified personality disorder was not associated with recurrence of parasuicide. In terms of this first hypothesis unspecified personality disorder is the exposure and recurrent parasuicide (or a previous history of parasuicide) is the outcome. The literature review suggested that 50% of all patients with parasuicide would have a personality disorder (Ovenstone, 1973; Phillip, 1970; Casey, 1989) regardless of repeater status. This study has, in light of the high prevalence of any personality disorder among patients with parasuicide, taken a .25 difference in the proportions of personality disorder between those with and without a history of previous parasuicide as been clinically relevant. Thus .75 of patients with a history of previous parasuicide would be expected to have any personality disorder in terms of clinical relevance.

Using the sample size formula described by Hennekens and Buring (1987) each group - that is first-ever parasuicide versus repetition of parasuicide (or a history of previous parasuicide) should have at least 55 cases in each group in order to document a .25 difference in the proportions of personality disorder between these two groups with power = .80 and two-tailed test of statistical significance, $P < .05$. A total of 110 patients was needed to document that a difference of at least this size existed between the study groups.

The sample size in this study very much kept to these sample size parameters although there were comparatively more first-ers (or "controls") $N = 70$ compared to $N = 50$ who had a history of previous parasuicide (or "cases"). The relative oversampling of first-ever attempters in this cohort of patients compensates for the slightly reduced number of cases which could have been possibly included. Thus this study did have sufficient power to document the difference between groups of patients with first ever parasuicide and those with a history of this behavior in terms of the relevant difference in proportions as described above had it existed. This difference in the proportions of unspecified personality disorder among first-ers and those with a history of parasuicide approximates an odds ratio of 3 (according to the formula described by Hulley and Cummings, 1988).

PART III

The Study - Results and Discussion.

Chapter 13.The Need for Accuracy and Precision in Scientific Research.

Quality of measurement is an important consideration in the evaluation of scientific research. Instruments and methods used for observation need to be precise and reliable - or consistent across different situations. Measures used for classification also need to be valid and accurate (the degree to which a diagnostic procedure correctly classifies people who are truly ill and those who are not) in what they aim to describe. The reliability of the measures used in this study have been investigated within the constraints imposed by the limited financial resources made available for a relatively large research project and also the long interviews with patients and informants at baseline. This study also provides some evidence of the validity or accuracy of its measurements, particularly as far as the measurement of personality disorder is concerned in terms of concurrent and predictive validity. It must be noted that there are constraints to the assessment of the validity of psychiatric disorders as there are no gold standards which accurately and independently define the presence or absence of psychiatric disorder.

All instruments, except for certain questions which were specifically designed for this project, have been documented to have good reliability in the literature. The

samples sizes used for the reliability studies in this project are small when compared to the original studies which examined the reliability for these instruments. The aim of these studies were to confirm that similar levels of reliability could be achieved locally as had been done in the original studies. This is necessary because it does not follow that reliability in this project will be the same as was originally described for these instruments because of systematic differences in the research methodology, the environment, the research assistants and the subjects who participated in the research. Reliability coefficients are described and compared to those achieved in previous work.

Parnas (1994) criticized what he felt was an exaggerated quest for reliability in current psychiatric research at the expense of a concern for the determination of the validity of psychiatric constructs. He noted further that greater attention should be paid to conceptual reflection rather than a frenetic quest for reliability.

Parnas (1994) noted that it was unlikely that a purely polythetically derived diagnosis could become clinically sensible especially when the information had been elicited by means of a highly structured interview and which specified threshold levels. He emphasized the importance of clinical psychiatric categorization or typification which included the global apprehension of the patient, the

recognition and classification of his morbid experience and comprehension of the immediate and temporal links between different components of his psychopathology.

He described the clinical approach to diagnosis as being based on a knowledge of prototypical cases and experience which lead to an immediate, global and contextual perception of the salient features of a patient and this allowed the clinician to categorize the disorder which the patient had. In contrast he noted that researchers generally expected insights from post-hoc statistical analyses and which were not guided by any conceptual framework nor were many clinically trained or experienced. Parnas (1994) recommended further that research should be undertaken more by clinicians rather than non-clinical but reliable researchers.

Faraone & Tsuang (1994) noted that valid measures were not necessarily reproducible. They noted that studies of bipolar disorder (Rice et al, 1986; Rice et al 1992) showed very poor reliability over a six month period for lifetime diagnosis of bipolar disorder; despite this there was a significant familial aggregation of bipolar ll disorder, which demonstrated diagnostic validity. Epidemiology has, until recently, held onto the notion that reliability constrains validity. There could be no validity to the findings of a study if the measures used were unreliable.

Rice et al (1986, 1992) pointed out that when a test or diagnostic procedure for a disorder had low sensitivity (the extent to which truly ill subjects are identified as ill by the test - or the proportion of true positives) and high specificity (the extent to which a test identifies those who are truly well - or the proportion of true negatives) then under these conditions many ill subjects would be diagnosed as well but only rarely would a well subject be diagnosed as ill. Positive diagnoses would be valid but negative diagnoses would not be valid and reliability would then be poor despite valid positive diagnoses.

Faraone and Tsuang (1994) also noted that kappa (the coefficient for measuring agreement of categorical data) is influenced by base rate (the frequency of the disorder in the study), sensitivity and specificity of the diagnostic procedure. Spitznagel and Helzer (1985) also showed that low kappas are compatible with high sensitivity and/or specificity.

Results of this study are presented mainly in the form of tables. A discussion of the results immediately follows a table. I have departed from the usual presentation of all the results followed by a general discussion due to the many hypotheses which were examined in this study.

Chapter 14.The Reliability of the Instruments used at Baseline.

Table 1.

Test-retest reliability of the questionnaires, the reported number of previous suicide attempts and also the inter-rater agreement for the Beck Suicide Intent Scale.

	Spearman's rho	P-value*
Beck Depression Inventory (n=8)	.9102	<.01
General Health Questionnaire(n=8)	.8144	.02<P≤.05
Life Event Questionnaire (n=8)	.9208	<.01
Rosenberg Self-esteem Scale (n=8)	.8505	.01<P≤.02
Satisfaction With Social Support (n=8)	.9686	<.01
Number of Social Supports (n=8)	.9639	<.01
Test-retest correlation of the Suicide Intent Scale (n=8)	.9455	<.01
Inter-rater correlation of the Suicide Intent Scale (n=8)	.9412	<.01
CAGE Questionnaire #(n=7)	.9661	<.01
Reported number of previous suicide attempts #(n=7)	.9870	<.01

* P<.05 was determined using two-tailed upper critical values published by Olds, E.G.(1938).

Only seven sets of data were available to determine the test-retest reliability of these questions.

There were limits to the sample sizes which could be used in the reliability component of this study. These limits were imposed by a limited budget for research, all interviews were conducted in the community and the reliability of these questionnaires were tested in a subgroup of the patients who were part of the larger cohort which were followed up. Patients entered the study voluntarily, there were no financial incentives and there were limits to the time and assistance that these patients could be expected to give to the study. All these instruments in any case have well-documented reliability and the investigator really needed to confirm that similar consistency could be achieved in this study.

Test-retest agreement was determined over a two-week interval. Beck et al (1988) reported substantial stability for the Beck Depression Inventory over a week-long period. Pearson product-moment correlation coefficients were reported to range from .48 to .86 in groups of psychiatric patients. The short term stability for the Beck Depression Inventory in this study, although expressed in terms of Spearman's correlation coefficient compares favorably with that of other studies.

Goldberg (1978) reported fairly high test-retest correlations for the General Health Questionnaire which ranged from .51 to .90 over a six month interval. It would

seem that the test-retest correlations - over a much shorter time - in this study, compare favorably with those reported by Golberg. Likewise, Isaacs (1990), has also reported a test-retest reliability coefficient of .88 for the scaled version of the General Health Questionnaire in a South African study.

The Rosenberg Self-esteem scale is regarded as a highly reliable instrument and correlations ranging between .85 and .9 have been reported by Tippet and Silber (1965). A similar high level of test-retest correlation was achieved in this study. Brugha and Cragg (1990) showed high test-retest reliabilities for the life events described in the List of Threatening Experiences. This study, unlike the measure of consistency used by Brugha and Cragg, reports high test-retest correlation in terms of Spearman's rho for the total number of life events experienced. Brugha and Cragg (1990) reported reliability in terms of Cohen's kappa for the individual life events. Our sample was too small to accurately determine kappa for the individual life event categories and reliability for the individual life events has not been computed.

Sarason et al (1987) reported .84 and .85 test-retest correlations of the number and satisfaction scores of the Social Support Questionnaire respectively. The results of the test-retest evaluation of these scores in the present

study compare favorably with the findings of Sarason et al (1987). Beck and others (1974) demonstrated a high inter-rater agreement of .95 for the Suicide Intent Scale. In that study Beck et al (1974) did not comment on the short term consistency of the score derived from the Suicide Intent Scale. The present study has as good an inter-rater agreement for the Suicide Intent Scale as found in previous work and also demonstrated good test-retest reliability, over at least a short period of two weeks.

Mayfield et al (1974) have shown that the CAGE questionnaire successfully screens for alcohol abuse and that it is a valid instrument. The short term reliability coefficient of .96 for the total number of CAGE symptoms in this study is satisfactory. The reported number of previous suicide attempts was demonstrated to have good consistency with a correlation of .98 when the patient was reinterviewed. Reliabilities for other specific questions which were designed for this interview component of this study at baseline were also determined and are shown in Table 2.

Table 2

Test-retest reliability for patient reports of: the index episode as a first suicide attempt, use of drugs without prescription, previous psychiatric treatment and history of violence.

		Kappa	P-value
Report of the index episode as a first suicide attempt	(n=7)	1	.0000*
Report of the non-prescription of drugs for the alteration of mental state	(n=7)	1	.0000*
Report of previous treatment	(n=7)	1	.0000*
Report of violence from others	(n=7)	1	.0000*
Report of violence to others	(n=7)	.71	≤.001*

* P-value <.05 was determined using the formula given by Bartko, J. J., & Carpenter, W. T. (1976)

This table shows that there was a satisfactory test-retest reliability for patient reports of the index episode (the suicide attempt which marked entry into the study) as the first suicide attempt. Similarly, patient reports of the nonprescriptive use of drugs to alter their mental state, their previous psychiatric treatment and their history of violence towards and received from others demonstrated good reliability. Reliability for the SAP is shown in table 3.

Table 3

Short-interval interrater reliability of
personality disorder categories using the
Standardized Assessment of Personality

N=21

Personality Disorder	Base rate n (%)	Weighted Kappa	Kappa	SD*	P- value	95% Con- fidence Interval
Paranoid	7(33.3)	.54	.70	.15	<.001	.4 - 1
Schizoid	1(0.04)	...	...	...	...	...
Antisocial	1(0.04)	...	...	...	...	...
Impulsive	4(19.0)	.43	.22	.26	<.209	-.3 - .74
Borderline	3(14.2)	.56	.82	.16	<.001	.5 - 1
Histrionic	3(14.2)	.18	0	.53	<.5	-1 - 1
Anankastic	3(14.2)	.32	0	.53	<.5	-1 - 1
Anxious	9(42.8)	.71	.70	.15	<.001	.4 - 1
Dependent	4(19.0)	.85	.82	.16	<.001	.5 - 1
Any specific personality disorder	13(61.9)	...	.82	.06	<.001	.66 - .98

*SD = Standard Deviation. P-values were determined using the formula of Bartko and Carpenter (1976). Confidence intervals were determined according to the method described by Norman and Streiner (1994).

Standage (1989) noted that the main purpose for the development of structured interviews for personality

disorders was to improve the reliability of clinical assessment and that reliability was the principal criterion by which they should be judged. Agreement for the diagnosis for the various personality disorder categories was determined by using Cohen's (1960) kappa. Widiger and Costa (1992) noted that the validity of a semistructured interview depends on the training, care and dependability of the interviewers and recommended that interrater reliability should be established and documented in every administration of a semistructured interview rather than assumptions made on the basis of prior success with an instrument. The present sample size of this local study of the interrater agreement for the ICD-10 clinical personality disorder categories of the Standardized Assessment of Personality is smaller than the original interrater study reported by Pilgrim et al (1993). These investigators analyzed the reported data of the personality of 52 patients by their informants. The results of this study, in light of the afore mentioned, should be cautiously compared with the results of previous studies, particularly where poor levels of agreement have been noted in the present work.

Overall the level of agreement .82 attained for any category of personality disorder, is good compared to the .76 correlation reported by Pilgrim et al (1993). The unweighted kappa's (described later) reported for paranoid,

borderline, anxious and dependent personality disorder categories are similar to that reported by Pilgrim et al (1993). There was apparently poor interrater reliability using the unweighted version of kappa (Cohen, 1960) for the impulsive, histrionic and anankastic personality disorder categories in the present study. The unweighted version of kappa, which gives no credit for partial agreement, is a more conservative estimate of reliability.

Estimates of weighted kappa did however show some improvement on the unweighted version of kappa. Impulsive personality disorder had a marginally good reliability using this method and also following guidelines published by Landis and Koch (1977). Reliability coefficients less than .4 are poor and not much better than chance agreement according to Landis and Koch (1977) and kappa's greater than or equal to .4 are regarded as agreement much better than could have been achieved by chance.

The reliability of the anankastic personality disorder category, despite improvement to .32 and the histrionic personality disorder category, using the weighted version of kappa remained poor and not much better than could have been obtained through chance. In interpreting these poor reliabilities it must be noted that these kappa's were determined on a very small proportion of patients diagnosed with these disorders in an already limited sample and it is

still possible that the results of this inter-rater reliability study are consistent with much larger kappa's for these categories in the larger study even though this could not be demonstrated in this analysis of interrater agreement. The confidence intervals for kappa are consistent with this possibility. They are wide and indicate the variability or imprecision of the estimated kappas. The confidence intervals also include the possibility of kappas greater than .4 for these categories had the sample size been larger. There were larger standard deviations for the estimated kappa's because of the small sample size and the precision of these estimates in the present study was thus limited in these categories.

The apparent poor reliability of some of the personality disorder categories in this study should also be placed in the context of reports of their reliabilities by other investigators. Regier et al (1994) reported on the reliability of ICD-10 clinical categories of mental and behavioral disorders in North America and noted that the kappa for interrater agreement of histrionic personality disorder ranged from .07 to .32 worldwide. In the International field trial of the ICD-10 diagnostic criteria for research on mental and behavioral disorders, histrionic personality disorder had a low kappa of .25 (Sartorius et al, 1995). The long-term stability of these personality disorder categories were not determined in this study but

Pilgrim et al (1993) reported satisfactory temporal reliability for these categories over a two-and-half year period.

Loranger et al (1994), using the International Personality Disorder Examination, showed that it is possible to assess personality disorder with reasonably good reliability in different languages and cultures using a semi-structured clinical interview. This is the first local South African study to determine the frequency of personality disorder in a group of patients using an instrument developed overseas. Loranger et al (1994) reported an overall level of agreement of .64 for any specific ICD-10 personality disorder category. The overall level of agreement of .82 for any specific personality disorder in this study is good.

Kappa is affected by base rate and the statistic is unstable when the base rate (or the proportion of patients diagnosed to have the disorder by either rater) of the disorder is below 5% (Grove et al 1981; Spitznagel et al 1985). Kappa, accordingly, was not determined for the antisocial and schizoid personality disorder categories following the recommendation of Zimmerman (1994). More rigorous base rate requirements have been used by other investigators before determining kappa. Some investigators have required at least 5 or more patients to be diagnosed

with a disorder by either rater before calculating kappa (Zimmerman, 1994).

The baseline characteristics of the patients in this sample are presented next in order to facilitate comparison with other studies of parasuicide. Patients were also divided at baseline into those with or without a history of previous suicide attempts and the baseline characteristics of these two groups were then compared.

Chapter 15.Patients' Self-reported Characteristics at the Index
Episode and Repetition of Parasuicide.

Table 4

Socio-demographic characteristics of the entire sample

	N	%	Median	Mean	Standard Deviation
Age(years)	120	100	26	29.06	10.28
Schooling(years)	120	100	10	9.62	2.28
Males	41	34.17			
Females	79	65.83			
Married	48	40.00			
Widowed	5	4.17			
Divorced	12	10.00			
Never Married	55	45.83			
Subjects with children	65	54.16			
Employed	57	47.50			
Skilled workers	48	40.00			
Semiskilled workers	30	25.00			
Unskilled workers	42	35.00			
University education	5	4.17			
Technical College	32	26.67			
Apprenticeship	12	10.00			
Completion of training for work	39	32.50			

Using the standard normal distribution there is no significant difference between the mean age of this sample and the mean age of that target population who entered ward C23 - 29.27 SD = 9.98 years, $Z = - 0.23$, $P > .409$. There is however a slight oversampling of males as indicated by the female to male ratio of 2.1:1 for all those patients who would have been eligible for inclusion into this study.

Parasuicide incidence in Europe has been shown to be elevated among the 15 - 34 year olds and a median female to male ratio of 1.5:1 has been reported, (Platt et al, 1992). The mean age of this cohort falls within the range of peak parasuicidal behavior described in the WHO study on parasuicide in Europe. The age distribution however is skewed towards an older population in this study because of the exclusion of patients younger than 18 years of age. A similar female to male ratio is noted - 1.9:1 - in this study. A female to male ratio of 2:1 has been previously reported by Schlebusch (1987) in a South African study in Natal. From figures provided in the report of their study of the epidemiology of poisoning in the Bloemfontein area, South Africa, a female to male ratio of 1.52:1 can be calculated for deliberate self-poisoning, (Van der Merwe et al, 1988).

Jeenah (1991) reported in her study at Baragwanath Hospital of black South Africans, that the greatest risk for

parasuicide occurred in the 20-29 year age group. Similar findings were reported by Minnaar et al (1980) at Addington Hospital among white South Africans. Pillay and Pillay (1987) found in a predominantly Indian sample that persons between 16 and 25 years were at greatest risk in the Pietermaritzburg area. Weissman (1974) noted that ages 20 to 30 years were peak risk years.

The present sample, in terms of its age and sex distribution, is similar to the age and sex distributions described in other studies as typical of parasuicidal patients and that target population which has already been described in ward C23 - see methods section. It must be noted that this study excluded patients who were younger than 18 years of age in order to improve the validity of the personality disorder categories. Adolescence is marked by flux and marked changes in identity formation and observations of personality during this period are not stable. Thus it is possible that the present sample is more characteristic of older patients who present with parasuicide.

The distribution of the categorical sociodemographic variables is described next. Patients who reported their index episode as a first suicide attempt are compared with patients who reported that they had made one or more previous attempts in order to determine if there were any

significant associations between these variables and a history of previous attempts using the Fishers Exact test. These findings are presented in Table 5.

Table 5

Categorical comparison of patients with or without
a history of previous suicide attempts at baseline.

	First ever attempt n/N=70	One or more previous attempts n/N=50	P-value
Females	45/70	34/50	.701
Married	26/70	22/50	.457
Divorced	4/70	8/50	.120
Subjects with Children	34/70	31/50	.193
Unemployed	32/70	31/50	.096
Skilled workers	25/70	23/50	.265
Semiskilled workers	21/70	9/50	.199
Unskilled workers	24/70	18/50	.849
One or more CAGE symptoms of alcoholism	28/70	27/50	.141
Non-prescription use of psychoactive drugs	20/70	14/50	.023*
History of previous psychiatric treatment	16/70	34/50	.000*
5-year history of physical violence to another adult	21/70	24/50	.056
5-year history of physical violence from another relative	24/70	23/50	.255

*Fisher's Exact Test $P < .05$

At least 45% of this sample reported one or more symptoms of alcoholism. Platt & Robinson (1991) in their review of the frequency of alcohol dependence in patients with parasuicide reported that the proportion of parasuicide patients considered to be alcoholic was in the range of 15-59% for males and 2-16% among females in various studies. Foster and Kreitman noted the importance of alcoholism as a risk factor in their predictive scale for the repetition of parasuicide.

This study provides only limited support for the findings of Kreitman and Foster (1991) of an association between alcoholism and repetition of parasuicide. In this study there is a trend towards significance at the .14 level. A number of factors may account for this different result. A more conservative test of association has been used; our sample size may be too small to determine the more generally acceptable .05 level of significance. The CAGE measure used in this study may not be as sensitive as the measures used for alcoholism by Kreitman and Foster (1991) which included: presence of an alcohol dependence syndrome or an excess consumption of a specified weekly amount of alcohol or physical signs of alcoholism. Our sample, on the other hand, may reflect true differences in this population from the one described by Kreitman and Foster (1991). Overall it is highly likely that alcohol related problems are also important in this local cohort of patients as a

possible marker or risk factor for repetition of parasuicide but this study was not able to conclusively replicate the findings of Kreitman and Foster (1991).

Kreitman and Foster (1991) found that those patients who belonged to social class V formed a significantly higher proportion of patients who repeated suicide. This study did not find that there were significantly less unskilled workers among first ever suicide attempters compared to those who repeated parasuicide. Kreitman and Foster (1991) used the United Kingdom Registrar General's criteria for the coding of social class V which is equivalent to an unskilled worker according to Kreitman (personal communication).

An unskilled worker in this study was defined as any subject who had received no specific training after leaving school and who worked as a laborer. It is possible that some misclassification of occupational or social status may have contributed to different findings from those reported by Kreitman and Foster (1991). Kreitman and Foster (1991) also included unemployment as a risk factor for repetition of parasuicide. This study could only demonstrate a trend at the .096 level, using this present bivariate analysis, that those patients with a previous history of parasuicide were more likely to be unemployed. Because of the possible confounding of this relationship with repetition of

parasuicide by other variables, this association of unemployment and repeater status (those patients who reported a history of parasuicide at baseline) is examined using multivariate statistical techniques further on in this study.

The study also confirms like Kreitman and Foster (1991) that drug abuse - or specifically the criterion of nonprescription use of drugs to alter mental state within this study - is significantly associated with repeater status. This study could only confirm a trend towards significance at the .056 level for the association of violence to another adult within the preceding 5-years and repeater status. Kreitman found that either been a victim or perpetrator of violence was associated with repetition of parasuicide. This study confirms Kreitman and Foster's (1991) finding that previous psychiatric treatment is associated with repetition of parasuicide.

Kreitman and Foster (1991) in their description of a predictive scale for the repetition of parasuicide did not include measures of psychological variables, some of which have been reported to be associated with repetition of parasuicide in other studies. These variables as well as the contribution of life events and social support to repeater status are examined in Table 6.

Table 6

Psychological distress, life events and social support experienced by patients with or without a history of previous suicide attempts at baseline.

	First ever attempt N=70	One or more previous attempts N=50	P-value
Suicide Intent	11.2 (6.0)	13.9 (6.1)	.0399*
Depression - BDI	28.2 (11.6)	32.2 (11.3)	.1079
GHQ score	17.1 (7.5)	20.5 (5.7)	.0162*
Self-esteem	3.2 (1.6)	4.1 (1.5)	.0039*
Life events	2.9 (2.1)	3.1 (2.3)	.6262
Satisfaction with social support score	29.7 (7.0)	26.7 (8.9)	.0890
Number of social supports score	11.5 (7.3)	12.5 (10.4)	.8794

* $P < .05$, Wilcoxon Rank-Sum Test. Values are mean and (s.d.).

Sakinofsky et al (1990) reported a mean baseline Beck Depression Inventory Score of 19.14 in their cohort of parasuicide patients. Ennis et al (1989) reported a mean Beck Depression Score of 20.3 in a group of self-harm patients 5 days after admission. Silver et al (1971) reported a mean Beck Depression Inventory Score of 25 in a group of patients who attempted suicide. Dyer and Kreitman (1984) reported a mean BDI score of 26.2 in their group of

parasuicide patients. This approximates the mean level of depression in this study. Nevertheless, the patients in this study would appear to have higher mean levels of depression as measured by the Beck Depression Inventory when compared to other similar studies.

Newson-Smith and Hirsch (1979) reported a mean General Health Questionnaire Score of 18 seven to nine days after an overdose in a group of self-poisoning patients. This is similar to the level of psychological distress as determined by the General Health Questionnaire in this study. Newson-Smith and Hirsch (1979) used a longer version of the General Health Questionnaire (Golberg, 1972) and reported a decrease in the proportion of cases identified using the GHQ with successive interviews. Power et al (1985) reported a much higher mean score of 26.58, but the General Health Questionnaire Score in that study was done within 24 hours of admission. The repeater group in this study had significantly higher levels of psychological distress than the first ever suicide attempter group in terms of their General Health Questionnaire Score. These groups did not differ significantly in terms of their scores for overall level of depression as measured by the Beck Depression Inventory.

Dyer and Kreitman (1984) reported a mean suicide intent score of 10.2 in their group of patients. The mean level of

Suicidal Intent is higher in this study than the mean values in parasuicidal patients reported by Power et al (1985) and Goldney (1981). Silver et al (1971) reported a mean suicide intent score of 12.91 in their group of patients. Power et al (1985), unlike the results of this study, noted no significant differences for level of suicide intent in patients with a previous history of parasuicidal behavior. Morano et al (1993) classified his patients as serious attempters if they had a suicide intent score greater than or equal to 10 following Slater and Depue (1981) who used a similar procedure.

Öjehagen et al (1992) reported that repeaters had lower suicide intent scores than nonrepeaters at index attempt but curiously also had higher levels of hopelessness at follow-up. Beck et al (1985) have linked hopelessness to eventual suicide. Öjehagen et al (1992) classified patients as repeaters at the end of their study and not at the beginning as in the present study. They would have underestimated the number of patients who were repeaters. The present cohort of patients showed that those who were categorized as repeaters had significantly increased levels of suicide intent at entry into this study.

Sakinofsky et al (1990) reported a mean self-esteem score of 3.83 for their group of parasuicidal patients. This is similar to the mean value for self-esteem found in this

study. These investigators also found, as in the present study, a significant difference in the self-esteem score of those patients who repeated parasuicidal behavior. Their repeater group also had poorer self-esteem.

Morano et al (1993) used the Sarason Social Support Questionnaire and showed that although there were no significant differences between serious suicidal attempters and controls in the total number of supports and total satisfaction with social support, a group of adolescents with serious suicidal attempts did report significantly low family support compared to controls. There is a trend towards significance at the 8% level that those patients who made repeat suicide attempts were more dissatisfied with their levels of social support.

Neeleman and Power (1994) showed that patients with parasuicide reported lower perceived levels of support than medical controls and were more dissatisfied with available support. These investigators did not report on the relationship of social support to repetition of parasuicide and the group of patients which they studied was not typical of a parasuicide population: there were more males and most patients were middle-aged. Their findings may be biased towards a more depressed population than is typical of parasuicide cohorts.

Kotler et al (1993) reported that although there were no significant group differences between suicidal patients and nonsuicidal patients on their measure of social support, social support did have a significant negative correlation with the risk of suicide as measured on the Plutchik et al (1989), suicide risk scale. They concluded that social support acted as an attenuator of suicide risk. There are some difficulties with these findings as Koslowsky et al (1991) reported poor discriminant validity for the Plutchick et al (1989) suicide risk scale.

Many investigators (Paykel, 1975; Power, 1985; Slater & Depue, 1981; Farmer & Creed, 1989) have noted an excess of severe and threatening life events preceding parasuicide. The present study, using a scale of major life events with long term threat, does not find an excess of threatening events in those patients who repeat parasuicide. This subgroup of parasuicide patients who repeat their behavior do not appear to experience more adverse experiences i.e an increased number of life events and poorer support systems than patients who make only one attempt.

In addition to these findings of significantly increased psychological distress as determined by the GHQ, the Beck Suicide Intent Scale as well as poorer self-esteem and a nonsignificant trend towards greater dissatisfaction with social supports, an examination of the relationship of

personality disorder to repeater status was also done at baseline. Before this is done, the distribution of the personality disorder categories in this group of patients is first presented in table 7 in order to facilitate comparison with previous studies of personality disorder in parasuicide patients. A further examination of the co-occurrence of the personality disorders is also examined in the next chapter.

Chapter 16Personality disorders - Prevalence and Co-occurrence.

Table 7

Distribution of personality disorder categories
within the patient sample.

	n	%
Paranoid	37	30.83
Schizoid	4	3.33
Antisocial	8	6.67
Impulsive	34	28.33
Borderline	27	22.50
Histrionic	20	16.67
Anankastic	16	13.33
Anxious	36	30.00
Dependent	11	9.17
Any personality disorder	68	56.67

Ovenstone (1973) demonstrated that 52% of men and 44% of women who presented with parasuicide had personality disorder. Philip (1970) identified 50% of his sample as having character disorders. The prevalence of personality disorder in this sample would appear to be similar to that of previous studies.

As far as the investigator is aware, this is the first study to use the clinical ICD-10 personality disorder categories to determine the distribution of personality disorders in a cohort of parasuicide patients. The distribution of individual personality disorder categories found is not readily comparable to the distribution of personality disorder categories reported in other studies.

Casey in her 1989 study found that the proportion of patients with explosive personality disorder ranged from 54% for males to 33% for women and suggested that this was the predominant personality disorder in suicide attempters. Only 28% of the sample of patients investigated in this study had an impulsive personality disorder which is the nearest ICD-10 equivalent to the old ICD-9 category of explosive personality disorder. There are no studies at the time of writing, using the clinical ICD-10 classification system, with which these results can be directly compared.

A third of the patients in this study are noted to have paranoid personality disorder. Part of the hostility noted in parasuicide patients (Farmer, 1987; Kreitman and Foster, 1991) may be due to an underlying paranoid personality disorder. Montgomery and others (1983) have shown significant reduction in the recurrence of suicidal acts when patients were maintained on low doses of flupenthixol. These investigators related this finding to possible

improvement of borderline pathology however, it could also be postulated that administration of flupenthixol may have lead to some improvement of paranoid personality disorder traits.

Before an analysis can be done of the association of personality disorder with repetition of parasuicide it is important to examine the co-occurrence or comorbidity of personality disorder categories as well as the high comorbidity of personality disorder with some of the "independent" risk factors which have been described. This does not seem to have been done in any of the studies which have previously reported an association between personality disorder and repetition of parasuicide. Repetition of parasuicide could possibly be related to the co-occurrence of multiple personality disorders within patients. Alternatively specific personality disorder categories may increase the risk of repetition rather than the presence of any personality disorder. Investigators like Kreitman and Foster (1991) did not specify increased risk for repetition of parasuicide for any particular personality disorder and included only the presence of personality disorder - without further subtyping - in their risk scale.

The rate of co-occurrence for personality disorders in this study is first described in terms of the frequency distribution of multiple diagnoses of personality disorders

in this sample. Later an analysis is presented of those significant comorbid personality disorder patterns observed in this data set and comparisons are made with similar studies in the literature. This is done in order to document the extent of comorbidity in this study.

There is also a second aim in this study of comorbidity. While DSM-III and DSM-III-R personality disorders (APA; 1980, 1987) have been fairly extensively evaluated for co-occurrence this is not the case for the clinical ICD-10 personality disorder categories, (WHO, 1992). It would be important to determine whether more or less co-occurrence results from a classification system which although attempting to achieve similarity with DSM-IV (APA, 1994) nevertheless does have major differences in its organization of personality disorder.

There are 9 personality disorders in the ICD-10 (WHO, 1992) compared to 10 in the DSM-IV (APA, 1994). There is no ICD-10 (WHO, 1992) equivalent of narcissistic personality disorder and schizotypal personality disorder is listed as part of the schizophrenia-spectrum disorders and is not classified as a personality disorder. To further complicate matters, two versions of the ICD-10 (WHO, 1992; WHO, 1993) have been published. There is a clinical version and a version for research workers. An instrument to assess the research criteria set for ICD-10 personality disorders by

the WHO (1993) and which are set at a higher threshold to ensure more homogeneity of groups, was not available to the author of the present study when the baseline work of this study was done and assessments presented in this thesis are based on the clinical version of ICD-10 (WHO, 1992). The frequency of co-occurrence is presented in table 8 while table 9 presents a more detailed analysis of the extent of comorbidity among ICD-10 (WHO, 1992) personality disorders diagnosed from informant based interviews.

Table 8

Frequency of multiple diagnoses of personality disorder
in the patient sample.

Number of Personality disorders	N	%
None	52	43.33
One	17	14.17
Two	20	16.67
Three	10	8.33
Four	7	5.83
Five	8	6.67
Six	4	3.33
Seven	2	1.67

Pfhol et al (1986) showed that semi-structured interviews obtain more personality disorder categories than chart reviews do. The frequency of multiple diagnoses of personality disorder reported in this group of patients is not uncommon. Skodol et al (1991) as well as Widiger et al (1986) have shown that the use of semi-structured interviews resulted in personality disordered patients receiving an average of four diagnoses. In this study an average of 2.83 or a median of 2 diagnoses are recorded in patients described as personality disordered. Livesley et al (1994) showed that considerable overlap exists among criteria sets and possibly this accounted for comorbidity.

Table 9

Odds ratios for the co-occurrence of ICD-10 personality disorders in the patient sample at baseline.

	P	S	AS	I	B	H	A	AV	D
P									
S	7.2								
AS	*-E-	5.1							
I	*10.7	.8	#22.0						
B	*7.7	3.6	\$13.0	*16.1					
H	*7.8	1.7	*21.0	*9.3	&4.8				
A	1.9	0	0.9	1.1	1.6	1.8			
AV	*10.9	7.5	4.3	@2.9	&8.3	2.2	!5.0		
D	3.0	3.5	~7.8	@3.4	&7.7	3.3	0	3.1	

P = Paranoid
I = Impulsive
A = Anankastic

S = Schizoid
B = Borderline
AV = Avoidant

AS = Antisocial
H = Histrionic
D = Dependent

* P = 0.000, Fisher's Exact Test

P = 0.001, Fisher's Exact Test

\$ P = 0.002, Fisher's Exact Test

& P = 0.003, Fisher's Exact Test

! P = 0.006, Fisher's Exact Test

@ P = 0.015, Fisher's Exact Test

~ P = 0.025, Fisher's Exact Test

-E- the denominator of this odds ratio = 0

The present study attempts to show the association of individual categories of personality disorder with repeat suicide attempts. In interpreting the results of these associations it is important to take account of the high

rate of comorbidity among personality disorders. Comorbidity is defined as the co-occurrence of independent disorders and the presence of one disorder can markedly affect the treatment course and phenomenology of another according to Widiger et al (1991).

Comorbidity is usually understood as referring to coexisting disorders that have distinct aetiologies such as pneumonia and pneumothorax. This may not be the case with different personality disorders which overlap to a large extent with each other in terms of some of their criteria, they may thus not be independent of each other and may also share common etiological factors. It has been shown by Oldham et al (1992) and Widiger et al (1991) that there is substantial overlap among personality disorders.

Oldham et al (1992) in an investigation of comorbid personality disorders used two structured interviews: the Personality Disorder Examination -PDE- (Loranger et al, 1985) and the Structured Clinical interview for DSM-III-R personality disorders (SCID-III) as described by Spitzer et al (1987), to determine the extent of co-occurrence of DSM-III-R defined personality disorders. These investigators showed that the co-occurrence rate was lower for the SCID-III than when using the PDE and that the two interview methods revealed different patterns of comorbidity.

The percent of co-occurrence has been defined by Widiger et al (1991) as the number of patients who have both of any pair of disorders divided by the number of patients who had either. Widiger et al (1991) demonstrated that the co-occurrence rate was affected by the base rates of individual categories and that disorders with a low base rate had a low co-occurrence rate. Oldham et al (1992) presented percent of co-occurrence as well as the odds of co-occurrence in their analysis of the comorbidity of DSM-III-R personality disorders (APA, 1987) in order to circumvent the problems caused by base rates.

Comorbidity in this study is described in terms of the odds ratio. The extent of comorbidity is described in the present study in terms of the odds of association between different personality disorders.

The odds of association between two variables may be increased but not necessarily at a greater level than that which may be due to chance and the significance of these comorbid associations has been determined by using Fisher's Exact Test. Thirty-six tests of association were done and this needs to be considered when interpreting the results of this post-hoc analysis. A Bonferroni correction for multiple hypothesis testing would suggest that $P = .0013$ should be taken as a level of significance rather than the 5% level.

At the 0.13% level of significance 9 pairs of personality disorder categories have significant comorbidity. Paranoid personality disorder in this study, has significant comorbidity with antisocial personality disorder, impulsive personality disorder, borderline personality disorder, histrionic personality disorder and avoidant personality disorder. No significant comorbidity is recorded for schizoid personality disorder, but the base rate for this disorder was low in this study. Schizoid personality disorder did have a seven fold increase in the odds of association with avoidant personality disorder, but this association was not statistically significant.

Antisocial personality disorder had a markedly increased odds and significant association with impulsive and histrionic personality disorders. Impulsive personality disorder showed significant comorbidity with borderline and histrionic personality disorder. Anankastic personality had an increased odds of association with avoidant personality disorder but apart from this, had no other noteworthy comorbidity.

Increased odds for the association of dependent personality disorder and antisocial personality disorder are noted as well as for impulsive and borderline personality disorders. Remarkably, the odds of association with avoidant personality disorder was not statistically significant.

Other investigators have noted comorbidity between dependent personality disorder and avoidant personality disorder.

The overall level of comorbidity in this study is not unusual. Comparison with the study of Oldham et al (1992) needs to be cautiously done as the present study used the ICD-10 classification of personality disorders. Oldham et al (1992) used the DSM-III-R classification. These investigators demonstrated significant comorbidity in 29 pairs of disorders for the PDE and only 12 pairs of disorders diagnosed by the SCID-II. The present study if the 5% level of significance is chosen, for comparability with study of Oldham et al (1992), has 17 pairs of disorders which are comorbid.

Widiger et al (1991) in their review of comorbidity studies of Axis I disorders reported considerable co-occurrence for borderline personality disorder and the least co-occurrence for compulsive personality disorder. These reviewers noted the absence of substantial correlation in almost all studies for compulsive personality disorder. The results of the present study confirm and extend these findings of a low level of comorbidity in anankastic personality disorder, the ICD-10 equivalent of compulsive personality disorder.

Borderline personality disorder showed significant co-occurrence at the 5% level with all personality disorder categories with schizoid and anankastic personality disorders as the only exceptions. This corroborates the findings of Widiger et al (1991) that across studies there was a high correlation between borderline personality disorder and histrionic, antisocial, and passive-aggressive personality disorders followed by schizotypal, dependent, avoidant, narcissistic and paranoid personality disorder.

Fyer et al (1988b) investigated the comorbidity of borderline personality disorder and concluded that borderline personality disorder as described in DSM-III was a very heterogenous category with undefined boundaries. These investigators suggested that overlap with other categories supported the hypothesis that borderline personality disorder was not a distinct entity but rather a set of traits including instability in various areas and was present in many patients with a variety of diagnoses. They could not however confirm this hypothesis in their study.

Reviewing the correlations of avoidant personality disorder with other personality disorders, Widiger et al (1991) reported moderate correlations of avoidant personality disorder with schizoid personality disorder which was not as high nor as consistent as correlations with schizotypal,

passive aggressive, borderline and dependent personality disorder. The results in the present study are in keeping with Oldham et al (1992) who reported significant co-occurrence of paranoid with avoidant personality disorder. There was no significant co-occurrence for avoidant personality disorder and dependent personality disorder, despite the observation of a three fold co-occurrence of dependent personality disorder with avoidant personality disorder, in this study. The pattern of comorbidity of personality disorders generated from informant interviews in the present study is similar to the findings of other investigators.

These findings of a high rate of comorbidity within clinical samples have not been found for personality disorders detected within the community. It is possible that high rates of comorbidity may account for some of the clinical problems with which patients present. Samuels et al (1994) found that the high comorbidity seen in clinical samples was not found in community samples where there was hardly any overlap between personality disorders in different clusters.

These investigators noted that the greater overlap in clinical samples may result from the selection into treatment of patients with more than one personality disorder. It must however be noted that when the field work

for the Samuels et al (1994) study was done, there were no diagnostic interviews available for the assessment of DSM-III personality disorders. Samuels et al (1994) used a semi-structured method and personality characteristics were ascertained on a biographical history, observations during the interview and direct questioning of certain characteristics. It is possible that their findings of only a small degree of comorbidity in community samples may result from their methodological approach. Consistently it has been shown that clinicians have a tendency not to make multiple diagnoses of abnormal personality traits as has been found when semi-structured interviews are used.

Tyrer et al (1991) noted that there is no accepted system for ordering or ranking personality disorders when several coexist. Widiger et al (1987) suggested a dimensional approach where each disorder could exist in several grades of severity and these could then be ranked in terms of importance. The PAS (Tyrer and Alexander, 1979) records only that personality disorder which has the greatest impact on social functioning (Tyrer and Alexander, 1979). Tyrer et al (1991) later noted that there may be problems in ignoring those conditions which are pathological but lower in the hierarchy of personality problems found at examination. Pilgrim and Mann (1990) describe how an informant is asked to rank personality disorders in terms of the distress caused in social, occupational or personal

functioning to the patient.

Personality disorders co-occur with each other and also with other axis 1 disorders. Personality disorders have been demonstrated to have particular sociodemographic and clinical correlates as well. It is important to determine whether some of the clinical and sociodemographic correlates described by patients who have been identified to have personality disorder through informant interviews show similar patterns of association as seen in other studies where patients have been identified as personality disordered through their accounts only. This would allow for some comments to be made of the concurrent validity of the informant approach for the assessment of personality disorder.

Chapter 17.Personality Disorder - Psychosocial Correlates.

Table 10

Associations of psychosocial variables reported by patients and personality disorder diagnosed through informant interviews.

	No personality disorder n/N	Personality disorder present n/N	P-value
One or more CAGE symptoms of alcoholism	17/52	38/68	0.016*
Non-prescription use of drugs	9/52	25/68	0.024*
Previous psychiatric treatment	19/52	31/68	0.354
5-year history of physical violence to another adult	10/52	35/68	0.000*
5-year history of violence from another family member	17/52	30/68	0.258
Divorced status	3/52	9/68	0.228
Unemployment at entry into the study	23/52	40/68	0.141

Fisher's Exact Test $P < .05$

Jackson et al (1991) reported that some of the DSM-III/DSM-III-R postulates of sex differences in the prevalence of

personality disorder could not be sustained except for the association of male gender with antisocial personality disorder in their prevalence study of personality disorders in psychiatric inpatients. They also found no association between female sex and the presence of borderline personality disorder. These investigators do note however that this result may have been due to different base rates in their study. They suggested that the prevalence specified by DSM-III/DSM-III-R needed further investigation. In the present study no differences between males and females for the prevalence of borderline personality disorder are noted as has been previously described in DSM-IV (APA, 1994). This finding is also true for the other personality disorders in this study except impulsive personality disorder. Of all the ICD-10 personality disorders diagnosed in this study, only impulsive personality disorder had a significant association with male gender at the .010 level.

Drake and Vaillant (1985) reported an association between unemployment, poor mental health and men with personality disorder in a community sample as well as for alcoholism. Samuels et al (1994), in an investigation of personality disorders within the community, found that subjects with personality disorder had a significantly greater odds of having alcohol and drug use disorder. Yellowlees and Kaushik (1994) also reported that patients with personality

disorders had significantly higher levels of alcohol abuse, and illegal drug use when compared to patients with anxiety disorders and major functional disorders with psychosis.

The present study corroborates these findings. Patients, diagnosed as having personality disorder on informant based interviews, themselves reported significantly greater use of non-prescription use of drugs as well as significantly more CAGE symptoms of alcohol dependence (see next table) when interviewed. They also reported greater frequency of physical violence to other adults - possibly a marker for their disturbed interpersonal relationships. These patients did not report that they were more often the victims of violence from other family members than patients without personality disorder.

There was also no significant association between unemployment and personality disorder in this study. Platt (1986) has written that unemployment can be used as a marker for personality disorder. This study does not support this view: it is possible that a relatively small sample size may account for this result.

There were no significant differences in levels of psychological distress as measured by the General Health Questionnaire, Beck Depression Inventory and Rosenberg Self-esteem scale between those with a personality disorder

and those without. Lester et al (1989) have reported that suicide attempters with antisocial personality disorder reported less subjective depression when the BDI was used. It was initially postulated in this study, that those patients with personality disorder would report more life events and greater dissatisfaction with social support. The study could not confirm these hypotheses.

Casey (1989) has previously shown that mental state is more important in the determination of suicidal intent than personality disorder. The present investigation supports this finding as those patients who were personality disordered did not report different levels of suicide intent when compared to patients who were not personality disordered.

Table 11

Comparison of the mean scores of inventories completed at entry into the study by patients with or without personality disorder.

	Personality disorder absent N=52	Personality disorder present N=68	P-value
Number of CAGE symptoms of alcoholism	.6 (1.0)	1.3 (1.4)	0.0088*
Beck Depression Inventory	29.9 (11.4)	29.8 (11.8)	0.7207
Suicide Intent Scale	12.3 (6.8)	12.3 (5.6)	0.9937
Satisfaction with social support	29.2 (8.3)	27.9 (7.6)	0.1012
Number of social supports	11.8 (8.3)	12.0 (9.1)	0.9514
General Health Questionnaire Score	19.2 (6.9)	18.0 (7.1)	0.3311
Suicidal ideation	3.1 (1.2)	3.1 (1.2)	0.9789
Life events	2.7 (2.1)	3.2 (2.2)	0.2242
Self-esteem	3.2 (1.7)	3.8 (1.5)	0.1109

* $P < .05$, Wilcoxon Rank-Sum Test. Values are mean and (s.d).

Magne-Ingvar et al (1992) reported that among a group of suicide attempters and using the ISSI of Hendersen et al (1980) that suicide attempters with personality disorders had significantly fewer deep emotional relationships and those without personality disorder perceived better social interaction. They noted however in their study that a high

proportion of their patients with personality disorder were also dysthymic. It is possible that mental state may have confounded the assessment of social support in the personality disordered group. These investigators also did not use a structured interview to diagnose DSM-III personality disorders and reliability statistics for personality disorder is not reported in their study.

The present study cannot demonstrate any significant difference between the extent of social support in those patients with personality disorder nor any significant difference in satisfaction with levels of social support in patients with and without personality disorder. Generally a parasuicide population has a high frequency of patients with personality disorder and also many of the patients who were classified as not meeting the criteria of a personality disorder may nevertheless had subthreshold symptoms of personality disorder. This may lead to a biased underestimation of the association between personality disorder and the reported number of social supports and also the level of satisfaction with social support. The present findings may also not generalize to other samples of patients with personality disorder.

Seivewright (1987) using a structured interview for the assessment of personality disorder found that patients with personality disorders experienced significantly more

undesirable life events than subjects with no personality disorder: these were more likely to be self-generated and not due to chance - sociopathic traits was the most important determinant of life events. Seivewright (1987) emphasized that the confounding effect of personality disorder needed to be considered when making life event comparisons among research subjects.

McKeon et al (1984) found, using the Standard Assessment of Personality (Mann et al, 1981), that patients with obsessional, anxious and self-conscious personality traits experience significantly fewer life events than those without such traits. These investigators found an excess of life events in those patients without a personality disorder who developed an obsessive-compulsive neurosis and concluded that those patients with normal premorbid personalities required an excess of stressful life events for the development of these symptoms. Other authors (Samuels et al, 1994) have also demonstrated that life events do not necessarily occur at random and have demonstrated that many life events do occur more frequently in those patients with personality disorder. Samuels et al (1994) noted that many of these events suggested difficulties with interpersonal relationships such as quarrels, arguments and extramarital affairs. In the present sample of patients these findings could not be confirmed.

Tyrer et al (1990) have noted that patients with personality disorder consistently report more neurotic symptomatology as assessed by various rating instruments. This finding could not be substantiated in this group of patients. Nace et al (1991) reported that in a group of substance abusing patients that those patients with personality disorders reported a greater number of problems associated with alcohol and greater abuse of other substances. These authors also noted increased dissatisfaction with relationships and emotional discharge among patients with personality disorder.

While the present study is unable to show an association between decreased social support, life events, psychological distress and personality disorder, a highly significant association between personality disorder and a 5-year history of violence to another adult is noted as well as a greater number of CAGE symptoms of alcoholism and a greater frequency of substance abuse. Some of these findings are in keeping with known correlates of personality disorder and validate the diagnoses of personality disorder based on informant interviews.

The next chapter presents an analysis of the association of various categories of personality disorder with patient reports of previous suicide attempts at baseline.

Chapter 18Personality Disorder and Repetition of Parasuicide.

Table 12

Personality disorder in patients with and without a history of previous suicide attempts at baseline.

	First ever attempt n/N	One or more previous attempts n/N	P-value
Paranoid	18/70	19/50	.166
Schizoid	1/70	3/50	.307
Dissocial	2/70	6/50	.066
Impulsive	17/70	17/50	.305
Borderline	8/70	19/50	.001*
Histrionic	11/70	9/50	.806
Anankastic	12/70	4/50	.180
Anxious	17/70	19/50	.112
Dependent	5/70	6/50	.523
Any specific personality disorder	39/70	29/50	.853

*Fisher's Exact Test $P < .05$

Zanarini et al (1990) demonstrated that manipulative suicide attempts was characteristic of borderline personality and could discriminate borderline personality disorder from other personality disorders. The association

of borderline personality disorder with repetition of parasuicide has not been determined locally. This association remains significant even when removing the criterion "makes repeat suicide attempts" from the criteria set ($P=.001$, Fisher's Exact Test) as has been found in North America.

Antisocial personality disorder or its older equivalent description of sociopathy has been shown in previous investigations to be a predictor of subsequent suicide attempts (Buglass and Horton, 1974; Morgan et al, 1976). Garvey and Spoden (1980) noted more frequent non-serious suicide attempts in patients with antisocial personality disorder. Soloff et al (1994) have shown that antisocial personality is one of the discriminators for suicide attempts in patients with borderline personality disorder. Soloff et al (1994) could not confirm that alcoholism or drug use disorders discriminated suicide attempters in patients with borderline personality disorder. There is a trend towards significance at the 6% level for the association of dissocial personality disorder with repeater status in this study.

Zimmerman and Coryell (1989) found in a community study that any personality disorder was associated with a history of attempted suicide. Zimmerman and Coryell (1989) did not explore the relationship of personality disorder with

repetition of parasuicide specifically. Our findings are in keeping with these findings and with previous studies such as Casey (1989) which have demonstrated a high frequency of personality disorders of various types in suicide attempters. The present study however finds no evidence that personality disorder in general is associated with repetition of suicide attempts. The data indicates that it is particular personality disorders such as borderline personality disorder and antisocial personality disorder which may be associated with repeat suicide attempts.

A high prevalence of comorbidity has been demonstrated for individual personality disorders in this study and similarly it is to be expected that many of the other variables which are described will be highly correlated with each other - as has been demonstrated for substance abuse and alcohol problems in patients who were diagnosed with personality disorders. Accordingly in order to control for this high correlation of variables with each other and the possible confounding of the estimates of association between variables a multivariate analysis was next done in order to control for confounding and to determine the effects of high correlation or collinearity. Variables found to be associated with repeater status in the bivariate analysis of the data set were subjected to further multivariate analysis. Table 13 illustrates the results of the logistic regression.

Table 13

Logistic regression model for the predictors of one or more previous suicide attempts reported at baseline.

	Beta	SE	Relative Odds	95% Confidence Interval
Unemployment	1.1208	.5074	3.0673	1.1346 - 8.2920
Previous psychiatric treatment	2.2436	.5320	9.4272	3.3231 - 26.7437
Suicidal ideation	.8315	.2853	2.2967	1.3131 - 4.0172
Age	.0587	.0272	1.0604	1.0054 - 1.1185
Borderline personality disorder	1.4752	.6045	4.3719	1.3369 - 14.2962
Anankastic personality disorder	-2.1496	.9271	0.1165	0.0189 - 0.7171

Chi-square = 58.66, P = 0.0000

Unemployment emerges as a significant covariate with repetition of parasuicide in this multivariate analysis of baseline data. Patients who are unemployed have three times the risk of being categorized as parasuicide repeaters compared to those patients who are employed. Morton (1993) demonstrated that unemployment discriminated those patients with a past history of repetition from those without a past history but also noted that personality disorder was a significant confounder of this association and was a possible explanation of her results. The present study,

controlling for the presence of personality disorder statistically, demonstrates unequivocally, a significant association between unemployment and the repetition of parasuicide.

Unemployment may lead to suicide attempts or those who attempt suicide may be less likely to find employment because of another psychiatric disorder. Gunnell et al (1995) in an ecological study confirmed a strong relationship between socioeconomic deprivation (unemployment) and parasuicide. Platt (1986) was of the opinion that unemployment could be used as an indicator of personality deviance. This theory does not hold true in this study, where there was no significant association between unemployment and personality disorder. It seems more likely that particular personality disorders and unemployment have independent significant main effects on the repetition of parasuicide. Even in Morton's (1993) study, the presence of personality disorder was not systematically ascertained. This study, using more rigorous criteria for the diagnosis of personality disorder, confirms the findings of the earlier studies of Buglass and Horton (1974) and Garzotto et al (1976), that unemployment is a predictor of repetition of parasuicide. Wilson and Walker (1993) also concluded in their review of unemployment and health that there was an association between parasuicide and unemployment. They also noted that

an inability to cope with stressful life circumstances could contribute to the association of unemployment and parasuicide.

Kessler et al (1995) have shown that early onset of psychiatric disorders especially conduct disorders among men and anxiety disorders among women result in truncated educational attainment with dropouts from high school. This may lead to a greater risk of unemployment. Wilson and Walker (1993) also stressed the importance of gender and age factors in understanding the relationship of unemployment and parasuicide. They show that the association of unemployment and parasuicide does not hold up in older men (over the age of 55) and younger women. Wilson and Walker (1993) also noted the association between increases in suicide rate among males and rises in unemployment in Europe.

Previous studies of risk factors for further suicidal behavior have relied heavily on chart reviews (Kreitman and Foster, 1991). The relationship of increasing levels of suicidal ideation to repetition of parasuicide has not been described. Fawcett (1992) noted that a history of suicidal ideation correlated with late suicide in their follow-up study of suicide risk factors in depressive and panic disorders. Van Aalst et al (1992) also reported that there was an association between suicidal ideation and a history

of previous suicide attempts in a group of patients who had made violent suicide attempts. The risk of categorization as a repeater increases two-fold for the presence of every ordinal increase in the level of suicidal ideation using a scale derived from the General Health Questionnaire of Goldberg and Hillier (1979) which has been described and used by Goldney (1989).

This would suggest that patients who repeat parasuicide experience significantly more intense levels of suicidal ideation around the time of their suicide attempts than patients who do not repeat this behavior. These are interesting findings as they indicate that these repetitive attempts may not just occur as recurrent manipulative attempts in order to change their environment and that they are more than "cries for help". Similar findings have been noted among self-mutilation in borderline personality disorder. Dulit et al (1994) noted an increase in acute and chronic suicidal ideation in borderline patients who self-mutilated themselves.

Previous authors have described an underlying emotional reactivity in patients who attempt suicide. Sabo et al (1995) followed up changes in self-destructiveness of borderline patients in psychotherapy and found that suicidal behavior declined significantly but suicidal ideation did not. These investigators did not find any

correlation between suicidal behavior (lethally motivated suicidal behavior in their study) and suicidal ideation nor with self-harm behavior (non-lethally motivated). Their cohort of borderline patients also continued to show self-harm behavior.

A diagnosis of Borderline personality disorder seems to increase four-fold the likelihood of repetition of parasuicide. This is the first study to demonstrate this association with the repetition of parasuicide outside of North America for this personality disorder.

Previous studies have not focussed on those factors which decrease the risk of further suicidal behavior. The present study indicates that in the presence of anankastic personality disorder the likelihood of a history of previous of parasuicide is 88% less than in its absence. These results may be interpreted as biased because of the relative low reliability of the diagnosis of anankastic personality disorder in this study. However this association appears to be valid. Borderline personality disorder which was documented to have high reliability in this study seemed to have a reduced discriminant validity. It had a high rate of comorbidity with other personality disorders. Anankastic personality disorder had a lower reliability estimate but seemed to have higher discriminant validity - it had the least rate of

comorbidity with other personality disorders. There is also some support for this observation in the literature. Zimmerman and Coryell (1989) reported the results of the demographic correlates and comorbidity of personality disorder in a nonpatient sample. They noted that individuals with compulsive personality disorder reported a history of suicide attempts less frequently than other personality disorder categories.

Increasing age and previous psychiatric treatment also significantly increase the odds for repetition of parasuicide. Increasing age and previous treatment have been demonstrated to be important predictors of repetition of parasuicide by Kreitman and Foster (1991). Likewise in this study, previous treatment status has the highest odds for repeater status, while increasing age is also associated with a significant 6% increase in the odds of for classification as a repeater for every year's increase in age.

Multiple linear regression with the number of previous suicide attempts as the dependent variable was done next in order to determine the effects of the independent variables on the reported number of previous attempts at baseline.

Table 14

Multiple linear regression model for the reported number of previous suicide attempts at baseline.

	Beta	SE	T	P-value
Dissocial personality disorder	1.2757	.4237	3.010	.003
Borderline personality disorder	.7972	.2589	3.079	.003
Self-esteem	.2732	.0655	4.171	.000
Previous psychiatric treatment	.9307	.2048	4.455	.000
Completion of occupational training	-0.4816	.2131	-2.259	.026

$F(5,114) = 16.42, P = .0000, R\text{-Square} = .4187$

This study could not confirm the findings of Kreitman and Foster (1991) that there is a significant increase in the frequency of unskilled workers - the equivalent of Kreitman's Social Class V - among the repeater parasuicide group. There is limited support for the observations of the Edinburgh study though. A multiple regression model for the total number of previous suicide attempts, as reported by the patients at baseline, indicates that workers who have completed their occupational training have a significantly decreased number of previous suicide attempts. Completion

of occupational training would seem to an indicator or a protective factor for reports of a decreased number of previous suicide attempts.

This model also showed that a decrease in self-esteem was associated with an increase in the number of previous suicide attempts. Completion of occupational training, like self-esteem, may reflect an underlying personality characteristic describing competency and mastery of problems or adversity. The present model is unable to determine whether occupational training per se increases problem solving skills and decreases the total number of previous suicide attempts reported at baseline.

This model also indicates, as the results of the logistic regression model showed, that previous psychiatric treatment and borderline personality disorder significantly contribute to the number of previous suicide attempts. The logistic regression model could not confirm whether dissocial personality disorder was associated with previous suicide attempts as documented in previous studies. It is highly likely that the present study lacked sufficient power to confirm the results of previous investigations which found an association between repetition of parasuicide and antisocial personality disorder. The bivariate statistical tests of association support this view, as there was a trend toward significance in the

association of dissocial personality disorder with previous suicide attempts. A multiple linear regression model in the present study does confirm that antisocial personality disorder is a significant predictor of reports of an increased number of previous suicide attempts at baseline.

Chapter 19

The Follow-up Study - The Relationship of Personality
to Repetition of Parasuicide in the Follow-up Period
and to Personality Disorder.

Table 15

Distribution at baseline of the mean age, reported number of previous suicide attempts, expressed suicide intent and questionnaire scores in those patients who completed the follow-up evaluation and those who were lost to follow-up.

	Patients followed-up n=80	Patients not followed-up n=40	P - value
Age	28.2 (10.1)	30.6 (10.3)	.1424
GHQ Score	17.9 (7.6)	19.8 (5.6)	.3258
Self-esteem score	3.5 (1.6)	3.6 (1.6)	.7405
BDI Score	28.8 (11.4)	32.0 (11.9)	.2492
Suicide Intent	11.6 (6.3)	13.6 (5.7)	.1300
Life Events	2.8 (2.1)	3.3 (2.3)	.3096
Satisfaction with Social Support	28.1 (8.7)	29.2 (6.1)	.8368
Number of Social Supports	12.7 (9.8)	10.3 (5.8)	.3341
CAGE symptoms of alcoholism	.9 (1.3)	1.3 (1.2)	.4017
Numbers of previous suicide attempts reported at baseline	.7 (1.1)	.7 (1.7)	.3671

Values are mean and (s.d). Wilcoxon Rank-Sum Test used.

Follow-up information was available for 66.67% of the original sample who could be traced or who gave consent to the follow-up evaluation. Before commenting on the association of personality dimensions and the repetition of parasuicide in the follow-up period it is important to determine whether those patients who were available for follow-up were representative of the sample at baseline and that they did not differ in any systematic way from those patients who were lost to follow-up. A comparison of interviews done at baseline indicates that there were no systematic differences in the variables which were examined at baseline between those who did and did not complete the follow-up evaluation.

During the follow-up only two patients changed from "first-ever" status at baseline to "repeater" status. All other suicide attempts in the follow-up period occurred in patients who had a history of previous suicide attempts at baseline. This was a nonsignificant change (using the McNemar Test, $P > .10$) in the proportions of patients classified as "first-ers" and "repeaters" at the beginning and at the end of the study. Bias due to the classification of patients as repeaters of parasuicide at the beginning of the study is thus minimal.

Other characteristics of patients who did or did not complete follow-up interviews are compared in table 16.

Table 16

Other characteristics of patients at baseline who completed follow-up evaluations compared to those patients who were lost to follow-up.

	Patients followed-up n=80	Patients not followed-up n=40	P - value
Males	25	16	.415
Divorced	6	6	.211
Single	39	16	.438
Widowed	5	0	.168
Married	30	18	.437
Unemployed	47	16	.080
One or more CAGE symptoms of alcoholism	32	23	.082
Non-prescription use of drugs	24	10	.669
Personality disorder	42	26	.242
Previous psychiatric treatment	36	14	.331
5-year history of violence to another adult	31	14	.842
5-year history of violence from another family member	30	17	.692

P-value determined using Fisher's Exact Test.

Table 17

Suicidal behavior during the follow-up period and suicidal ideation reported at the follow-up interview.

	n	%
<u>Follow-up sample size = 80</u>		
No further attempts	70	87.5
Further non-fatal attempts	8	10.0
Completed suicide	2	2.5
<u>Follow-up sample size = 79*</u>		
Reports of suicidal ideation within the last month before the follow-up interview	39	49.37

* One patient who died before completion of the follow-up interview and on whom there was no available information regarding suicidal ideation was thus excluded.

There was a wide range in the follow-periods for the participants in this study. This ranged from 6 to 20 months with a median of 9 months of follow-up. Those patients who made repeat suicide attempts in the follow-up period did so after a median of 5 months had elapsed and 75% of these did so before seven-and-half months had elapsed from their entry into this study. Previous investigators (Bancroft & Marsack, 1977) have shown that repetition of parasuicide occurs mainly within in the first few months after a

suicide attempt and declines thereafter. Other investigators (Buglass & Horton, 1974a; Bancroft et al, 1975) have reported that there is a 1-2% annual rate for completed suicide among cohorts of patients who have attempted suicide. In this study variables, which were found to be associated with repetition of parasuicide in the follow-up period, are applicable mainly to recurrence of suicidal behavior in the short term (or the first seven-and-half months) following parasuicide rather than for a year or longer period.

It is important to describe some aspects of the reliability of the Temperament and Character dimensions as well as the intercorrelations among the personality dimensions in the TCI before discussing the relationship of these dimensions, which were measured at follow-up, to repetition of suicidal behavior during follow-up period. This needs to be noted when these relationships are analysed. An analysis is also done which describes the relationship of the personality dimensions of the TCI to the presence of personality disorder as diagnosed in patients when using the Standardized Assessment of Personality.

Table 18

Correlations among the TCI
temperament and character scales.

N=79

	NS	HA	P	RD	SD	C	ST
NS	1.0000						
HA	-0.0451	1.0000					
P	0.0068	-0.2700	1.0000				
RD	0.1109	-0.1425	0.2801	1.0000			
SD	-0.2434	-0.6200	0.1439	0.0400	1.0000		
C	-0.2235	-0.1589	-0.0450	0.4433	0.3545	1.0000	
ST	-0.0297	-0.1602	0.0976	0.0798	-0.0517	0.1331	1.0000

NS = Novelty seeking

HA = Harm avoidance

P = Persistence

RD = Reward dependence

C = Cooperativeness

ST = Self-transcendence

SD = Self-directedness

The factor structure of the temperament and character scales have been described by Cloninger et al (1994). A factor analysis has not been undertaken in the present work; instead, correlations between the temperament and character scales have been computed and are compared to

those reported by Cloninger et al (1994). These investigators reported correlations above the .4 level for harm avoidance and self-directedness; for reward dependence and cooperativeness as well as self-directedness and cooperativeness. The correlations among TCI temperament and character scales in this study are similar to those reported by Cloninger et al (1994) except for a lower correlation between self-directedness and cooperativeness in this study. Cloninger et al. (1994) reported a correlation of .57. This difference may be accounted for by a different and smaller group of patients. This parasuicide group is probably not representative of the distribution of the temperament and character scores within the community.

Table 19

Test-retest correlations for the TCI in hospitalized patients over a two month interval.

N = 26

	Spearman's rho	P-value**
Novelty seeking	.7780	P<.001
Harm avoidance	.6750	P<.001
Reward dependence	.3310	.05<P<.10*
Persistence	.8425	P<.001
Self-directedness	.5384	.001<P<.01
Cooperativeness	.5577	.001<P<.01
Self-transcendence	.8135	P<.001

** P-values in this table were determined using two-tailed tests of statistical significance.

* This coefficient is significant using a one-tailed test of statistical significance - .025<P<.05.

Test-retest reliability of the Temperament and Character Inventory was examined in another group of patients. Ideally this should have been done in the group of parasuicide patients who are described in this thesis. However it was decided to do this reliability study in another group of patients in order to circumvent the problems of fatigue and non-cooperation in the patients with parasuicide who had so generously given of their time

in order to complete the questionnaires which have been described. The reliability coefficients reported here were determined in a group of patients admitted to a psychiatric ward for psychotherapy at Groote Schuur Hospital and who are being studied to determine the effects of personality on response to treatment. This group did not include the parasuicide patients on which the larger study is based.

Overall the test-retest correlations for most of the temperament and character dimensions are similar to those reported by Cloninger et al (1994) in a group of inpatients over a six-month interval. Unsatisfactory test-retest correlation is reported for reward dependence in this study. This coefficient is nonetheless still significant if a one-tailed test is chosen to determine the level of significance. The test-retest correlations reported here were done on a group of patients admitted to a psychiatric ward for group and individual psychotherapy. It is possible that the reward dependence score was affected by exposure to the therapeutic milieu or is an effect of a small sample in this reliability study; however it may also indicate a poorer test-retest reliability for this dimension.

Table 20

Dimensions of temperament and character as well as psychological distress at follow-up and reports of repetition of parasuicide since entry into the study.

N=79**

	No further attempts n=70	Repetition of parasuicide n=9	P-value
Harm avoidance	20.0 (7.1)	26.4 (4.7)	0.0073*
Novelty seeking	18.1 (4.7)	18.2 (4.4)	0.9569
Reward Dependence	14.5 (3.4)	15.4 (2.2)	0.3505
Persistence	4.5 (1.9)	4.0 (2.3)	0.4542
Self-directedness	25.0 (7.5)	18.8 (7.9)	0.0417*
Cooperativeness	29.5 (6.0)	29.1 (5.0)	0.6106
Self-transcendence	20.1 (6.1)	20.5 (4.8)	0.9569
General Health Questionnaire	7.9 (7.7)	14.3 (10.6)	0.0663
Life events	2.2 (2.0)	3.4 (2.1)	0.1035

* $P < .05$, Wilcoxon Rank-Sum Test. Values are mean and (s.d).

** 79 patients completed the TCI: follow-up information was available for one patient who committed suicide but who did not complete the TCI.

Brent et al (1994) reported that adolescent suicide attempters were higher in harm avoidance than controls. This study indicates that patients who made repeat suicide

attempts had significantly higher harm avoidance scores. This may be accounted for by a trend towards greater psychological distress at follow-up in patients who made repeat suicide attempts. Harm avoidance has been shown to be sensitive to mood, but there were no significant differences in the levels of psychological distress (as measured by the GHQ), at the time of completion of the Temperament and Character Inventory, in those patients who had made repeat suicide attempts during the follow-up period. Those patients who repeated parasuicidal behavior also had significantly lower self-directedness scores.

The TCI has been recommended as a screen for DSM-III-R personality defined diagnoses by Svrakic et al (1993). It is not known to what extent the TCI is able to predict ICD-10 (WHO, 1992) based personality disorder diagnoses. Svrakic et al (1993) suggested that low self-directedness and low cooperativeness characterized patients with personality disorder. This hypothesis was examined in a logistic regression model to determine whether these character dimensions retrospectively predicted personality disorder diagnosed by means of informant based interviews at baseline.

Table 21

Logistic regression model of temperament and character traits as predictors of the diagnosis of personality disorder at baseline.

N=79

	Beta	SE	Relative Odds	95% Confidence Interval
Self-directedness	-.1121	.0480	.8939	.8137 - .9820*
Harm Avoidance	-.0991	.0519	.9056	.8180 - 1.0026
GHQ	-.0700	.0385	.9323	.8646 - 1.0054
Age	-.0045	.0257	.9955	.9416 - 1.0468

Chi-square = 10.89, P=.0278

*the only confidence interval which did not include one or unity and which indicated a significant relative odds.

The presence of personality disorder - diagnosed by the Standardized Assessment of Personality at baseline - was entered as an outcome or dependent variable of the dimensions of character and temperament while controlling for the effects of mood on the TCI at follow-up by asking the patient to complete the scaled version of the GHQ (Goldberg and Hillier, 1979) at the same time that the TCI was completed. Age has also been shown to be correlated with self-directedness scores (Cloninger et al, 1993) and

was also entered as a covariate. This model confirms that self-directedness had a significant and inverse relative odds in favor of the presence of personality disorder as predicted by Svracic et al in (1993). In other words, for every ordinal increase in self-directedness the probability of a diagnosis of a personality disorder at baseline is 10% less. Level of cooperativeness was not found to be a significant predictor for the presence of personality disorder in this study as were other personality dimensions and these were omitted from the final logistic regression model.

Bulik et al (1995) could not confirm that cooperativeness discriminated between bulimic patients with or without a personality disorder. This group of investigators also found that there were significant differences in harm avoidance scores in patients with or without a personality disorder. This study could not confirm this finding but there is a trend for harm avoidance to be a negative predictor of personality disorder. Bulik et al (1995) found that low self-directedness had low sensitivity and high specificity in the prediction of the presence of personality disorder in their group of patients. They concluded that self-directedness score was useful to screen for personality disorders in clinical samples which had a high base rate of personality disorder and when the pretest probability of personality disorder was high. They

questioned the usefulness of this dimension to screen for personality disorder within the community.

Table 22

Multiple linear regression model of self-directedness on other temperament and character dimensions, psychological distress at follow-up and personality disorder status at baseline.

	Beta	SE	T	P-value
Personality disorder at baseline	-2.9909	1.1840	-2.526	0.014
Harm avoidance	-.5241	.0969	-5.404	0.000
Novelty seeking	-.3352	.1271	-2.637	0.010
Cooperativeness	.2447	.1013	2.414	0.018
GHQ score	-.3041	.0819	-3.709	0.000
Constant	38.2934	4.8755	7.854	0.000

$F(5, 73) = 21.79, P = 0.0000, R\text{-Square} = .5988$

Perry (1992) concluded that current methods for making personality disorder diagnoses have high reliability but also yielded diagnoses that were not comparable across different methods for making personality disorder diagnoses beyond chance. He noted that variance was accounted for by different raters, different interview occasions, self-report versus observer report and instrument sensitivity to state effects. He reported a poor level of agreement, with a median kappa of .25 between different diagnostic

instruments. Convergent validity for personality disorder categories determined by the Standardized Assessment of Personality using another instrument to diagnose personality disorder was not determined in this study.

Svrakic et al (1993) showed that the Temperament and Character Inventory could be used to screen for the presence of personality disorder. These investigators showed that low self-directedness scores and low cooperativeness scores increased the likelihood of the presence of a personality disorder. Conversely personality disorder should predict lower self-directedness scores. This hypothesis was examined in this study using a multiple linear regression model and there is an indication that personality disorder as determined at baseline does have some predictive validity. The model using self-directedness as an outcome variable, showed that the presence of personality disorder diagnosed at least six-months before accounted for 4% of the variance in the self-directedness score at follow-up when the effects of mood, age and other scales of the temperament and character inventory were taken into account. Self-directedness has been shown to vary inversely with harm avoidance and to also increase with age. These variables need to be accounted for when assessing the effects of personality disorder on self-directedness. Age did not contribute significantly to the final regression model and was eliminated from the

analysis.

This study could not substantiate the finding of Svrakic et al (1993) that low cooperativeness was associated with the presence of personality disorder. There are major methodological differences between this study and that of Svrakic et al (1993). That group of investigators were concerned about validating the Temperament and Character inventory. They showed that self-reports of low self-directedness and cooperativeness predicted the number of personality symptoms in all categories. They also showed that self-directedness and cooperativeness predicted the presence of any personality disorder by differentiating patients varying in risk from 11% to 94%.

Svrakic et al in their 1993 study used patient self-report to assess for the presence of personality disorder using the Structured interview for DSM-III-R Personality Disorders (SIDP-R) described by Pfohl et al (1989). In order to control for the effects of mood, these investigators used the Inventory of Depressive symptomatology, self-rated version described by Rush et al (1986). The present study used informant based interviews to derive a diagnosis of personality disorder and related these informant derived diagnoses of personality disorder to the Temperament and Character Inventory of Cloninger et al (1993).

Although the results of the logistic regression model and multiple linear regression model are in keeping with some of the predictions of Svrakic et al (1993), the associations demonstrated in this study between self-directedness and personality disorder, were not as strong as those described by Svrakic et al (1993). The differences between the present study's findings and that of Svrakic et al (1993) are probably accounted for by different methods for the ascertainment of personality disorder and different groups of patients - theirs' was a group of psychiatric inpatients - rather than a group of patients who showed suicidal behavior as in the present study. There was also an extremely long interval between the time of the assessment of personality disorder and when the patients completed Temperament and Character Inventory in the present study. The findings of this study are in keeping with that suggested by Svrakic et al (1993), that low self-directedness is predictive of the presence of personality disorder. It would seem also that personality disorder as determined by the Standardized Assessment of Personality does have predictive validity in terms of self-directedness scores as measured at follow-up.

Chapter 20Language as a Potential Confounder of the
Findings of this Study.

Table 23

Distribution of sociodemographic variables at first interview according to the language used at that interview.

	Afrikaans n=40	English n=80	P-value
Females	28/40	51/80	.545
Employed	20/40	37/80	.704
Completion of occupational training	7/40	32/80	.014*
No occupational training	30/40	41/80	.018*
Previous parasuicide	10/40	40/80	.011*
Non-prescription use of drugs	5/40	29/80	.009*
Criminal offenses	4/40	7/80	1.000
Previous psychiatric treatment	9/40	41/80	0.003*
5-year history of violence to another adult	10/40	35/80	0.049*
5-year history of violence from another family member	16/40	31/80	1.000

* P<.05, using Fisher's Exact Test

Since two language versions - English and Afrikaans - were

used for all interviews and questionnaires in this study it would be important to document the extent of the variance introduced by this. Those patients who initially completed their interviews in Afrikaans reported significantly less occupational training as well as contact with psychiatry before. Those whose interviews were in English more often had a history of violence to others and substance abuse. Language status in this bivariate analysis emerged as a potential confounder of the risk factors which had been developed earlier in this study for the repetition of parasuicide as patients who were interviewed in Afrikaans had significantly less often a history of previous parasuicide.

These differences between these language groups may result from true sociodemographic differences across language groups or from selection forces. That group of Afrikaans patients who were more poorly educated and untrained may possibly be selected into a public hospital such as Groote Schuur. A third possible explanation is that these differences reflect bias resulting from faulty translations of the questionnaires and interviews. These different explanations are further explored in relation to age, levels of education, questionnaire scores and variables generated from interviews in Table 24.

Table 24

Language at first interview and questionnaire scores as well as age and years of schooling.

	Afrikaans n=40	English n=80	P-value
Age	28.3 (10.5)	29.4 (10.1)	.3806
Years of Schooling	8.5 (2.7)	10.1 (1.7)	.0021*
GHQ score	19 (7.1)	18.3 (7.0)	.5720
Self-esteem	3.5 (1.6)	3.5 (1.6)	.9756
Suicide Intent	12.0 (5.3)	12.4 (6.6)	.9689
Satisfaction with Social Support	27.2 (8.7)	29.1 (7.5)	.4744
Number of Social Supports	8.7 (6.5)	13.5 (9.3)	.0004*
CAGE symptoms of alcoholism	.9 (1.1)	1.1 (1.3)	.4341

*P<.05, Wilcoxon Rank-Sum Test. Values are mean and (s.d).

Remarkably - apart from reports of significantly less numbers of social supports - no group differences were detected between English and Afrikaans in their questionnaire scores. There were more striking sociodemographic differences in terms of schooling and completion of occupational training which distinguished these groups than variation in the questionnaires scores across these language groups. These results possibly reflect sociodemographic group differences or selection

forces. Both explanations are probably involved.

Those patients who were interviewed in English seemed to have had more contact with psychiatric services previously but were also more educated on average than those patients who completed their interviews in Afrikaans. It should also be noted that probably most of that target population of patients who attend ward C23 are bilingual and patients with more education may have elected to do their interviews in English even though they may have been Afrikaans speakers whereas those Afrikaans speakers with less education could have insisted on doing the interviews and questionnaires in Afrikaans as they may have felt uncomfortable in a language which was not their home language.

A further check on the variation introduced by the use of two language versions of the interviews at entry into the study is provided by an analysis of the relationship of the language used in interviews with informants to personality disorder diagnoses generated from the Standardized Assessment of Personality. Selection forces as an explanation for group differences would presumably be less operative here as this interview was conducted with an informant. The findings of this analysis are presented in Table 26.

Table 25

Language used at interview with informant
and personality disorder among patients.

	Afrikaans n=43	English n=77	P-value
Paranoid	10/43	27/77	0.219
Schizoid	0/43	4/77	0.295
Dissocial	1/43	7/77	0.256
Impulsive	11/43	23/77	0.677
Borderline	6/43	21/77	0.113
Histrionic	5/43	15/77	0.316
Anankastic	5/43	11/77	0.785
Anxious	11/43	25/77	0.534
Dependent	2/43	9/77	0.324
Any personality disorder	19/43	49/77	0.054

P-value was determined using the Fisher's Exact Test.

This analysis shows no significant relation - apart from a trend for unspecified personality disorder to be associated with the English version of the Standardized Assessment of Personality in interviews with informants. Overall these findings suggest that variation introduced into the studies findings as a result of a biased translation is minimal and that these group differences are as a result of selection

forces of a more poorly educated Afrikaans group into the study. An examination is done next of the relation of language status at follow-up to the Temperament and Character Inventory.

Table 26

Dimensions of temperament and character
and language used at follow-up.

	Afrikaans n=21	English n=58	P-value
Harm avoidance	20.8 (4.5)	20.5 (7.9)	.8853
Novelty Seeking	16.9 (4.3)	18.4 (4.8)	.1848
Reward Dependence	11.9 (1.8)	15.6 (3.2)	.0001*
Persistence	3.6 (1.1)	4.7 (2.1)	.0345*
Cooperativeness	26.4 (5.9)	30.5 (5.6)	.0060*
Self-directedness	25.1 (6.5)	24.0 (8.2)	.5416
Self-transcendence	22.0 (4.0)	19.5 (6.5)	.1460
General Health Questionnaire	8.9 (7.3)	8.5 (8.6)	.5416

* $P < .05$, Wilcoxon Rank-Sum Test. Values are mean and (s.d).

Striking differences were noted between language groups for the reward dependence, persistence and cooperativeness dimensions. These differences only affected certain dimensions and if this is due to variance introduced by translation then it should have affected most of the dimensions of the TCI rather than specific dimensions only. Indeed these findings provide further support for the conclusion that most group differences are not accounted for by translation problems. It should also be noted that the Afrikaans group had reported significantly less numbers

of social supports than the English group when they had been interviewed six-months earlier. At follow-up therefore these findings of lower cooperativeness and reward dependence are in keeping with those findings found earlier. Individuals who are low in cooperativeness are described by Cloninger et al (1994) as socially intolerant and those who are low in reward dependence tend to be withdrawn and detached. Reward dependence scores are influenced by both gender and level of education (Cloninger et al, 1994). These Afrikaans patients also had significantly less schooling. It is doubtful that the differences across language groups in this highly select parasuicide population would replicate to the general population.

Since language status has been demonstrated in this analysis to be associated with both exposure as well as the outcome of interest or repetition of parasuicide it is a possible confounder of those risk factors for repetition of parasuicide which were described earlier including those which had not been shown to have an association with this suicidal behavior. It was thus essential to undertake a further multivariate analysis to control for the possible confounding of the results of this study by language status. This analysis included all potential risk factors. Potential explanatory variables such as occupational training, numbers of social support, years of schooling,

use of psychoactive drugs still did not contribute significantly to reports of previous parasuicide when controlling for the effects of language, personality disorder, suicidal ideation, age, previous psychiatric treatment and employment status. The final regression model is shown in Table 28.

Table 27

Logistic regression model for the predictors of previous suicide attempts reported at entry into the study when adjusting for the language used at that interview.

	Beta	SE	Relative Odds	95% Confidence Interval
Unemployment	1.0983	.5096	2.9990	1.1046 - 8.1425
Previous psychiatric treatment	2.0896	.5419	8.0816	2.7940 - 23.3757
Suicidal ideation	0.8356	.2877	2.3061	1.3123 - 4.0527
Age	0.0613	.0281	1.0632	1.0063 - 1.1234
Borderline Personality Disorder	1.4191	.6037	4.1333	1.2660 - 13.4947
Anankastic Personality Disorder	-2.0258	.9271	0.1318	0.0214 - 0.8116
Afrikaans	-0.6610	.5543	0.5163	0.1742 - 1.5300

Chi-square = 60.10, P= 0.0000

Likelihood ratio test comparing this model, including Afrikaans as a covariate, to the reduced model in Table 13 (page 235) shows chi-square = 1.44, 1 df, P>.10.

Afrikaans did not emerge as a significant confounder of those risk factors which were found earlier in this study. Further this model - with Afrikaans as a covariate - adds nothing to the model which was developed previously and

language status is not a major confounder of the findings of this study. The model shown in Table 13 is the preferred model as it is more parsimonious and not statistically different to the model which includes language status as a covariate.

The relation of dimensions of temperament and character to a previous diagnosis of personality disorder at entry into the study was next examined adjusting for language status at the follow-up interview. Again all seven dimensions of the TCI were entered into the model. The final regression model with Afrikaans retained as a covariate is shown in Table 29. Specifically neither reward dependence nor cooperativeness were associated with risk for personality disorder when controlling for self-directedness, harm avoidance, psychological distress, age and language status. The final model is not statistically different to the model shown in Table 21 which again is the preferred model as it is more parsimonious.

Table 28

Logistic regression model of temperament and character dimensions at follow-up as predictors of the diagnosis of personality disorder at baseline adjusting for language status at the follow-up interview.

	Beta	SE	Relative Odds	95% Confidence Interval
Self-directedness	-.1114	.0491	.8945	.8125 - .9849
Harm Avoidance	-.1023	.0526	.9027	.8144 - 1.0007
GHQ	-.0655	.0388	.9365	.8680 - 1.0105
Age	-.0117	.0267	.9883	.9380 - 1.0414
Afrikaans	-.7442	.5730	.4751	.1545 - 1.4605

Chi-square = 13.48, P=.0193

Likelihood ratio test comparing this model, including Afrikaans as a covariate, to the reduced model in Table 21 (page 255) shows chi-square = 1.72, 1 df, P>.10.

In conclusion there were group differences between those patients who were interviewed in English or Afrikaans but these are probably accounted more by sociodemographic group differences and selection forces rather than language problems caused by translation. Despite these group differences they did not have a significant impact on the main findings of this study.

PART 4

The Study - Findings, Limitations and Implications.

Chapter 21The Findings and Implications of this Study.

SUMMARY OF THE FINDINGS OF THE STUDY

Within the constraints which have already been described this study was able to document a reasonably satisfactory level of reliability for the instruments which were used at baseline and follow-up interviews. The sample of patients studied was, in general, representative of a typical parasuicidal population. Our sample however was skewed towards an older age distribution because of the necessary methodological limitation which confined this study to patients over the age of 18 in order to make reliable and valid diagnoses of personality disorder.

This study distinguished between patients with a history of previous suicide attempts and those who had made their first attempt at entry into the study in order to determine some of the characteristics associated with repetition. Analysis of the data set when all possible follow-up data was available indicated that bias due to misclassification using this approach was minimal as an insignificant number of patients changed their baseline status at follow-up. Only two patients with no previous history of suicide attempts at admission to the study made repeat suicide attempts during the follow-up period. The majority of

patients who made repeat suicide attempts during follow-up had a history of this behavior at entry into the study.

The study confirmed some of the findings of other investigators. It found that non-prescription use of drugs, unemployment, increasing age, previous psychiatric treatment and a history of violence was characteristic of patients with a previous history of suicide attempts. It showed also that patients with previous attempts had higher levels of suicide intent, experienced more distress (were more emotionally reactive) had poorer self-esteem and also showed a trend to being less satisfied with their levels of social support. In addition, the repeater group at the index episode which marked their entry into this study reported more intense levels of suicidal ideation than those who had no history of suicide attempts.

This study could not confirm that alcoholism, the experience of violence from a relative, life events nor that the severity of depression was greater in the repeater group when compared to patients who only made one attempt.

The overall prevalence of personality disorder in this cohort of parasuicide patients was similar to that found in previous studies. A high degree of co-occurrence for the recently described ICD-10 personality disorders (WHO, 1992) was found. This level of comorbidity was similar to that

described in previous studies of DSM-III-R defined personality disorder categories (Oldham et al, 1992). Certain personality disorders such as borderline tended to co-occur more often with other personality disorders compared to anankastic personality disorder which had low comorbidity with other personality disorders. This may imply that criteria for borderline personality disorder have poorer discriminant validity than those for anankastic personality disorder.

The study was also able to show that patients who were diagnosed as personality disordered on their informants histories themselves reported many known correlates of personality disorder. Those patients with personality disorder made greater use of nonprescription drugs, they reported a greater frequency of violence to other adults and reported more symptoms of alcoholism. They also reported a trend towards being unemployed but this was not significant. These findings, to some extent, validate the accounts of personality disorder in patients by knowledgeable informants.

This study showed that specific personality disorder have different risks for the repetition of parasuicide. The study confirmed the hypothesis that specific personality disorders such as borderline personality disorder and dissocial personality disorder were associated with

repetition. It could not confirm that the presence of any personality disorder in general was associated with repetition of parasuicide. This could imply that personality disorder subtypes such as borderline personality disorder and dissocial personality disorder are more important in describing risk for repetition of parasuicide than unspecified personality disorder which has not been subtyped in risk scales for repetitive suicidal behavior.

It also found a significantly decreased risk for repetition of parasuicide in those patients who had an anankastic personality disorder. This result is possibly biased and needs further confirmation as the reliability for the presence of anankastic personality disorder was not satisfactory as satisfactory as that noted for borderline personality disorder. Completion of occupational training was a negative predictor for the total number of previous suicide attempts reported at baseline.

This study demonstrated similar correlations between the dimensions of the temperament and character inventory as described by Cloninger et al (1994). The study also demonstrated that most of these dimensions were stable over a two-month interval. Reward dependence seemed in this study to have a questionable temporal reliability. However, this component of the study was done in a different cohort

of participants who were inpatients and changes across time in this dimension may possibly have resulted from exposure to treatment.

This study documents for the first time, as far as the author is aware, that informant based diagnoses of personality disorder at baseline or entry into the study predicted low self-directedness scores at follow-up. This finding validates personality disorder diagnoses made through the Standardized Assessment of Personality. The study could not confirm the hypothesis that the presence of personality disorder based on informant interviews predicted low cooperativeness scores.

Two thirds of the original cohort were followed up. There were no significant differences between those who were lost to follow-up and those patients who completed the follow-up interview in terms of discriminatory variables for the repetition of parasuicide which were measured at baseline. Bias due to loss to follow-up is probably minimal. This study documents that patients who repeat parasuicide during the follow-up period have significantly increased harm avoidance scores and lower self-directedness scores. The study confirms that both dimensional and categorical approaches which define personality pathology are needed to describe repetitive suicidal behavior. This is the first study to show that both harm avoidance - a temperament

dimension - and self-directedness, a character dimension are associated with further suicidal behavior after parasuicide.

LIMITATIONS OF THE STUDY

Sample size

This was the major limiting factor in this study and over which I had little control. This was a very expensive investigation in terms of costs and also labour intensive as all interviews were carried out in the community and these factors limited the size of the sample. The study could in terms of the sample size only confirm that any personality disorder did not have an odds ratio of three or greater for recurrent parasuicide. It could not confirm that unspecified personality disorder had perhaps a smaller odds ratio than three for previous parasuicide. Despite this, specific personality disorders such as borderline personality disorder and possibly dissocial personality disorder clearly have a high signal to noise ratio even in this relatively small study as they were demonstrated to have stronger relations to previous parasuicide than unspecified personality disorder. This supports the main hypotheses of this study that specific personality disorder categories contribute more to the risk of repetition of parasuicide than unspecified personality disorder.

Selection bias

There is a slight oversampling of male patients in this sample but in terms of age and sex distribution of the final sample available for inclusion into the study there are no major differences between the sample and that target parasuicide population which I attempted to describe. The study was also limited to patients who had a reliable informant: parasuicide patients who had no fixed abode and no informant were excluded. Despite these limitations, comparison of this research cohort with other cohorts described in the literature, show that our present sample is fairly typical of parasuicide populations.

This study was limited to patients who could be interviewed in either English or Afrikaans and who presented to the Emergency Unit at Groote Schuur Hospital. Its findings are probably not generalizable to patients who mainly speak another language. Very few Xhosa speakers who could be interviewed in either English or Afrikaans were included. The findings of this study should be examined in patients who speak Xhosa and other indigenous languages. It would be important to examine whether the constructs and findings of personality and personality disorder which were examined in this study replicates to these other language groups.

Translation bias

No major difficulties were encountered in the translation nor the administration of two language versions in this study. Trained health workers who had clinical experience with the target population administered all the interviews and questionnaires except for four interviews at follow-up which were done by a student with a Bachelor's degree in psychology. All of these interviewers were bilingual and all questionnaires were completed in the presence of the research assistant who assisted the patient if there was any misunderstanding. It is impossible to achieve a translation which would completely match the original language version and thus there is some variance introduced as a result of the use of two language versions but the impact of this on the main findings of this study is minimal as was demonstrated in chapter 21.

Confounding by language status

The bivariate analysis of the data showed significant associations between nonprescription use of psychoactive drugs, previous psychiatric treatment and previous parasuicide. These associations are possibly overestimated as a result of language status as these risk factors were present more frequently among English speakers who also reported previous parasuicide more often. The bivariate

analysis did not show any relation between unskilled work and previous parasuicide. This association is possibly underestimated as Afrikaans speakers reported less previous parasuicide and were more unskilled. Multivariate analysis however could not confirm significant confounding by language status when the effects of other risk factors such as suicidal ideation, borderline and anankastic personality disorder, age, unemployment and previous psychiatric treatment were also controlled for.

Recall bias

Recall bias is possible in the informant accounts of personality disorder among patients as a result of suicidal behavior. Informants may have been biased to recall more personality disorder symptoms in patients with suicidal behavior. It was described earlier in this thesis that the first part of the SAP which includes a number of general probes does not include reference to suicidal behavior. I attempted to describe the validity of these informant accounts of personality disorder among patients in terms of their concurrent self-reports of a number of well-known correlates of personality disorder. This analysis and the follow-up analysis at least six-months later of the relation of TCI scores to diagnoses of personality disorder made at baseline confirmed both concurrent and predictive validity for these informant accounts of personality

disorder.

Observer bias

Interviewer bias may result from differential probing of previous exposure history if there is knowledge of the outcome of interest. I attempted to control for this in the design of this study. I was not involved in any of the data collection and research assistants had no knowledge of the specific hypotheses of this study except that it was a study of the relation of personality to suicidal behavior. This design to minimize this bias is well recognized. A lot of time was spent initially in training the two intern clinical psychologists to administer the SAP to ensure that the instrument was used properly. I met regularly over the course of a year with all research assistants to ensure that missing data was kept to an absolute minimum and that all the questionnaires and interviews were completed satisfactorily.

Bias due to loss to follow-up

Non-response of patients impacted on the follow-up study. Analysis of the data does however indicate that those who were available at follow-up were representative of the sample which entered the study. It should be noted that personality disorder and history of previous parasuicide at

entry into the study were not related to follow-up and bias due to loss to follow-up is minimal. As only two-thirds were available for follow-up, the power of this study to describe important relations of the TCI to ICD-10 personality disorders and suicidal behavior was diminished.

RESEARCH IMPLICATIONS FOR POLICY AND HEALTH CARE DELIVERY

The study documents that nonprescription use of drugs and unemployment, increasing age, history of violence to others and previous psychiatric treatment are characteristic of those with a history of previous suicide attempts. These patients seemed more emotionally reactive, experienced more intense suicidal ideation, had poorer self-esteem and were more dissatisfied with social support. Borderline personality disorder and anankastic personality disorder discriminated between repeaters and first-ever suicide attempters.

The findings of this study unequivocally demonstrate the link between unemployment and repetition of parasuicide. South Africa has one of the highest rates of unemployment in the world and completion of occupational training does seem to be associated with a reduction in the total number of previous suicide attempts reported at entry into the study. These findings should be made known to social policy makers.

There is also an association between previous treatment and repetition of parasuicide. Despite these contacts these patients do not seem to decrease their behavior. There are a number of factors which may account for this. It is not certain how many of these contacts with the mental health system are missed opportunities for intervention in substance abuse problems. Nonprescription use of substances has been linked in this study to personality disorder as well as to repetition of parasuicide. Targeting those groups who are abusing drugs may possibly reduce impulsivity and risk of repetition.

These patients who repeat parasuicide also have poorer self-esteem and experience more psychological distress with increased intensity of suicidal ideation. Cognitive-behavioral therapy has shown some promise in the reduction of chronic parasuicidal behavior (Linehan et al, 1991). This may help with poor self-esteem and problem solving skills as well as appraisal of support systems which are perceived to be poor among repeaters of parasuicide. Currently no cognitive-behavioral therapy groups are available at Groote Schuur Hospital for the treatment of the chronically parasuicidal patient.

Previous research (Linehan et al, 1991) has indicated that suicidal ideation does not respond as readily to this intervention and increasing intensity of suicidal ideation

has been linked in this study to a history of repetition of parasuicide. The results of this study indicate that in the follow-up period high harm avoidance and low self-directedness are associated with repetition of parasuicide. Montgomery et al (1983) have demonstrated that low dose neuroleptics reduce the frequency of repetition of parasuicide. It is possible that this drug and other neuroleptics assist in modulating the emotional reactivity which seems to be a temperamental characteristic of those patients who are at risk for repetition of parasuicide. The present study suggests that it may be an emotionally reactive temperament together with poor problem solving skills (as reflected in the high harm avoidance and low self-directedness scores of those who made repeat attempts) which may predispose to increasing intensity of suicidal ideation with consequent repetition of parasuicide. Trials are needed to examine whether a combination of cognitive behavioral therapy and low dose neuroleptics would further decrease the repetition of parasuicide and to investigate the way in which this reduction of the repetition of suicidal behavior occurs. Both temperament and character aspects of personality seem to be implicated in the repetition of parasuicide and prevention should focus on both these aspects.

RESEARCH IMPLICATIONS FOR FUTURE STUDIES OF THE REPETITION
OF PARASUICIDE

There are major problems in the translation of the instruments into languages of very different cultures. It was beyond the capacity of this investigation - in terms of financial and available personnel resources - to make a translation into Xhosa as well as to undertake a reliability and validity study of the translation of the many instruments which were used in this study. It is essential that such an investigation is done in the future with sufficient financial and staffing resources for what would be a relatively large project.

This study has demonstrated that anankastic personality disorder possibly protects against repetition of parasuicide. In view of the relatively low reliability which was documented for anankastic personality disorder this finding is in need of replication. It makes intuitive sense that anankastic personality disorder which is characterized by a great deal of constraint should be associated with a decreased likelihood of repetition for parasuicide.

There is probably some validity in these findings: an investigation of comorbidity showed that of all the personality disorders investigated in this study,

anankastic personality disorder had the least amount of co-occurrence with other personality disorder i.e. the criteria used were probably diagnostically more specific for this disorder than other personality disorders. This would imply that this personality disorder most likely has a higher discriminant validity than borderline personality disorder which had the most co-occurrence with other personality disorders.

Anankastic personality disorder and borderline personality disorder which is characterized by behavioral disinhibition may be expressions of an underlying personality dimension with two extremes of behavioral restraint and behavioral disinhibition. In this study the presence of these two personality disorders have risks in opposite directions for the repetition of parasuicide. In other words, certain personality disorders, such as borderline personality disorder and possibly dissocial personality disorder are associated with an increased risk for repetition of parasuicide while the presence of other personality disorders such as anankastic personality disorder may protect the individual against repetition of suicidal behavior. This hypothesis needs further investigation.

Part 5.

Appendix - Interviews and References.

Informed consent form and interview at baseline.

PROSPECTIVE STUDY OF PATIENTS WHO MAKE SUICIDE ATTEMPTS

INVESTIGATOR

Dr. Bryan L Dirks, Department of Psychiatry, Groote Schuur Hospital, telephone 404-2155/2156

PURPOSE AND BACKGROUND

This is a study of patients who make suicide attempts. The purpose of the study is to learn about how your psychological difficulties and environment contribute to this behavior.

PROCEDURES

If you agree to participate, the following will happen:

1. You will be interviewed by a research worker about some of the difficulties that you have been experiencing.
2. You will be asked for the name, address and telephone of someone, who has known you well for at least the last 5 years, and who you will allow us to contact.
3. This person will be interviewed separately to give more information about what sort of person you are.
4. You will be contacted at a later time, after the first interview, to find out how you have been coping.

BENEFITS AND RISKS

There may be no direct benefit to you from participating in the study. However more information will be available about you as a person and may assist in planning further treatment for you. It is unlikely that any harm will occur to you as a result of participating in this study.

CONFIDENTIALITY

All information obtained from this study will be considered confidential. Your identity will also be kept confidential.

QUESTIONS YOU MAY HAVE AND THE RIGHT TO WITHDRAW

The research assistant will answer any questions you may have and you may contact Dr Bryan Dirks at 404-2155/6 for more information about the study. You have the right to withdraw from the study at any time without affecting your future medical care.

NAME _____

FOLDER NUMBER _____

DATE OF INTERVIEW _____

ADDRESS _____

TELEPHONE _____

WORK ADDRESS _____

TELEPHONE _____

1. RELATIVE/FRIEND (≥ 5 years) _____

RELATION _____

ADDRESS _____

TELEPHONE _____

2. RELATIVE/FRIEND _____

ADDRESS _____

TELEPHONE _____

I agree to participate in this study. I have been given information about the aims and procedures of this study and my participation in this study is entirely voluntary and I am free to withdraw at any time without affecting my future medical care.

Signature _____ Research Assistant _____

Date _____

1. What is your age?
2. Sex?
3. Marital status?
4. How many children do you have?
5. Are you employed?
6. What sort of work do you do?
7. What standard did you reach at school?
8. What training have you had after school?
9. For how many years?
10. Did you qualify?
11. Is this the first time that you have tried to kill yourself?
12. How many times have you tried to kill yourself?
(excluding present attempt)
13. Have you ever felt you ought to cut down your drinking?
14. Have people annoyed you by criticizing your drinking?
15. Have you ever felt bad or guilty about your drinking?
16. Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?
17. Have you ever used any of the following drugs without prescription to get high, change your mood or sleep better?

Mandrax, Seconal, Tuinal, Vesperax, Pax, Lexotan,
Valium, Xanor, Librium, Barbiturates, Ativan, Halcion,
Normison, Mogadon, Serepax, Urbanol, Tranxene,
Demetrin, Rohypnol, Dormicum, Purata, Euhynos, THC,
Pot, Grass, Dagga, Amphetamine, Meth-amphetamine,
Speed, Ritalin, Diet pills, Codis, Stopayne,
Cocaine, Snorting IV Crack, LSD (Acid), steroids, glue,
Nitrous oxide, amyl/or butyl nitrates ("poppers"),
Ecstasy
18. When last did you use any of these drugs?
19. Have you ever been found guilty by a court for a criminal offence?

20. What for?
21. How many times have you been to prison?
22. Have you been treated by a psychiatrist before?
23. Have you been physically violent to another adult in the last five years?
24. Has any relative been physical violent to you in the last five years?

PATIENTS THEN COMPLETED THE FOLLOWING WELL KNOWN AND RECOGNIZED QUESTIONNAIRES AND SCALES AFTER THE INTERVIEW IN THE PRESENCE OF THE RESEARCH ASSISTANT: (these are described in the literature and are not reproduced here)

1. Beck Suicide Intent Scale
2. Beck Depression Inventory
3. List of Threatening Life Events Questionnaire
4. Scaled Version of the General Health Questionnaire
5. Sarason Brief Social Support Questionnaire
6. Rosenberg Self-esteem scale

AFTER THE INTERVIEW WITH THE PATIENT AN INTERVIEW WAS DONE WITH AN INFORMANT WHO HAD KNOWN THE PATIENT WELL FOR FIVE YEARS USING THE

Standardized Assessment of Personality

Informed consent form and interview at follow-up.

FOLLOW-UP STUDY OF PATIENTS WHO HAVE MADE SUICIDE ATTEMPTS

INVESTIGATOR

Dr. Bryan L. Dirks, Department of Psychiatry, Groote Schuur Hospital, telephone number 404-2155/2156

PURPOSE

This is a follow-up of all patients who agreed to participate in this study last year. The purpose of this follow-up is to find out how you have been coping since you were last seen. This information will increase our understanding of how people adjust to their difficulties following a suicide attempt.

PROCEDURES

If you agree to participate in this part of the study, the following will happen:

1. You will be interviewed briefly by the research worker and who will help you to complete the follow-up questionnaire.

CONFIDENTIALITY

All information obtained from this study will be considered confidential and your identity will also be kept confidential.

QUESTIONS YOU MAY HAVE

The research assistant will answer any questions you may have and you may contact Dr. Bryan Dirks at 404-2155/6 for more information about the study.

THANK-YOU FOR PARTICIPATING IN THIS STUDY - YOU HAVE PROVIDED INVALUABLE INFORMATION TO INCREASE OUR UNDERSTANDING AND MANAGEMENT OF THE DISTRESS WHICH OUR PATIENTS EXPERIENCE.

NAME _____

FOLDER NUMBER _____

DATE OF INTERVIEW _____

ADDRESS _____

TELEPHONE _____

RELATIVE/FRIEND (≥ 5 years) _____

RELATION _____

ADDRESS _____

TELEPHONE _____

I agree to participate in this follow-up study. I have been given information about the aims and procedures of this study and my participation in this study is entirely voluntary.

Signature _____ Research Assistant _____

Date _____

1. Have you made repeat suicide attempts since I last saw you?
2. How many attempts have you made since then?
3. Could you list the date and month (from first to last) when you made these attempts and where you were seen following these attempts (if applicable).
 1. _____ therapist/hospital _____
 2. _____ therapist/hospital _____
 3. _____ therapist/hospital _____
 4. _____ therapist/hospital _____

*If the patient was seen by another hospital or private therapist after these suicide attempts please obtain the folder number or the telephone number/address of the therapist.

1. folder number _____
2. therapist address/telephone _____

4. Have you received any outpatient psychological/psychiatric treatment since you were seen by me?

*if yes, find out by whom the patient was followed up and when last the patient was seen?

1. therapist/hospital _____
2. date of last visit _____

5. Have you been hospitalized for psychiatric treatment since I saw you?

*(if yes, find out where and the dates of admission and discharge as well as the name of the therapist).

1. adm. _____ dis. _____ therapist and hospital _____
2. adm. _____ dis. _____ therapist and hospital _____
3. adm. _____ dis. _____ therapist and hospital _____

*If yes, what were you hospitalized for?

6. Have you received any antidepressants/or other psychiatric medication since I last saw you?

*If yes, please list these drugs and the dose.

1. drug _____ dose _____
2. drug _____ dose _____
3. drug _____ dose _____
4. drug _____ dose _____

*If yes, when last did you use these drugs?

1. date of last dose _____

AFTER THIS INTERVIEW THE PATIENT COMPLETED THE FOLLOWING QUESTIONNAIRES (these are described in the literature and are not reproduced here):

1. Cloninger's Temperament and Character Inventory
2. Scaled version of the General Health Questionnaire
3. Brugha's List of Threatening Events Questionnaire

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