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Predicting the Good, the Bad, and the High Risk: A Quantitative Analysis of Individual, Social, and Psychological Controls and the Subsequent Risk of Recidivism while on Bail

By

David John Todoruk ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirement for the degree of Master of Arts

Department of Sociology

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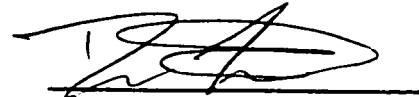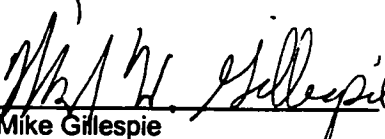The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled *Predicting the Good, the Bad, and the High Risk: A Quantitative Analysis of Individual, Social, and Psychological Controls and the Subsequent Risk of Recidivism while on Bail* submitted by *David John Todoruk* in partial fulfillment of the requirements for the degree of Master of Arts.

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ABSTRACT

Risk assessment research has suggested that many criminals display personal, familial, and social experiences and characteristics that if measured properly, can provide insight into future criminal behavior. The aim of this thesis is to develop measures of an individual's probability of future criminal behavior, through an examination of his/her social and psychological environments. Based on a sample of 139 males on bail, arrested in 1996/97, and referred for psychological evaluation, this thesis uses a quantitative analysis to test the general applicability of both static and dynamic predictors of recidivism. Of the seventeen predictors the logistic analysis showed that only alcohol dependency, level of psychological functioning, and age had a marginal effect, suggesting the existence of limitations in the general use of static and dynamic predictors.

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INTRODUCTION

The 1700's saw the creation of criminological thought with the emergence of the *Classical School of Criminology* in Europe. Two European "reformers," Cesare Beccaria (1738) and Jeremy Bentham (1748) were the principal proponents of the Classical School and are generally acknowledged to be the founders of criminological theory. The Classicists argued that an individual possesses "free will" and chooses whether or not to engage in criminal behavior. Their writings promoted the utilitarian ideal of justice, that is, the idea that punishment should be proportionate to the crime and should be swiftly dealt with by the community. Bentham and Beccaria dismissed punishment handed out to rid evildoers of demons, a strategy prevalent during medieval times, and set down the tenets of "the greatest good for the greatest numbers," and "let the punishment fit the crime"; deterrence, not revenge, was to be the primary goal of the criminal justice system (Jackson & Griffiths, 1991:175).

As time passed, the greatest attack on the Classical conception of crime and law came from an emerging new school. The Positivists, as this later group of "criminologists" came to be labeled, focused upon the individual criminal and the search for factors that determined his or her criminality. From the perspective of the Positivists, criminality was not merely the consequence of a rational choice between good and evil. Rather, there were causes of criminality that were beyond the control of the individual. Positivists argued that scientific analysis could yield the true cause of crime, an idea that had important implications for the criminal justice system. For example, once the cause was identified, policies and programs could be formulated that could help "cure" criminals and possibly prevent or eradicate crime entirely. According to the Positivists, the nature and severity of a sentence should reflect the individual needs of the offender because each offender, not each offense, is unique (Jackson & Griffiths, 1991:175).

Subsequently, after three hundred years of research, theories, and policy, crime prevention efforts continue to define strategies that will either deter

individuals from involvement in crime or rehabilitate them so they will no longer want to commit criminal acts. In the public debate over crime prevention policies, these strategies are usually defined as competing approaches. However, they have in common a central assumption about crime prevention, research, and policy: efforts to understand and control crime must begin with the offender. For both of these approaches, the focus of crime prevention is on individuals and their involvement in criminality.

Whether an individual supports deterrence and/or rehabilitation, both strategies focus on individual involvement in crime and are predicated on a reactive response. Researchers and policy makers have looked to define strategies that would essentially punish individuals for their involvement in crimes and/or deter others from following their example, or commit resources to fund new programs, alternatives, and initiatives in the hope of rehabilitating criminals into law-abiding citizens. Although there are numerous examples of this modern reactive dichotomy, one example will suffice. The Dangerous offender provisions are set out in Part XXIV of the Criminal Code. These provisions were enacted in 1977, and replaced habitual criminal and criminal sexual psychopath legislation enacted in 1947-8. The latest amendments to the provision were made under S.C. 1997, c. 17 under which a person convicted of a crime was subject to a "further sentence" of not less than five, or more than ten years, as preventive detention if he or she was found to be an habitual criminal.

Bill C-55 is part of the government's commitment to strengthening the sentencing and correctional regime for offenders who present a high risk of violent re-offending. In recent years, the focus on the punitive strategy for these high-rate or dangerous offenders has often focused on two competing strategies: the punishment group argue for tougher sentences, a "lock the door and throw away the key" mentality. The "rehabilitators", in their fight to "heal the wounded", promote more counseling, programs, and integration so that the individual may be rehabilitated into a law-abiding citizen. Although both strategies are predicated on a plethora of supporting research, the reality of the situation is that neither attempts to understand "dangerous offenders" and their surrounding

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environments until after they have come into contact with the justice system. Although Bill C-55 is a preliminary initiative aimed at strengthening and tightening the supervision of high risk offenders, simply labeling an offender "dangerous" after he/she commits a crime does nothing to proactively prevent social conflict from occurring in the first place. If the criminal justice system aspires towards a proactive initiative in dealing with offenders, then it is critical that we begin to understand the dynamics of offenders and the social circumstances that influenced them.

Although the "reactive" strategy continues to dominate crime prevention research and policy (Brantingham and Brantingham, 1990; Felson, 1986), it has begun to be challenged by a very different approach that seeks to shift the focus of crime prevention efforts. This new approach was developed in large part as a response to the failures of traditional theories and programs. The 1970s, which saw a shattering of traditional assumptions about the effectiveness of crime prevention efforts, led to a reevaluation of research and policy about crime prevention (Visher and Weisburd, 1997). For many scholars and policy-makers, this meant having to rethink assumptions about criminality and how offenders might be prevented from participating in crime. But others suggested that a more radical reorientation of crime prevention efforts was warranted. They argued that the shift must come not in terms of the specific punitive strategy or rehabilitation initiative that was used, but in terms of the unit of analysis that formed the basis of crime prevention efforts. This new proactive crime prevention effort called for a focus not on individuals after they commit an offense but on the mediating context in which crimes occur.

More specifically, this approach, which is often associated with *risk assessment research*, looks to develop a greater understanding of crime and more effective crime prevention strategies through the assessment of the physical, organizational, and social environments that make crime flourish (Brantingham and Brantingham, 1990; Cornish and Clarke, 1986). Risk assessment research has suggested that some criminals display personal, familial, and social experiences and characteristics that may lead to increase

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participation in criminal behavior. Therefore, crime prevention research must shift its focus from a reactive initiative to the social environment that may predispose an individual to involvement in criminal behavior. This approach does not ignore reactions to offending behavior; it merely places it as one part of a broader crime equation that is centered on the context of crime. It demands a shift in the approach to crime prevention, from one that is primarily concerned with reactive responses to one that proactively looks at why crime occurs in specific situations. It moves the context of crime into a central focus and places the traditional focus of crime prevention - the response - as one of a number of factors in explaining this social phenomenon.

This is not to say that punishment and rehabilitation are not important factors in the fight against crime. Every criminal event is a chance occurrence, in the sense that no human characteristic, set of circumstances, or chain of events makes criminality inevitable. It seems reasonable to assume that some intervention might have prevented each criminal event, but the correct intervention cannot be known in advance for every individual case. As starting points for exploring prevention, there are well-documented risk predictors that increase the odds that criminality will occur. Intervention can be modified to reduce those odds. However, there is always a chance that criminality will occur in a low-risk setting or fail to occur in a very high-risk setting. As with any initiative that attempts to deal with human subjects, no one way is absolute. Punishment and rehabilitation will always be important; however, their importance will now become part of a broader crime equation rather than the focus.

Risk assessment prevention advocates argue that the context of crime provides a promising alternative to traditional reactive based crime prevention policies. They assume for the most part that situations and circumstances are a more stable and predictable focus for crime prevention efforts. In part, this assumption develops from commonsense notions of the relationship between the physical, organizational, and social environments and crime. For example, shoplifting is by definition clustered in stores and not residences; family disputes

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are unlikely to be a problem in industrial areas; individuals with drug dependencies are more likely to be involved in drug related crimes; and individuals with prior criminal activity are more likely to be involved in future criminal activity.

Although many studies suggest that scholars may have more success in predicting crime within situations and individual circumstances (Farrington et al., 1986; Blumstein et al., 1988), such assumptions should not be made too quickly. In the first case, much of this evidence is drawn from applied research studies that focus on low-risk individuals. In turn, in a few studies that have subjected these assumptions to large-scale empirical analysis, results have been mixed. For example, Bonta and Hanson (1995) attempted to determine the accuracy of the SIR scale (Statistic Information on Recidivism Scale). Bonta and Hanson (1995:12) long-term follow-up study found "the SIR demonstrated predictive validity but still made errors. For example, if we adopted a policy of incapacitating the poor risk category, the false positive rate would be 35.4%." Another study found that only one in three released mental health patients who were judged to be dangerous actually engaged in dangerous behavior (Monahan, 1988). Even where there exists strong evidence for the use of prediction (Blumstein et al., 1988), legal and ethical dilemmas make it difficult to base criminal justice policies on models that still include a substantial degree of statistical error (Monahan, 1988).

Despite empirical contradictions underlying risk assessment approaches, an array of studies point to the success of risk assessment measures in reducing crime and crime-related problems (see Monahan, 1988; Bonta and Hanson 1995; Blumstein et al., 1988). Nonetheless, it is important to note that they span a broad group of crime contexts and involve numerous opportunity-reducing measures.

The aim of this thesis is to develop measures, of an individual's probability of future criminal behavior, through an examination of his/her social and psychological environments. Combining historical and recent advances in risk assessment research, this thesis creates a quantitative analysis that attempts to

measure various predictors of recidivism while on bail for a specific population of individuals referred for psychological assessment.

There is little disagreement that research surrounding the use of risk predictors has made substantial growth in recent years. Traditionally, the literature on risk assessment has dealt almost exclusively with static predictors, that is, measures of personal history such as age, race, family status, etc. In general, these predictors have been defined by past events and are subject to change only slowly and incrementally (e.g. by an increase in age), if at all (e.g. race). The problem with focusing on static predictors is that their strength resides in measuring stable long-term behaviors (Bonta, 1997; Zamble & Quinsey, 1997). However, as Larry Motiuk (1995:2) claims, "when as offender remains on conditional release for more than 12 months, he or she is considerably more likely to succeed in the long term". Historically, one of the deficiencies in risk assessment research has been that static predictors substantially measure which offenders should receive the most intensive supervision in the long-term, rather than what the nature of the supervision or intervention should be for each individual in the short-term (Zamble & Quinsey, 1997).

This thesis attempts to determine which factors predict recidivism while on bail, for individuals referred for psychological assessment. By working within the sample parameters of impaired psychological functioning and bail, this thesis accomplishes several initiatives. With the focus on a sample of accused offenders referred for psychological assessment, this thesis is able to measure the applicability of common risk predictors measured in the general population to a specific population of individuals with impaired psychological functioning. If risk assessment is to succeed as a proactive initiative in controlling crime, then the application of various predictors must be measured and tested against different populations of individuals. Secondly, by focusing on individuals referred for psychological assessment, this thesis can test alternative risk predictors associated with psychological functioning. Although psychological predictors have been measured in previous research (see Monahan, 1988; Bonta and

Hanson 1995), more research is needed to explore additional predictors for their potential significance in determining recidivism.

The reliance on static predictors in past research also led this thesis to incorporate a second population parameter of shorter term recidivism or recidivism while on bail. By narrowing this study's focus to individuals on bail this thesis is able to test the applicability of utilizing static risk factors to predict shorter-term recidivism. In the past, static predictors have shown that their strength lies in predicting stable long-term behaviors (Bonta, 1997; Zamble & Quinsey, 1997). However, relatively new research on dynamic predictors (Bonta et al., 1998) has shown that rapidly changing predictors (such as anger and frustration) may have a stronger influence on shorter-term recidivism (1 to 12 months) than their static counterparts. Behaviors that are defined as rapidly changing can trigger the onset of immediate behaviors and/or impulses that may impact criminal activity shortly after release (Bonta et al., 1998). Because this thesis utilizes individuals referred for psychological evaluation as its population parameter, these changing or dynamic predictors can readily be collected and measured for their significance on shorter-term recidivism while on bail.

Secondly, numerous studies (Boudouris, 1984; Bonta, Pang, and Wallace-Capretta, 1995; Roth, 1994) have found that the longer the follow-up period, the smaller the probability of a person being re-arrested and included among recidivists. By utilizing a shorter term follow-up period, or in this case bail length as our duration limits, this thesis is able to test which predictors may have the greatest immediate impact on recidivism.

Lastly, the bail length was adopted because of two considerations: firstly, the bail event is the closest judicial process to the actual criminal event and has been less influenced by law enforcement than the combined processes of the criminal justice system. Although it has been acknowledged that the arrest procedure also contains alternative influences (e.g. whether police respond at all; what action came from the response; nature of intervention including warnings, informal dispute resolution, alternative measures, and/or charging; and if charged, action by police including selection of number and nature of charges,

availability of council/legal aid, release on promise to appear, and/or whether judicial release is opposed), these same influences occur when the court process is utilized plus the added influences of the judicial process. Secondly, it allows us to operationalize prediction and risk assessment results within a particular segment of the criminal justice process, hence showing the strengths of risk assessments in judicial bail decisions.

This thesis is an examination into the concept of recidivism and the application of risk assessment to predict recidivism while on bail for a specific population of individuals. It is not an analysis of how much recidivism there is or how it varies by correctional treatment or jurisdiction since we truly do not know enough about what contributes to recidivism to make either absolute or comparative statements about its extent. There are good reasons for our lack of knowledge. For the most part, recidivism has been defined on an ad hoc basis, without consideration of a constant meaning and has been measured in ways remarkable for their inconsistency (Izzo & Ross, 1990; Begun, 1976/1977; Cardwell, 1980). Yet we find "recidivism rates" (based on different definitions applied in different contexts and measured in different ways) being compared to each other to determine which correctional program or which justice strategy is "better".

Utilizing risk assessment to predict recidivism is not a new phenomenon; in fact, the courts, probation, and parole boards have been attempting to utilize the strengths of risk assessment for years. However, the outcomes of these futile attempts have resulted in a haphazard form of judicial discretion. Through a review of the existing risk assessment literature, this thesis is able to determine which factors or variables are commonly used to predict recidivism and whether these variables hold similar results when measured among charged individuals referred for psychological assessment. Particularly, variables such as family status, prior convictions, age, education, employment, alcohol, drug abuse, and race will be examined because of their predictive significance in past research. In addition, psychological variables which the research literature claims influence criminal behavior, will be tested for their predictive significance for recidivism

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while on bail. Specifically, variables such as abuse, personal distress, Global Assessment of Functioning (GAF)[1], and Global Criminal Assessment of Functioning in Non-criminal Society (GAF-C)[2] are measured to expand traditional risk assessment variables and incorporate a psychological domain. Through the utilization of psychological variables, including variables never before measured (GAF & GAF-C), this thesis is able to test the significance of traditional static predictors, changing dynamic predictors, as well as the psychological environment of the individual

Historically, risk assessors have made minimum use of theory to explain or justify the creation of an offender risk scale. In the past this has been referred to as an "atheoretical approach" or "dustbowl empiricism" (Bonta, 1997). In these approaches, items for a scale were selected for no reason other than that the items had demonstrated a relationship to criminal behavior. Historically these atheoretical approaches were critical in the formation of valid predictors; however, their limitations were quickly realized with average correlation rates of .30 (Bonta, 1997). Making better use of theory, this thesis begins by building from the sociological foundation of social control for a better understanding of predictors and their effect on criminal behavior. Building on social control theory, this thesis also utilizes a coping and relapse theory (Zamble and Quinsey, 1997) to help explain the internalization process that individuals with mental illness encounter when confronted with criminal behavior and why certain individuals recidivate while others faced with similar situations, forces, and circumstances do not. Coping and relapse theory also provide insight into why individuals with mental illness may disproportionately recidivate during shorter-term periods such as bail.

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[1] The GAF Scale (Global Assessment of Functioning) is a hypothetical continuum of mental health illness in which one plots the psychological, social, and occupational functioning between a scale of 0 and 100.

[2] The GAF-C (Global Criminal Assessment of Functioning in Non-Criminal Society) scale considers the ability to function non-criminally in society. The GAF-C's mandate is to factor criminal behavior out of the GAF scale so that the GAF scale can be used as a crude outcome measure scale for treatment and to see if biopsychosocial interventions have an impact on criminality.

CHAPTER I

Risk assessment and/or risk prediction is not a new phenomenon; in fact, many disciplines including insurance, engineering, medicine, and astronomy to name a few, have been using the benefits of risk assessment for years. In its most basic form, criminal risk assessment is the assessment of future criminal behavior. It is a fundamental concept because it provides a way of distinguishing between those who are likely to re-offend and those who are unlikely to re-offend. By assessing risk, those who work with offenders can make informed decisions and determine how best to manage the risk posed by an offender. Therefore, risk assessment is the process of identifying areas of potential offender risk and developing appropriate and effective countermeasures.

Implicit in the approach of risk assessment is the concept of safety as a comprehensive, integrated function of the process. After all, the goal of any risk assessment is to protect individuals and the community against reasonably anticipated threats or activities. Although there are numerous benefits associated with the adoption of risk assessment, the extent to which an integrated risk assessment systems approach can be applied is contingent upon the risk assessment technique, types of risk assessment tools, and most importantly, the power of unique variables to predict criminal behavior.

RISK ASSESSMENT TECHNIQUES

Beyond defining which variables have the greatest strength in predicting criminal behavior, one must be aware of a fundamental risk assessment distinction: one of *clinical* vs. *statistical prediction*. While there are several different methods and techniques utilizing risk assessment strategies, they tend to fall into these two broad categories (Milner & Campbell, 1995). Clinical prediction is "based on professional training, professional experience, and observation of a particular client" (Miller & Morris, 1988; cited in Milner & Campbell, 1995:21). Statistical prediction meanwhile, "involves predicting an

individual's behavior on the basis of how others have acted in similar situations (actuarial) or an individual's similarity to members of various criminal domains" (Milner & Campbell, 1995:21). Basically, statistical prediction involves the use of statistical models and risk factor tools while clinical assessments rely on the subjective observations and experiences of the professional community. Differences notwithstanding, the achievement of each strategy is predicated on the assumption that practitioners and policy makers can arrive at a consensus as to what are the best predictors and most accurate prediction instruments available to assess recidivism. This may be easier said than done!

Clinical Prediction

Clinical prediction typically involves a judgment by a professional about the risk specific individual poses. The professional may use multiple tools, including rating schemes, personal experience, and/or checklists developed by other professionals, to aid in his subjective assessment. Any available information about the offender's personality and/or behavior, social circumstances and the details of the crime itself are scrutinized before an assessment is made. The risk factors used in a clinical assessment vary on an individual basis and can easily change over time to represent changing social and political attitudes (Mann,1995; Jones, 1996; Litwack, Kirschner & Wack, 1993). These individual characteristics, taken as a whole, give professionals a picture of the person in question and contribute toward a decision about the potential risk of recidivism he or she may pose. The Supreme Courts of both the United States and Canada have recognized the clinical method as a constitutionally valid measure for assessing risk (Litwack et al., 1993) and it is still the leading method of risk assessment among justice practitioners.

Despite legal recognition of the validity of clinical prediction of risk and their widespread use, the accuracy of these assessments has been questioned. First, some methodologists (Jones, 1996) have expressed skepticism about clinical assessments because of their supposed unreliability. Unlike their

statistical counterparts, clinical predictions can rapidly change over a short period of time and their measurement involves some degree of subjectivity. Since elementary psychometric theory reminds us that unreliability in measurement necessarily leads to an underestimation of validity (Cronbach, 1990), this line of reasoning implies that, collectively, clinical prediction may be a relatively weak method of assessment. Secondly, studies have found that, when given enough information, laypersons making clinical predictions can do so with the same accuracy as clinicians (Menzies, Webster, McMain, Staley and Scaglione, 1994), and in some cases are better in their predictions. Menzies et al. (1994) studied the accuracy of clinician and layperson predictions of dangerousness among Metropolitan Toronto Forensic Service (METFORS) patients using the Dangerous Behavior Rating Scale (DBRS). Three outcome measures were used: violent behavior, criminal behavior and general incidents. Menzies et al. (1994, p. 19) found that clinicians were no better than laypersons at assessing risk; in fact, laypersons were better at using the DBRS than clinicians.

Further, studies indicate that different clinicians often come to different conclusions after assessing the same individual (Menzies et al., 1994; Webster, Dickens & Addario, 1985). Webster et al. (1985) cite a study by Quinsey and Maguire on inter-rater reliability (clinician agreement) which found that clinicians made different predictions even after they discussed cases with one another. Webster et al. (1985) believed differences in clinical opinion may be due to a lack of precision in clinician training. Such findings question the notion of clinical 'expertise' in prediction, suggesting that the assessment process is arbitrary, and that the fate of an offender is dependent on who conducts the assessment.

Compounding the problems associated with clinical assessment, biases can enter into the assessment process. Though assessors of risk may strive to be objective and to keep biases from affecting their investigation and conclusion, it is well known that any task undertaken by a person will be influenced by his or her perspective. For example, in their observations of hospital emergency room dangerousness assessments, Coontz, Lidz and Mulvey (1994, p. 375) found that

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"gender norms guide the assessment process;" violence is attributed to males more often than females.

> As Lidz et al. report, clinicians predict violence in only 22% of the females whom they assess compared to 45% of the males, yet there is no statistically significant difference in the rates of violence between males and females in our sample (cited in Coontz et al., 1994, p. 369).

In fairness it should be pointed out that there might also be advantages to intuitive judgments. For example, human decision-makers can make use of information that cannot readily be incorporated into a statistical device. Attitude during an interview may be one such example. (Gottfredson, 1987, p.37)

Statistical Prediction

Statistical predictions are based on data gathered on those individuals who come into contact with the criminal justice system and are released into the community. Information is drawn from various sources, including pre-sentence reports, probation and parole reports, institutional reports if needed, and penal observations. Such data generally include demographic observations such as age, race, education, and known or suspected mental disabilities. Other information is drawn from observations of the offender's situation and behavior in society, such as where the offender lives and with whom he/she associates, whether he or she is employed and, most importantly, whether the individual re-offends. These data sources are collected and stored in order to identify the characteristics of those who succeed upon release and those who fail. Over time, certain characteristics commonly associated with repeat offenders are expected to emerge. This information will later aid in assessing the risk posed by offenders being considered for release. For example, if a certain characteristic common to those who re-offend upon release is found in a potential parolee, that person's risk is judged greater than one who does not display the trait. Similarly, individuals who display characteristics common to non-recidivists will be considered less of a risk. Statistical assessments have the advantage of

providing "offenders with more concrete information on their status, making the system appear less arbitrary" (Serin, 1993, p. 24).

An excellent example of the statistical method of assessment can be found in Koss and Gaines' (1993) study of university students, which attempted to link fraternity membership, athletic participation or alcohol use to sexual aggression and sexual offending. Based on earlier campus studies that found fraternity members and athletic teams to be over-represented in sex offender populations, as well as findings that many sexual assaults occur when the perpetrator is under the influence of alcohol, Koss and Gaines conducted a self-report survey on an American university campus. Several indicators were collected, and of those surveyed that reported engaging in inappropriate sexual conduct (from whistles or 'catcalls' to rape), nicotine and alcohol use were the most common predictors, while athletic or fraternity affiliation were not significant.

Again the critical question goes to the accuracy of predictions made by statistical assessments. Howe (1994) has noted that several studies have shown actuarial judgments to be better than clinical judgments, but warns that the indicators on which statistical assessments are based have not been sufficiently standardized. Gottfredson and Gottfredson (1994) found actuarial assessments to be more effective than clinical assessments, but still regard the accuracy of statistical assessments to be modest. The results, compared to clinical assessments, are hopeful. However, any conclusions made from the above statement must take into account the fact that the improvements are over a technique that has at best mediocre results. Comparing the two methods is problematic, however, considering their methodological differences (Gottfredson and Gottfredson, 1994).

While risk assessments may yield statistically valid success rates, their accuracy for many is still unacceptable. False positives and false negatives are a concern in any assessment of risk. False positives are those individuals judged to be high risks to recidivate who are, in fact, not high risks to recidivate. Alternatively, false negatives are those individuals judged to be low risks to recidivate and who actually recidivate. For example, Bonta and Hanson (1995)

attempted to determine the accuracy of the SIR scale. Bonta and Hanson's (1995:12) long-tern follow-up study found the "the SIR demonstrated predictive validity but still made errors. For example, if we adopted a policy of incapacitating the poor risk category, the false positive rate would be 35.4%." Another study found that only one in three released mental health patients who were judged to be dangerous actually engaged in dangerous behavior (Monahan, 1988).

There are other issues about actuarial assessments that must also be raised. For example, actuarial cues are gathered from those individuals judged to be a low risk and thus released. Does this generate fair standards, to later apply to those who were detained as a risk? These standards may, as in the clinical model, be taken from an inappropriate comparison group. To achieve findings more applicable to the detained population would demand the unethical task of releasing those who have been deemed dangerous to society and observing their behavior.

Despite the above problems, risk assessments can be improved. Statistical prediction is generally regarded as the more accurate method of high-risk prediction (Milner & Campbell, 1995). Gottfredson (1987, p. 36) reports that "in virtually every decision-making situation for which the issue has been studied, it has been found that statistically developed prediction devices outperform human judgments." Gottfredson (1987) identifies numerous reasons for the superiority of statistical predictions, ranging from human error and lack of attention, base rates of behavior, to inappropriate weighting of factors, including assigning weight to factors with no predictive value.

Historically, the justice system has endorsed a combination of static and dynamic predictors and the clinical prediction model as its means of assessing risk of recidivism (Shannon, 1985). In endorsing this model, individual professionals at all levels of the judicial process have measured risk factors such as drug and alcohol abuse, anti-social attitude, psychological factors, etc., to provided a unit of recidivism risk for bail, sentencing, probation, and parole decisions (Shannon, 1985). The use of clinical assessment within the Canadian

justice system is not necessarily a product of choice, but rather a systematic necessity because there exist no agreed, standardized policy surrounding the implementation of statistical assessment techniques in the judicial system. Although clinical assessments have ostensibly served the judicial system, what is often forgotten is that assessors of risk are called on to essentially predict the future. For the most part, people are skeptical of anyone who claims to be able to predict future events, let alone the future actions of a specific individual. This has led to a conservative approach, mostly fueled by public opinion, by justice practitioners to cautiously implement the use of risk assessment to decide an individual's freedom (Litwack et al., 1993). It must be stressed that risk assessments only assist in identifying those who may pose a risk of repeat criminal behavior and/or harm to others, such that the person's freedom should be denied (Litwack et al., 1993; Shaffer, Jr. et al., 1994). Those who are released may also pose a risk. That risk, however, is not great enough to justify detaining the individual. This raises an important ethical and legal question: at what point does a person become so great a risk that his or her right to freedom is overridden by society's right to protection from a potential criminal?

This legal and ethical dilemma surrounding the use of prediction was illustrated in the Supreme Court hearing of Lyons vs. Her Majesty the Queen regarding the deprivation of liberty resulting from the use of Bill C-55. Although Bill C-55 constitutes a proactive initiative surrounding sentencing of high-risk offenders, it also creates a constitutional problem surrounding individual rights and freedoms. In a 1987 Supreme Court decision involving Thomas Patrick Lyons these constitutional limits were challenged. Lyon's submitted that Part XXI results in a deprivation of liberty that is not in accordance with the principles of fundamental justice in that it permits an individual to be sentenced for crimes he or she has not committed or for crimes for which he or she has already been punished. If this statement correctly described what in fact occurs under Dangerous Offender Legislation it would, indeed, constitute a violation of s.7 of the Charter. The reality, however, is quite different. What section 688 does is to permit a judge to impose a sentence of indeterminate detention on an individual

for having committed an offence, which sentence is "in lieu of any other sentence that might be imposed for the offence for which the offender has been convicted". The individual is clearly being sentenced for the "serious personal injury offence" he or she has been found guilty of committing, albeit in a different way than would ordinarily be done. It must be noted that Lyons was not picked up off the street because of his past criminality (for which he has already been punished), or because of fears or suspicions about his criminal proclivities, and then subjected to a procedure in order to determine whether society would be better off if he were incarcerated indefinitely. Rather he was arrested and prosecuted for a very serious violent crime and subjected to a procedure aimed at determining the appropriate penalty that should be inflicted upon him in the circumstances (Supreme Court of Canada, 1987).

Whether the focus is on improving clinical assessments or implementing and improving the use of statistical assessments, both techniques will require more reliable and valid measures to alleviate some of the skepticism associated with the full induction of such practices into the criminal justice system. As more and more research findings focus on statistical assessment, better predictive factors are being critically analyzed which may result in stronger, more accurate measures and techniques. The overwhelming support for the use of statistical assessments lead this thesis to focus on the measurement of recidivism while on bail through the utilization of statistical applications.

RISK ASSESSMENT TOOLS

Although there are no formal policies governing the use of statistical assessments within the judicial process, there are distinct segments of the Canadian justice system that regularly utilize statistical assessments in dealing with offenders. The Correctional Service of Canada (CSC) uses four risk assessment procedures: (1) the offender intake assessment (OIA) process, (2) the statistical information on recidivism (SIR) scale, (3) the custody rating scale and (4) the community risk/needs management scale (Motiuk, 1995). The OIA

process is used to determine the risk level, programming needs and treatment responsiveness of the offender in order to establish a case plan. The OIA process involves a multi-disciplinary team approach, which includes extensive information sharing. In assessing criminal risk, the OIA looks at offense history and offense severity, and uses the sex offense history checklist and the SIR scale. Other risk factors identified in the offender's criminal profile report are also considered. Case needs are determined by considering seven basic need domains: employment, marital/family, associates/social interaction, substance abuse, community functioning, personal/emotional orientation and attitude. CSC considers these seven basic needs (among others) to be a subset of offender risk.

The statistical information on recidivism scale is used for parole decision-making, etc. The SIR scale is an actuarial risk assessment scale developed by Nuffield in 1982 (Bonta & Hanson, 1995). By following a sample of federal parolees for three years, Nuffield identified 15 variables related to recidivism in general. These fifteen predictors are used to determine the offender's level of risk. Finally, the community risk/needs management scale uses a combination of offense history and case needs information to decide the frequency of parole contact (Motiuk, 1995).

The Canadian parole system uses the clinical assessment method in conditional release decision making. National Parole Board members currently receive risk assessment training and are kept informed about recent developments in clinical research in the area (Sutton, 1994). The training carries a social-psychology perspective and attributes behavior to a mix of environmental and personal factors. The limitations of clinical predictions of recidivism are stressed. Assessments are made by examining such things as the offender's behavior history, immediate situation, outlook on life and social supports in the community. In some cases, the National Parole Board looks to psychologists or psychiatrists for advice and recommendations. The National Parole Board relies heavily on the recommendations of corrections staff, as CSC staff interact with the offender on a daily basis (Motiuk, 1995).

Three of Ontario's parole districts have come together to develop the Community Offender Management Strategy (Motiuk, 1995). A computer program pools offender needs with such individual characteristics as social interaction, emotional orientation and attitude to come up with an individualized risk assessment for each offender. This assessment links offender characteristics directly with offender management measures, and can be updated quickly as the offender's situation changes. Because these risk assessment techniques are relatively new; they have not yet been evaluated.

The advent of these statistical assessments in the Canadian justice system raises some important issues. Statistical assessments may be a reflection of professional discomfort with making assessment decisions. Statistical assessments are mathematical and possibly have a conscience-easing effect. Furthermore, statistical assessments are highly impersonal; they lack the personal judgment of a clinical interview. It is debatable whether statistical or personal assessments are preferable. Statistical assessments avoid the biases that can enter into a personal assessment. However, what is lost in a statistical assessment is clinician intuition which, while controversial, may provide insight into an individual's behavior pattern that cannot be directly measured through a statistical application. Due to the limitations of our data set none of the above mentioned rating scales could be utilized. However, they are important to note because they display Corrections Canada's willingness to utilize statistical assessments. This thesis utilizes a very select segment of risk assessment variables including some variables that have never before been used in risk assessment (GAF & GAF-C).

RISK ASSESSMENT VARIABLES

As noted above, risk assessments answer two general concerns. First, how likely is an offender to commit a new offense? Second, what can be done to decrease this likelihood? Although perfect prediction is an unattainable goal, the

positive consequences of incorporating risk assessment justify careful attention to the most appropriate variables of risk assessment.

There has been considerable research identifying the factors that predict general criminal recidivism (Bonta and Hanson, 1995; Gendreau, Little & Goggin, 1996). In previous research, risk predictors have been broadly divided into two general types (Figure 1): static (unchangeable) and dynamic (changeable) risk factors (Bonta, 1997). Static, fixed predictors, such as gender or age of first offense, can be useful for evaluating long-term risk potential (e.g., dangerous offender applications). Little can be done to change these static risk factors; they do, however, have considerable predictive power. The evaluation of change in offender risk level, however, requires the consideration of dynamic (changeable) risk factors. Dynamic risk factors refer to criminogenic or case needs that reflect change in an individual (Bonta, 1997). This is a critical component not only of offender risk/needs assessment, but also of risk management, because this is where intervention must takes place. The goal is to reduce the likelihood of a criminal future by targeting these changeable factors effectively and applying appropriate intervention (Gendreau, Little & Goggin, 1996). Although age is sometimes considered a dynamic risk factor, the most useful dynamic risk factors are those amenable to deliberate interventions.

Until recently, much of the past literature has utilized the static/dynamic risk scale as a dominant entity in predicting recidivism. Although dynamic predictors allow the measurement of changeable needs and are therefore useful in predicting short-term recidivism, they fail to differentiate between stable long-term psychological functioning and acute changeable behaviors. In an attempt to better categorize risk assessment factors and incorporate an often missed psychological functioning component, this thesis further divides dynamic factors into stable dynamic and acute dynamic factors, a classification designed by Bonta (1997) and Gendreau, Little & Goggin (1996) (See Figure 1). Different types of risk assessments require the consideration of different types of risk factors. Stable dynamic factors, such as personal distress or abuse, may also be used for long-term risk assessments, but they are crucial for assessing

psychological functioning and enduring changes (e.g., treatment outcome and parole release). In contrast, acute, rapidly changing factors, such as alcohol and/or drug abuse, can signal the timing of re-offense, and are particularly useful for monitoring risk during short time periods such as bail and day parole.

Static Risk Factors	Stable Dynamic Risk Factors	Acute Dynamic Risk Factors
Age Marital Status Race Family Status Children Family Conflict Prior Convictions Education	Abuse Personal Distress Level of Psychological Functioning (GAF & GAF-C)	Employment Drug Abuse Criminogenic mood Alcohol Abuse Criminal affiliation

Although the above variables encompass some of the most commonly used social and psychological prediction variables, many of these risk factors (i.e. abuse, criminogenic mood, personal distress, level of functioning, etc.) have never really held any operational significance within the justice system, due perhaps to the possibility of making inaccurate predictions. As Shannon (1985:161) states, "the basic problem in attempting to predict any behavior that is deviant (and the more deviant, the more difficult) stems from the fact that far fewer than half of any group may fall in the category to be predicted, the base rate problem". It is a problem of "skewed marginals". Shannon's reluctance is shared by many justice practitioners, in that the justice system must not claim the ability to predict who will engage in future delinquent or criminal behavior when we have only the ability to state that the members of some risk groups have a greater probability of doing so than others. To make false claims may only further erode public trust in the justice system. However, it is also morally,

ethically, and legally wrong to restrict an individual's freedom based on the reluctance of a conservative justice system to implement new initiatives. We may do better, as Blumstein and Larson (1971) has suggested, to concentrate on developing procedures for identifying that very large proportion of offenders who will benefit most from minimal involvement in the justice system or, if in the system, could succeed with fewer controls.

Why Use Risk Assessment?

As individuals come into contact with the criminal justice system, they pass through several stages of processing. At each stage, criminal justice workers make an assessment as to the potential harmfulness of an individual. Risk assessments are done within the justice system on a daily basis: pre-trial, bail, sentencing, community programming, institutional classification, pre-release, duty to warn/breach of client-therapist confidentiality, and/or critical incident review (Litwack et al., 1993). Although these assessments are generally clinical, or subjective, they collectively comprise a haphazard method for justice system discretion.

Currently, as well as historically, the justice system has remained a re-active institution with regards to the development of programs, policy and initiatives. Individuals are processed through the system in an almost "trial and error" fashion, in the hopes that their behavior and attitudes have become rehabilitated and criminal recidivism does not occur. Many have argued that this method is simply inefficient (Gendreau et. al.,1996) and that if the justice system aspires towards reducing recidivism, then the efficient management of prisons, probation and parole services, as well as the development and evaluation of treatment programs is contingent, in part, upon the adequacy of our knowledge concerning the predictors of criminal behavior.

In the case of prisons, the United States is the leader in incarceration rates in the Western world, while Canada is generally ranked in the top three (Gendreau et. al.,1996). In the United States, federal inmates have risen from

65,526 in 1990 to almost double at 123,041 in 1998 (U.S. Department of Justice, 1999). Similarly, state prisoners have increased from 708,393 in 1990 to a staggering 1,178,978 in 1998 (U.S. Department of Justice, 1999). The bottom line is that at last count on December 31, 1998, State prisons were operating at between 13% and 22% above capacity, while Federal prisons were operating at 27% above capacity (U.S. Department of Justice, 1999). The continuing "war on drugs" and the recent "three strikes and you're out" bill proposed by President Clinton and enthusiastically adopted by many U.S. states may well provide a rationale for an increasing trend in the years to come.

In Canada, as compared to the U.S., there is less punitiveness in sentencing for most crimes (Gendreau et. al.,1996) but the trends for "getting tough" are emerging. The past several years have seen a decrease with regards to inmates in Canadian federal custody with 13,765 in 1997 and 13,178 in 1998 (Statistics Canada, 1999). Similarly inmates in Canadian Provincial Custody decreased from 19,526 in 1996 to 19,233 in 1998 (Statistics Canada, 1999). The greatest increase in the last ten years with regards to inmates in Canadian federal custody occurred between 1990 (11,415) and 1993 (13,322) representing a 17% increase (Statistics Canada, 1998). An increasing incarceration population combined with government cutbacks in the early 1990's combined to strain correctional caseloads. Since 1990, the total correctional caseload (institutional and community) has increased steadily from 117,571 to 139,345 in 1998 representing an 15.6% increase or a daily average of 139,345 adult offenders under the direct care or supervision of correctional agencies in Canada (Statistics Canada, 1999).

It is doubtful whether this situation will decrease during the next three years. While earlier forecasts of a 25% (Gendreau et. al., 1996) total correctional population increase over five years may not materialize, several factors are creating continued upward pressure. At the level of public opinion, fear of crime remains high despite reported decreases in the overall crime rate (Gendreau et. al., 1996). Consequently, we may expect further calls for longer sentences and the limitation or even abolition of parole as proposed by the Canadian

Sentencing Commission. At the policy level, recent and planned legislative changes are likely to lead to incarcerated population increases. These include:

The recent changes to the Young Offenders' Act, which make it easier to have 16 and 17 year-olds charged with murder and other serious offenses tried in adult court, and also lengthen their periods of parole ineligibility if they are convicted;

The amendments to the Corrections and Conditional Release Act which, among other things, make it easier to detain child sex offenders until the expiry of their sentence, and require offenders whose conditional release is revoked to serve a longer period in penitentiary before becoming once again eligible for release;

The new provisions for collection of forensic DNA evidence from criminal suspects, which may soon be complemented by a DNA data-banking scheme covering offenders convicted of personal injury offenses.

Legislation to deal with high-risk violent offenders. This could have even more far-reaching consequences for Correctional Services of Canada, since it allows the courts to designate an individual as a "long-term offender" and require that person to remain under supervision in the community for up to 10 years following completion of his or her sentence. The result could be a sizable group of offenders presenting difficult challenges of supervision to CSC community case managers as well as entailing additional costs (Correctional Services Canada, 1997).

Thus, it comes as no surprise that prison overcrowding will likely become worse. As a consequence, the ability of prison systems to manage themselves in a humane and cost-efficient manner is being seriously jeopardized. Two Government policies have been suggested which will help alleviate the stresses in this manner. First, medium and maximum-security institutions should be reserved for only those offenders who are identified as being among the highest risk to re-offend. Lower risk inmates should be transferred to minimum-security prison placements or, more preferably, to community based correctional facilities. Secondly, at sentencing, lower risk non-violent offenders can be diverted to alternative punitive strategies such as: probation, fines, community service, retribution etc., which may avoid the use of prison altogether thereby making risk assessment and prediction even more critical in future years.

Similarly, probation and parole caseloads have increased by approximately 160% in the U.S. during the last decade. These unprecedented

increases have occurred at a time when some of the largest states (i.e. California, New York), are cutting funding and subsequently staff (Gendreau et. al.,1996), a trend not unfamiliar to Canada in recent years. As of 1997, the average case load for a Canadian parole officer was between 25 and 30 offenders, not including the 20% of the 10,000 offenders under the Correctional Services Canada (CSC) jurisdiction that are contracted out to community agencies such as the John Howard Society (Correctional Services of Canada, 1997). Full parole grant in Canada has continued to increase since 1995-96 from 1952 to 2118 in 1998-99 (Canada National Parole Board, 1998-99). Furthermore, the success rate of the 1609 male offenders who completed their full parole supervision period in 1998-99 was 72.3 percent. In 445 cases (27.7%), full parole was revoked for commission of a new offense. Of the 445 cases, 232 were revoked for breach of conditions, 187 were revoked for non-violent offenses, and 26 were revoked for a violent offense (Canada National Parole Board, 1998-99).

Probation services have yielded no better results under the weight of a strained justice system. Since 1989, average probation counts have increased steadily until 1994 with an overall increase of 53% over the five years. The largest increase was recorded between 1991-92 where the average count increased by 14% (Canada National Parole Board, 1998-99). In Alberta alone there was a monthly average of 7,968 adult probationers and 3,194 young offender probationers In 1998/99 (Canada National Parole Board, 1998-99). One partial solution to the North American probation/parole dilemma is to restrict officers' supervisory practices to offenders designated as high risk. Through risk prediction, valuable supervisory practices can be assigned to high-risk offenders thereby reducing the burdening caseload of low-risk, non-threatening offenders.

Correctional policy makers and practitioners are faced with noticeable increases in prison populations, burgeoning probation caseloads, uncertain parole assessment guidelines and the need to design more effective offender treatment programs. Resolution of these issues is indeed difficult, however the

rationale for investing time and energy into risk assessment research becomes increasingly clearer.

Traditionally, the literature on risk assessment has almost exclusively dealt with static predictors, that is, measures of personal history such as age, race, and family status. As previously noted, these predictors are defined by past events and are subject to change only slowly and incrementally or not at all. Thus, previous prediction methods may be limited because their reliance on static measures ensures that they fail to provide the specific information that is required for effective short-term justice intervention (Zamble & Quinsey, 1997). This failure to provide specific information may limit justice professionals in choosing appropriate programs and/or sentencing alternatives based on risk assessment. Further, the absence of well-designed intervention evaluation studies carried out on offenders only exacerbates this problem (Bonta, 1997). All of the above leads to the conclusion that researchers must redirect attention from the general determinants of recidivism (except to identify high-risk groups for concentrated attention) to questions of how to reduce or prevent it on a shorter-term individual basis.

What is required is research on the specific co-existing determinants of recidivism. This is not to say that we should discard the information we already have on static predictors since we know that they can be useful for evaluating long-term risk potential (e.g., dangerous offender applications). Historical factors, especially those measured early in life, will retain an important place among the determinants of criminal behavior, both for understanding its origins within an individual and as predictors. Predictors such as prior criminal history have always been shown to be one of the most powerful static predictors of recidivism and will probably continue to dominate future prediction research. As often said, the best predictor of future behavior is past behavior (Bonta and Hanson, 1995).

However, at present we have little knowledge of other determinants. Regardless of the plethora of research, we do not know much about what actually happens just before and during the occurrence of recidivism. Several

sorts of events may be of interest here, most of them dynamic in nature as compared to their static counterparts emphasized in the literature. There are first relatively acute but still alterable behavior patterns of offenders, such as drug and alcohol abuse, personality/attitude, and criminal affiliation and/or socialization. These may have been strongly influenced by historical events and therefore should be correlated with and predictable from static variables. In contrast to their static counterparts, acute, rapidly changing dynamic factors, such as alcohol and/or drug abuse can signal the timing of re-offense, and are particularly useful for monitoring risk during shorter time periods such as bail and day parole.

In a study on conditional release by Motiuk and Porporino (1989) three acute dynamic predictors where found to significantly differentiate between failure and success on conditional release; criminal affiliation; alcohol/drug usage; and attitude. These three need factors were related to the outcome as follows: (1) the more negative an offender's associations (i.e., pro-criminal) in the community, the higher the probability of being revoked; (2) the more disfunctional an offender's alcohol/drug usage, the more likely that offender was to be revoked; and (3) the less responsive the offender was to assistance, the greater were the chances of being revoked.

Bonta and Hanson (1995) further gives support to the importance of dynamic predictors on shorter-term recidivism through their 1993 study on static and dynamic predictors and their significance in measuring re-offending. Bonta and Hanson (1995) identified four sets of factors that contributed significantly to recidivism within one-year from release: antisocial personality; criminal history; anti-social supports; and anti-social thinking. According to Bonta and Hanson (1995) antisocial personality is broadly defined and describes an individual who is impulsive, self-centered, callous toward others, and seeks excitement and self-gratifying pleasure.

The second variable of prior criminal history is rooted in learning theory. If people are rewarded for certain behaviors, they will behave in that manner again. Behavior that is repeated many times not only suggests that there are numerous rewards associated with the behavior but also that a behavioral habit has

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developed. In the absence of rewards, behavior with a lengthy history of reinforcement will continue (Bonta and Hanson, 1995).

According to Bonta and Hanson (1995) the two other important predictors, antisocial supports and antisocial thinking, are especially significant within social groups. A person's "significant other" may provide a model for behavior and may reward or punish certain behavior. An individual learns criminal behavior from watching and imitating the antisocial behavior of offenders and receiving their approval. Individuals can, and do, learn ways of thinking that support antisocial behavior. They can learn that shoplifting is acceptable from large profitable stores. If they describe a victim as deserving of harm, then they can hurt that individual without feeling guilty. Individuals learn these ways of thinking about others and evaluating their own behavior through interaction with others that model and reward these sentiments. According to Bonta and Hanson (1995) with repeated reinforcement, these cognitions and sentiments can become as habitual and easy to do as tying a shoelace.

In addition to the acute dynamic predictors of an offender, we assume that behavior is also strongly influenced by stable dynamic predictors, both within the offender's response as well as the internalization of that response. These stable dynamic predictors may be independent of the original causes and include most of the range of ongoing psychological processes entering actively into the choice of behavior. If these behavioral and cognitive states are the real mediators of re-offending, then direct measurement of them will be more powerful than attempting to categorize psychological functioning through the measurement of static and acute dynamic predictors. Although they may be more difficult to capture, describe, and quantify than static and acute indictors, contemporary explanations of behavior processes lead one to expect that they are critically involved and important when recidivism occurs.

The use of static, acute dynamic, and stable dynamic risk predictors not only allows this study to formulate a stronger risk assessment of recidivism through a combination of social and psychological predictors, but also allows this study to compare various predictors between the "general population" of

offenders and criminals with impaired psychological functioning. For the purposes of this thesis both static and acute dynamic predictors will form the "social domain" while stable dynamic predictors will be referred to as the "psychological domain". Building from a control theory foundation, there are two major questions this thesis attempts to answer. The questions are:

1. **Do traditional risk assessment variables (static and acute dynamic) retain similar results to the literature when predicting recidivism while on bail for individuals referred for psychological assessment?**

2. **Do stable dynamic risk predictors have a greater significance than traditional predictors do at predicting recidivism while on bail for individuals referred for psychological assessment?**

As indicated, this thesis will attempt to measure various risk assessment variables for a population of individuals referred for psychological assessment. Incorporating static, acute, and dynamic predictors this thesis will test the significance of 17 variables to measure which factors predict recidivism while on bail for individuals referred for psychological assessment. Firstly, this study will focus on the traditional risk assessment variables (static and acute dynamic) to measure their predictive significance within our population. Based on the findings from Motiuk and Porporino (1989) and Bonta and Hanson (1995), it is hypothesized that the strongest predictors of recidivism while on bail for our population of individuals referred for psychological assessment will be alcohol and drug abuse, criminal affiliation, criminogenic mood, and prior convictions. These variables represent both strong absences of social controls as well as behaviors that can be easily learned and positively reinforced. Since these behaviors can be both habitual and subject to the immediate stimulus of rewards and pressures, they should have strong significance on shorter-term recidivism.

The second research question posed by this thesis deals with stable dynamic predictor and whether these psychological factors will provide greater significance than traditional predictors of recidivism. Coping and relapse theory (Zamble and Quinsey, 1997) suggest that an individual's coping mechanism

combined with his/her thoughts and cognition's about a situation can lead to a risk (high or low) to engage in criminal behavior. Low levels of psychological functioning can be an indicator of impaired coping and relapse behavior; therefore, the stable dynamic predictors may be a strong predictor of recidivism within our population. Since psychological functioning can be a strong indicator of coping and relapse skills (Zamble and Quinsey, 1997), it is hypothesized that psychological functioning (GAF and GAF-C) will provide the greatest significance in predicting recidivism on bail for our sample of individuals referred for psychological assessment.

Lastly, this thesis examines some policy and practical suggestions that are forthcoming from risk prediction research, with a specific focus on offenders with mental illness.

THEORETICAL PERSPECTIVE
(Chapter II)

When discussing the theoretical context of risk assessment there is general disagreement as to what theory best supports the assumptions of risk assessment and the general variables to be used (Bonta, 1997). The source of any theory is an idea, an idea the theory itself attempts to articulate or express. As a result, tests of theory are tests of the articulation of an idea and, if done properly, of the value of the idea itself. The idea that serves as the basis for risk assessment is the process of identifying areas of potential offender risk and developing appropriate and effective countermeasures. The key to this idea resides in identifying "areas" of potential offender risk; an idea without constraints or limitations for which variables can be deemed significant and justifiable. In fact, most approaches in constructing an offender risk scale make minimal use of theory. This has been referred to as "dustbowl empiricism." In this approach, items for a scale are selected for no reason other than that the items demonstrate a relationship to criminal behavior.

Take for example, the early research of Ernest Burgess (Burgess in Bonta, 1997). He studied the records of over 3,000 men paroled from an Illinois penitentiary. From the records he coded twenty-one "facts" (such as nature of the offense, length of sentence, age) and then evaluated whether or not the presence of a "fact" was associated with parole outcome. The facts selected were not derived from any theory of criminal behavior. All that was required was that the variables predicted parole outcome. There was no attempt to explain, for example, why a factor such as type of offense would be related to parole outcome (Burgess in Bonta, 1997).

This atheoretical approach to risk scale development has served corrections well (Zamble & Quinsey, 1997). There are a number of such scales that do reasonably well at predicting future criminal behavior or recidivism. One example is the Statistical Information on Recidivism (SIR) Scale. Fifteen items comprise the SIR Scale, and these items (such as age, marital status, escape history) were chosen because they predicted recidivism among Canadian

penitentiary inmates. At least with male offenders, scores on the SIR Scale attempt to predict both general and violent recidivism (Bonta, 1997).

At present, the atheoretical scales seem to have approached their limits in the prediction of recidivism. Risk scales like the SIR show correlation coefficient values ("r" values) around .30 (Bonta, 1997), making them not much better than chance. Although the atheoretical actuarial risk scales were a catalyst in the development of risk assessment, they can be improved by making better use of theory. Theory will help improve risk assessment by directing us to new areas for assessment. Theory can also give us hypotheses on what aspects of the offender and the offender's situation need to be changed to reduce the chances of further crime. There is another disadvantage to relying on atheoretical risk scales. Typically, items in these scales are static in nature. For example, age of first conviction and escape history will never change. Static factors may predict recidivism in the long term, but they provide no information on what needs to be changed to reduce offender risk in shorter-term intervention. Many scholars (Bonta, 1997; Gendreau, Little & Goggin, 1996; Zamble & Quinsey, 1997) have argued that effective justice intervention must include the incorporation of dynamic factors in risk assessment scales.

Control Theory

When recidivism is discussed in a correctional context, its meaning seems fairly clear. The word is derived from the Latin *recidere*, to fall back. A recidivist is one who, after release from custody for having committed a crime, is not rehabilitated. Instead he or she falls back, or relapses, into former behavior patterns and commits more crimes (Maltz, 1984). How then, do we define "relapses"? The Oxford English Dictionary defines relapse as "a falling back into error, heresy or wrongdoing - the fact of falling back into illness after a partial recovery - to fall again into heresy after recantation". The dictionary definitions thus involve an idea of temporary cure or amelioration and a subsequent deviation back to the pathological.

Generally, recidivism in a criminal justice context is defined as the reversion of an individual to criminal behavior after he or she has been convicted

of a prior offense, sentenced, and (presumably) corrected. However, within the general definition of recidivism there exist many sub-classifications depending on who is using the definition. Criminologists generally define recidivism as a "falling back or relapse into prior criminal habits", especially after punishment. Police agencies usually measure recidivism as "re-arrest," while correctional agencies often view recidivism as a "return to prison". No matter which definition is being applied, all of the above definitions result from the concatenation of failures: failure of the individual to live up to society's expectations - or failure of society to provide for the individual; a consequent failure of the individual to stay out of trouble; failure of the individual, as an offender, to escape arrest and conviction; failure of the individual as an inmate of a correctional institution to take advantage of correctional programs - or failure of the institution to provide programs that rehabilitate; and additional failures by the individual in continuing in a criminal career after release. When discussing the theoretical relevance associated with risk prediction and recidivism, the term "relapse" or "failure" provides a meaningful starting point. As indicated above "relapse" implies a "falling back", an indication that conformity is normal and deviance is pathological.

Conformity involves the changing of one's attitudes, opinions, or behaviors to match the attitudes, opinions, or behaviors of other people. This pressure to act like other people, sometimes despite our true feelings and desires, is a common everyday occurrence. This is due to the implied and spoken rules of the situation.

These "norms" tell us what we should or ought to be thinking, feeling, or doing if we want to converge with a particular group. Most people conform to norms without much thought. For example, most people tip in restaurants, raise their hand when wishing to speak in a group setting, or sit down when they eat. While none of these incidences involve formal rules, most people comply with them. However, there are certain times when people are more or less likely to conform to the existing norms. Arguably, criminal behavior or delinquency can be one of the most common oppositions to socially accepted conformity. Most individuals agree that most form of crime is wrong; however, despite attempted shifts in punitive strategies, crime and delinquency continues to exist (Fagan,

1995). While an answer to why certain individuals conform and others deviate from socially accepted norms is difficult to ascertain, advancements in social control theory provide a plausible explanation.

Proponents of social control theory argue that the basic premise behind social control differs from alternative theories of crime in that the focus shifts from why individuals deviate to why individuals conform. "The theory rests on the Hobbesian assumption that human behavior is not inherently conforming, but that we are all animals and thus naturally capable of committing criminal acts" (Wiatrowski, Griswold, and Roberts, 1981:525). This "natural motivation" assumption does not necessarily refer to in-born tendencies to crime. Rather it refers to the assumption that there is no individual variation in motivations to commit crime; the impetus toward crime is uniform or evenly distributed across society (Wiatrowski, Griswold, and Roberts, 1981). Control theory asserts that we as a society conform because social controls prevent us from committing crimes. Whenever these controls decay or weaken, deviance is likely to result (Wiatrowski, Griswold, and Roberts, 1981). Control theory argues that people are motivated and/or constrained to conform by social controls but need no special motivation to violate the law; that comes naturally in the absence of these controls. Therefore, all individuals will at some point confront the morals, rules, and laws of society; the difference between the conformist and the deviant will be a function of the strength of controls.

Thus, control theorists assert that their objective is not to explain crime; they assume that everyone would violate the law if they could just get away with it. Instead they set out to explain why we do not commit crime. For instance, Travis Hirschi, the leading control theorist today, states:

> The question "Why do they do it?" is simply not the question the theory is designed to answer. The question is "Why don't we do it?" There is much evidence that we would if we dared (Hirshi, 1969:34).

Theories of social control focus on the strategies and techniques which help regulate human behavior and thus lead to conformity and compliance with the rules of society, including the influences of family, school, morals, values, beliefs, etc. Juveniles and adults conform to the law in response to certain

controlling forces that are present in their lives. Thus, they are likely to become criminal when the controlling forces in their lives are minimal or absent. Social control has its roots in the early part of this century in the work of sociologist E.A. Ross. Ross believed that belief systems, not specific laws guide what individuals do and this serves to control behavior.

Travis Hirschi

First articulated in his famous book *Causes of Delinquency*, the social bonds version of control theory is the product of sociologist Travis Hirschi. Hirschi (1969) argued that conformity is achieved through socialization; the formation of a bond between individuals and society is comprised of four major elements: *attainment, commitment, involvement,* and *belief.* The stronger each element of a social bond, the less likely delinquent or criminal behavior will result.

According to Hirschi's social control theory, individuals low in attachment, commitment, involvement, and belief are more likely to engage in delinquency because they are free to satisfy universal human needs in the most expedient manner, which is often criminal in nature.

Attachment corresponds to the affective ties which the individual forms to significant others. As a juvenile, the family environment is the primary source of attachment because parents act as role models and teach their children socially accepted behavior. As adults, attachment can still reside within family bonds, but, incorporates newly developed relationship bonds with significant others and children (Akers, 1994).

Commitment involves the time, energy, and effort expended in pursuit of conventional lines of action. It embraces such activities as getting an education and saving money for the future. It refers to an individual's actual or anticipated investment in conventional activities which the individual risks should they become criminal. Control theory holds that if people build up a strong involvement in life, property, and reputation, they

will be less likely to engage in acts that will jeopardize their position (Akers, 1994).

Involvement refers to participation in conventional activities that lead toward socially valued success and status objectives. The quality of an individual's activities and the relationship to future and current goals and objectives are important in preventing criminal behavior. Hirschi believes that involvement in activities insulates individuals from the potential lure of delinquent behavior that idleness encourages (Akers, 1994).

Belief is acceptance of the moral validity of the central social-value system (Hirschi, 1969:203). This variation in the acceptance of social rules is central to social control theory, because the less rule bound people feel, the more likely they are to break rules (Hirschi, 1969:26). Hirschi (1969:26) argues that there is one dominant set of values and that even criminals may recognize the validity of those values, although they may not feel bound by them because of weakened ties to the dominant social order. People who live in common social settings often share a similar moral doctrine and revere such human values as sharing, sensitivity to the rights of others, and admiration for the legal code. If these beliefs are absent or weakened, individuals are more likely to engage in antisocial acts.

Although Hirshi created a solid foundation in measuring individual's bonds to conventional society, not all individuals, in the absence of these social bonds, embrace criminal activity over socially accepted conformity. Social bonds may be fundamental in explaining an individual's tie to conventional society; however, internalization of these bonds must also be accounted for when attempting to understand criminal behavior. In an effort to better understand this subsequent association we turn to earlier advancements in social control theory best associated with Albert J. Reiss, Ivan F. Nye and Walter Reckless.

Personal Controls

The focus of control theory thus far has concentrated on the use of external controls to sanction behavior. The sociological concept of social control includes both socialization, in which a person acquires self-control, and the control over the person's behavior through the external application of social sanctions, rewards for conformity, and punishments for deviance. Reiss (1951) and Nye (1958) provided one of the earliest applications of this concept by attributing the causes of delinquency to the failure of "social" controls and a subsequent failure of "personal" controls. Personal controls are internalized, while social controls operate through the external application of legal and informal social sanctions.

Nye (1958) later expanded on this and identified three main categories of social control that prevent delinquency:

(1) *Direct control*, by which punishment is imposed or threatened for misconduct and compliance is rewarded by parents.
(2) *Indirect control*, by which a youth refrains from delinquency because his or her delinquent act might cause pain and disappointment for parents or others with whom they have close relations.
(3) *Internal control*, by which a youth's conscience or sense of guilt prevents him or her from engaging in delinquent acts (Akers, 1994).

The significance of incorporating Reiss and Nye's personal controls is that they provide support for external direct controls through formal or legal sanctions, but they also emphasize informal, indirect controls in the family. Similar to social learning theory, these indirect controls can be either positive or negative. A person's "significant other" may provide a model for behavior and may reward or punish certain behavior. Like positive behaviors, a individual may learn criminal behavior from watching and imitating the antisocial behavior of others and receiving their approval. Individuals can, and do, learn ways of thinking that support antisocial behavior. Reiss and Nye argued that the more adolescents' needs for affection, recognition, security, and new experiences are met within the family, the less they will turn to meeting those needs in unacceptable ways outside the family. Although Reiss and Nye place a large importance on the bonds within the family in contributing to delinquency, it exists as only a primary

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factor that may contribute to delinquency. External direct controls will also influence delinquency through the application of formal and legal sanctions (Akers, 1994).

At about the same time Nye was formulating his control theory, Walter Reckless (1961) proposed the "containment" theory of delinquency and crime. Reckless' containment theory builds on the same concept of internal and external control; however, Reckless explains delinquency as the interplay between two forms of control known as inner (internal) and outer (external) containment. According to Reckless, outer containment consists of discipline and supervision both by an individual's family and more formal applications such as school and legal sanctions, whereas inner containment consists primarily of a strong conscience. Containment theory assumes that for every individual a containing external structure as well as a protective internal structure exist. Both buffer, protect, and insulate an individual against delinquency. Reckless wanted his theory to explain not only delinquency, but also conformity (Akers, 1994).

Containment theory shows that society produces a series of motivations toward the act of delinquency, which Reckless termed "pulls" and "pushes". According to Reckless "Pushes" represent the condition which pressure the youth towards delinquency (i.e. poverty, deprivation, or blocked opportunities) whereas "pulls" represent the positive inducements toward delinquency (i.e. bad companions, gangs, or delinquent subcultures). Beyond incorporating the motivations of "pushes" and "pulls", Reckless also incorporates a psychological motivation in which an individual can be pushed towards delinquency by inner impulses and drives (i.e. discontent, hostility, or aggressiveness).

Of the two, Reckless suggested that inner containment is more important. It is this inner containment, he argued, that forms one's support system. The stronger one's inner containment, the less likely one would commit crime; the weaker one's inner containment, the more prone to crime one would become. "The basic proposition in containment theory is that these inner and outer pushes and pulls will produce delinquent behavior unless they are counteracted by inner and outer containment" (Akers, 1994:112). When the motivations to deviance are strong and containment is weak, crime and delinquency are to be expected.

Although containment theory provides important psychological motivations that are absent in Hirschi's, Reiss, and Nye's formulation of control theory, Reckless has been criticized for providing incomplete definitions of outer and inner containment. Reckless assumes the outer and inner containment can only have an impact through socially accepted means. What Reckless fails to recognize is that individuals may acquire strong inner and outer containment through illegitimate means such as delinquent subcultures. Individuals in a strong delinquent subculture may also acquire strong group cohesion, discipline, and a good self-concept, only these illegitimate versions may increase participation in criminal activity rather than prevent it.

Considering the evidence on risk assessment (Bonta, 1997; Zamble & Quinsey, 1997), it appears that social control theory may provide a strong general foundation for the use of static and acute dynamic variables and the limited incorporation of stable dynamic predictors in explaining recidivism. Reiss and Nye's work on social and personal controls also support our hypothesis that alcohol and drug abuse, criminal affiliation, criminogenic mood, and prior convictions will be the strongest predictors of recidivism because they represent both a strong absences of social controls as well as behaviors that can be easily learned and positively reinforced. In an attempt to better use theory in explaining predictors of recidivism this thesis expands on social control theory by incorporating coping and relapse theory. Coping and relapse theory help explain why individuals with mental illness may be more susceptible to recidivism while others choose legitimate behaviors.

Coping and Relapse Theory

Zamble and Quinsey (1997) define "coping responses" as a person's attempts to deal with a perceived problem situation. In the case of offenders, previous studies (Zamble and Porporino, 1988) provide no evidence that the problems, situations, and/or factors encountered outside of prison were distinctive in kind or in severity from the ordinary challenges that most individuals encounter. According to Zamble (1997) the difference between offenders and ordinary individuals is in their ways of dealing with these situations. Results from

Zamble's study led to the creation of a "coping criminality" hypothesis linking the repetition of criminal behavior to inadequate coping responses. Zamble hypothesized that offenders were unable to successfully recognize and resolve their problems, especially chronic situations such as strain in interpersonal relationships. One of the consequences is a considerable amount of stress, during which the individual either strikes out blindly or chooses a maladaptive, often criminal, response as a misguided coping effort (Zamble and Quinsey (1997).

One of the problems associated with this hypothesis is the choice of criminal behavior rather than some other form of maladaption; however, it is also known that a variety of generalized behaviors are common among chronic offenders (i.e. criminal association), and one may argue that these combine with distinctive criminal cognitions, and other psychological factors to channel the results of poor coping into renewed criminal activity.

Although the coping theory has a plethora of supporting data and research, including Zamble and Porporino (1988) and Zamble and Quinsey (1997), the coping explanation was in itself still vague and incomplete in terms of describing what happens after coping resources fail.

This deficiency in individual's coping response leads to a second line of research that concentrated on the events occurring within the breakdown process. Relapse theory, as this research is known, focuses on the factors responsible for the maintenance of behavioral change. In addition to coping skills, which determine whether one will enter into a high-risk situation, thoughts and cognitions play and important role. In a high-risk situation, individuals make a cognitive appraisal of their ability to cope with the situation. These assessments of self-efficacy are important because they determine subsequent action. Thus, the expectation of being able to cope with a difficult situation in itself enhances the chances of coping successfully. In addition, motivation is important as an essential condition for success, while such things as social pressure can strongly increase risk (Zamble and Quinsey, 1997). For most individuals the processes involved are automatic and have never been consciously scrutinized. Therefore, individuals may not even be aware of the

choices, decisions, and expectations that precede and accompany their habitual behaviors.

Although coping and relapse theory were developed independently of each other, they nicely merge together in an explanation of criminal behavior. Each theory emphasizes different parts of the recidivism process. Coping theory loses definition when coping mechanisms fail, just at the point where relapse theory begins a close specification of events. More specifically, for coping theory, the links between inadequate coping and criminal behaviors are likely emotional distress and cognitions that either trigger antisocial behavior themselves or defeat the individual's efforts at self-monitoring and self-control. Conversely, within relapse theory, the high-risk situations that lead to relapse into recidivism are produced by inappropriate or inadequate coping behaviors. Together, these two sets of ideas specify the probable events of interest from the occurrence of a challenging situation to the commission of a new offense (Zamble and Quinsey, 1997).

In summary, risk assessment researchers have historically utilized atheoretical or "dustbowl empiricism" in deciding appropriate variables to assess risk. Although these methods have provided a strong foundation on which to measure an individual's risk, their lack of theoretical support has produced plateaued results with prediction outcomes reaching their limits (r=.30). Hirschi's social bonding theory provides the foundation for utilizing social variables to measure an individual's bond to conventional society and therefore a subsequent risk/or lack of risk to delinquency. Further, Reiss, Reckless, and Nye's work on internal and external controls adds strength to risk prediction by including the internalization of bonds, personal controls, rewards/punishments, and indirect sanctions in contributing to behavior. Zamble and Quinsey's work on coping and relapse theory provides a potential rationale for why certain individuals faced with the same risk predictors recidivate while others choose more legitimate behaviors.

By combining advancements in social control, coping, and relapse theory this thesis is better able to utilize theory in explaining an individual's risk to recidivism. Hirschi's social bonding theory provides the foundation for measuring static and acute dynamic predictors associated with attachment, commitment,

and belief. Nye's work on informal indirect controls further supports the need to measure variables associated with an individual's family life and the subsequent strengths a strong familial bond may bring. Although Reckless' work on containment theory has been criticized in the past for incomplete definitions of inner and outer containment, his theory still provides one of the earliest applications of psychological impulses and drives. The application of psychological impulses provides a rational for measuring stable dynamic predictors and their combined influence on recidivism. Lastly, Zamble and Quinsey's work on coping and relapse theory helps to define why certain individuals faced with the same social controls, or lack of social controls, choose to deviate while others choose legitimate behaviors. Although low coping and relapse behaviors are hard to quantify, and therefore hard to measure, low levels of psychological functioning may be an indication of these behaviors. The combined effect of the above theoretical perspectives allows this thesis to articulate which variables should have the most predictive significance for recidivism and whether low levels of psychological functioning contribute to this effect.

LITERATURE REVIEW
(Chapter III)

For many years the problem of recidivism has attracted the attention of researchers, policy makers, and criminologists, to name a few. As early as 1917, investigations were carried out to gather more insight into the question of why some delinquents relapse into crime while others do not (Buikhuisen & Hoekstra, 1974). The first empirical investigation of predictors of recidivism was reported in 1923 by Hart who used statistical tests of significance to conclude that 30 of 69 variables for 680 prisoners sentenced to the Massachusetts Reformatory between 1912 and 1921 clearly differentiated the recidivists from the non-recidivists (Buikhuisen & Hoekstra, 1974).

Since that time hundreds of investigations have been carried out. Recent research has established a number of variables associated with recidivism, such as age of offense, education, broken families and family criminality (Gendreau, Goggin, and Little, 1996:5). There has been, however, considerable controversy associated with the use of psychological or internal risk predictors. There are two essential reasons for this. First, because of ideological concerns and the professional self-interest of significant segments of the profession of criminology and sociology, the import of individual differences (i.e., offender functioning level, motivation, cognition, attitudes, and personality styles) has been derided in some of the criminological literature (Andrews & Wormith, 1989; Rowe & Osgood, 1984; Wilson & Hernstein, 1985). Secondly, some methodologists (Jones, 1996) have expressed skepticism about psychological risk factors because of the supposed unreliability in their measures. Unlike their static counterparts, psychological factors can change over time and their measurement involves some degree of subjectivity. Since elementary psychometric theory reminds us that unreliability in measurement necessarily leads to an underestimation of validity (Cronbach, 1990), this line of reasoning implies that, collectively, psychological variables may be relatively weak predictors of criminal behavior. Skepticism notwithstanding, recent research, including Bonta (1997,1995) and Gendreau, Goggin, and Little (1996) has found that psychological risk factors produced higher correlations with recidivism, a much higher percentage of the

time, than did several other predictor domains, including several static criminological variables. The following chapter outlines the past literature associated with both static and dynamic variables in the prediction of criminal offenses.

Before we proceed with a thorough literature review of the various prediction variables, it is important to set the foundation by referencing existing statistics on pre-trial release or bail. Since most studies on risk assessment deal with post-release recidivism, a review of existing studies on the effects of predictors while on bail was unattainable. However, an international study by the Bureau of Justice Statistics (1996) describes pretrial release and detention practices in the United States Federal criminal justice system.

Of the defendants who had State felony charges filed against them in the Nation's 75 most populous counties during May 1996,

- An estimated 63% were released by the court prior to the disposition of their case. 31% percent were granted bail but could not comply with the conditions (e.g. bond) and 6% who were denied bail.

- Released defendants were most likely to be released on their own recognizance (38%). Commercial surety bond accounted for 28% of all releases.

- Murder defendants (16%) were the least likely to be released prior to case disposition, followed by defendants whose most serious arrest charge was robbery (39%), burglary (47%), or rape (51%)

- Less than half of defendants with an active criminal justice status at the time of arrest, such as parole (32%) or probation (44%), were released, compared to about three fourths of these with no active status.

- About a third of released defendants were either re-arrested for a new offense, failed to appear in court as scheduled, or committed some other violation that resulted in the revocation of their pretrial release.

- Of the 22% of released defendants who had a bench warrant issued for their arrest because they did not appear in court as scheduled, about a fourth, representing 6% of all released defendants, were still fugitives after 1 year.

- An estimated 16% of all released defendants were re-arrested while awaiting disposition of their case. About three-fifth of these new arrests were for a felony (Bureau of Justice Statistics, 1996).

Thirty-four percent of the 56,982 defendants charged in the United States with a Federal offense in 1996 were ordered detained by the court pending adjudication of the charges. Defendants charged with violent crimes (49.7%), immigration (47.9%), or drug trafficking (45.7%) offenses were detained by the court for the entire pretrial period at a greater rate than other offenders. Defendants with a criminal history were ordered detained at a greater rate than first-time arrestees: 38.4% of defendants with at least one prior arrest were ordered detained compared to 26.7% of first-time arrestees. Of the defendants detained, 39.4% had been arrested while on pretrial release (Bureau of Justice Statistics, 1996).

The proportion of defendants ordered detained during 1996 varied across demographic groups. Without considering any other defendant or offense characteristic, non-white defendants were detained at a higher rate than white defendants: 46.7% of Hispanic defendants, 35.9% of black defendants, and 32.8% of other non-white defendants were detained by the court compared to 19.3 of white defendants. Younger defendants were also more likely than older defendants to be detained. About 40% of those under the age of 40 were detained compared to 31.5% of those over 40. Additionally, the likelihood that the defendant would be detained decreases as the defendant's education level increased: 40.5% of defendants without a high school education were detained compared to 29.3% of those with a high school education (or equivalent), 22.1% of those with some college; and 14.6 of those with a college degree (Bureau of Justice Statistics, 1996).

Although a thorough data set comprising pre-trial release patterns for Canadians was unattainable, the Bureau of Justice Statistics information gives a brief description of offenders on bail and some of the common characteristics of offenders who are granted pre-trial release. The next section deals with the individual predictors and their association to recidivism.

STATIC VARIABLES

Age of Offense and Criminal History

With regards to past criminal history, investigations of recidivists in a number of countries suggest that the earlier in life an offender is first convicted and the more convictions he/she has, the greater the likelihood that he/she will go on committing crimes over a long period (Sellin, 1958). Of the variables found to be associated with recidivism, few have consistently been linked, either theoretically or empirically, to recidivism with the exception of age of first offense and criminal history (Gendreau Goggin, and Little, 1996). For example, Gendreau et al. (1996) found, in a meta-analysis of the adult offender recidivism literature, criminal history to be a potent predictor of recidivism. Less obvious and less robust predictors were family factors such as rearing practices and indices of educational and employment achievement. Weak predictors were social class, intellectual functioning, and personal distress (i.e., anxiety and low self-esteem). For example, James Boudouris (1984) analyzed the recidivism patterns of 468 men released from the Iowa State Penitentiary in Fort Madison. Recidivism was reported for 62 percent of the cases (after one year) who had a prior prison term or juvenile conviction compared to only 14 percent who had recidivated with no prior convictions.

Similarly, the Cambridge Study (1973) found that out of the 19 boys first found guilty between the ages of 10 and 12, 67 more offenses were recorded when they were juveniles and 21 more as adults. As Farrington states, "Even allowing for their longer period 'at risk' of reconviction, this represents a much higher reconviction rate than that of the boys convicted for the first time at later ages" (Farrington & West, 1977:11). Similarly, the third report on the Cambridge study found that youths who had multiple convictions as juveniles tended to have multiple convictions as adults (Farrington & West, 1977).

While Aboriginal people represent 3% of the Canadian population they comprised 17% of incarcerated adult inmates within the Canadian Corrections system in 1996/97. One of the important tasks for corrections is the management of offender risk: assessments of offenders' risk of committing new crimes are routinely conducted for this purpose. However, the majority of offender risk assessment instruments have been standardized on male non-Aboriginal offender populations and therefore, there is a need to further evaluate the validity of these risk scales for use with Aboriginal offenders.

In a recent study, Suzanne Wallace-Capretta (Bonta et al.,1995) stated that as a group, Aboriginal compared to non-Aboriginal offenders were younger, less educated, more likely to be unemployed and had longer criminal histories. In addition, 65.9% of Aboriginal offenders and 47.8% of non-Aboriginal offenders re-offended within 3 years of completing community supervision. However, when measured within the statistical information on recidivism (SIR) scale the total risk score had similar results for Aboriginal offenders and non-Aboriginal offenders (r=0.32 and r=0.36 respectively) (Wallace-Capretta in Bonta et. Al., 1995), which may undermine the validity of risk scores as accurate predictors of recidivism in Aboriginal offenders. Almost all of the items from the risk assessment instrument predicted re-offending for both non-Aboriginal and Aboriginal offenders. These items were peers, alcohol and drug abuse, attitude, employment, prior criminal history, sex (male), age (younger), address change and financial situation. Family/marital relationships, mental ability and academic/vocational skills predicted re-offending among non-Aboriginal offenders only. Finally, emotional stability did not predict recidivism for either Aboriginal or non-Aboriginal offenders. A further breakdown of the Aboriginal sample revealed that Métis offenders were more similar to non-Aboriginal offenders in terms of their risk factors. Every risk item that was associated with recidivism for non-Aboriginal offenders was a risk factor for Métis offenders. However, there was variability for the status Aboriginal offenders. Only 7 of the 15 items predicted re-offending for "reserve" Aboriginal offenders and still fewer items (4 of 15) for "non-reserve"

Aboriginal offenders. The total risk-needs scores nevertheless, predicted recidivism for all four groups (Bonta et al., 1995).

Family stability

Criminologists suggest that a child who grows up in a dysfunctional family may learn antisocial behavior, may not be taught how to control unacceptable behavior and may not be supervised enough to prevent association with antisocial peers. As a result, the child (in theory) becomes inadequately socialized and unable to keep his or her behavior within socially accepted boundaries.

Considering the importance of early family life, it seems logical that later family life might also be associated with the likelihood of adult criminality. Popular belief suggests that marriage and parenthood provide people with a social investment in conforming to societal norms and, therefore, act as informal behavior controls. The role of husband/father or wife/mother are simply viewed as incompatible with a criminal lifestyle. Recent research (Fagan, 1995) has also indicated that people are more concerned about losing their family's respect than about being arrested or imprisoned. It has been suggested, therefore, that family relations may play a more significant role than criminal sanctions in deterring crime. This obviously has great implications for correctional policy makers. If marriage and parenthood reduce the likelihood of criminal offending, family supports may become the preferred strategy for attacking crime and recidivism rates.

Early research in this area tried to determine the impact of marriage on criminality by comparing groups of convicted offenders with non-offenders. Results were, however, inconsistent and mixed. For example, a 1977 study reported that early marriage did not produce a significant reduction in subsequent criminality. In fact, offenders who were married before age 21 were significantly more likely to have a conviction record. The study did reveal, however, that delinquent fathers whose wives did not have a criminal record had lower recidivism rates after marriage than similar fathers who married women with a criminal record. Further, while marriage did not appear to reduce the likelihood

of further criminal or delinquent behavior, it did reduce some of the habits commonly associated with delinquency (drinking, sexual promiscuity and drug use) (Knight, Osbourne & West, 1977).

However, a study by Sampson and Laub (1990) began to clarify how marriage might affect an individual's propensity for criminality. Rather than using marital status, the researchers created an "attachment to spouse" measure to gauge the quality of relationships and attitudes about marital responsibility and family cohesion. The study revealed that attachment to a spouse in young adulthood was associated with a significant and substantial reduction in adult antisocial behavior. This led to the conclusion that social bonds to adult institutions exert a powerful influence on adult crime.

While this link between marriage and/or parenthood and crime is now better understood, policymakers also need to appreciate another strong and disturbing pattern evident in scholarly studies: the link between illegitimacy and crime and between the lack of parental attachment and crime. A review of the empirical evidence in the professional literature of the social sciences gives policymakers an insight into one of the root causes of crime. Consider, for instance:

- Over the past thirty years, the rise in violent crime parallels the rise in families abandoned by fathers.

- High-crime neighborhoods are characterized by high concentrations of families abandoned by fathers.

- State-by-state analysis by Heritage scholars indicates that a 10 percent increase in the percentage of children living in single-parent homes leads typically to a 17 percent increase in juvenile crime.

- The rate of violent teenage crime corresponds with the number of families abandoned by fathers.

- The type of aggression and hostility demonstrated by a future criminal often is foreshadowed in unusual aggressiveness as early as age five or six.

- The future criminal tends to be an individual rejected by other children as early as the first grade who goes on to form his own group of friends, often the future delinquent gang (Fagan, 1995).

On the other hand:

- Neighborhoods with a high degree of religious practice are not high-crime neighborhoods.

- Even in high-crime inner-city neighborhoods, well over 90 percent of children from safe, stable homes do not become delinquents. By contrast only 10 percent of children from unsafe, unstable homes in these neighborhoods avoid crime.

- Criminals capable of sustaining marriage gradually move away from a life of crime after they get married.

- The mother's strong affectionate attachment to her child is the child's best buffer against a life of crime.

- The father's authority and involvement in raising his children are also a great buffer against a life of crime (Fagan, 1995).

The scholarly evidence, in short, suggests that at the heart of the explosion of crime in North America is the decline of the capacity of fathers and mothers to be responsible in caring for the children they bring into the world. This loss of love and guidance at the intimate levels of marriage and family has broad social consequences for children and for the wider community. The empirical evidence shows that too many young men and women from broken families tend to have a much weaker sense of connection with their neighborhood and are prone to exploit its members to satisfy their unmet needs or desires. This contributes to a loss of a sense of community and to the disintegration of neighborhoods into social chaos and crime. If policymakers are to deal with the root causes of crime, therefore, they must deal with the rapid rise of illegitimacy.

These basic assumptions have been further reinforced in much of the current and past literature on family stability and crime. For instance, Farrington and West (1977) found that 28 boys whose homes were broken by death were not particularly prone to delinquency (21% of 28, compared to 18% of 335 from unbroken homes). However, the 48 boys whose parents either deserted, separated or divorced included a high proportion (37%) who were delinquent. These findings are in general conformity with related studies including Eidner (1966) and Grygier et al. (1969) that all found statistically significant relationships between family break-ups and criminal activity.

Studies with a focus on family size report that delinquents tend to come from large families. These findings have been replicated in England, Scotland, Australia, and the United States (Fagan, 1995). Similar results were also recorded by Farrington and West who found that boys with four or more siblings

were significantly more delinquent than the remainder of the sample (32% of 99, as opposed to 16% of 312) (Farrington & West, 1977). Large family size has a particular implication for boys first convicted at an early age. As Farrington states "Of the 19 boys first convicted at 10-12, 57.9 per cent were from large families, compared with only 32.4 per cent of the 34 boys first convicted at 13-14 and 32.3 per cent of the 31 first convicted at 15-16" (Farrington & West, 1977:31).

Family Conflict

The empirical evidence shows that, for a growing child, the happiest and most tranquil family situation is the intact primary marriage. But even within intact two-parent families, serious parental conflict has devastating effects. The famous studies of Harvard professors Sheldon and Eleanor Glueck in the 1950s found that one-third of delinquent boys in their sample came from homes with spouse abuse. The Cambridge-Somerville Youth Study observed that the incidence of delinquent behavior was higher in intact homes characterized by a high degree of conflict and neglect than it was in broken homes without conflict. As this and other studies have shown, the lack of emotional attachment to parents is more strongly related to delinquency than is an intact home. Professor Kevin N. Wright, in his review of the literature for the Department of Justice, lists twenty-one other major studies that clearly show the link between parental conflict and delinquency. The lesson is clear: conflict between parents hurts the child. The more frequent or intense the conflict, the more the child is hurt emotionally. In sharp contrast, tranquillity and peace in the family and in the marriage help prevent delinquency (Fagan, 1995).

Breakup of their parents' marriage during the first five years of their life places children at high risk of becoming juvenile delinquents. This breakup, through either divorce or separation is most likely to occur three to four years after marriage. Therefore, a large proportion of very young children experience the emotional pain of the early and final stages of marital dissolution at a time when they are most vulnerable to disruptions in their emotional attachment to their parents. In addition, family instability has also been linked to criminality

(McCord, cited in Farrington, 1983). However, McCord notes that it is feuding rather than separation, which is associated with criminality.

Family dissolution is fast becoming the associated phenomenon of the 80's and 90's. As these dissolved families emerge, a new but just as dangerous situation arises: that of the "step family". Conflict within "step families" (families where at least one of the married parents is not the biological parent of all the children) also has serious effects. According to the California Youth Authority study of female delinquents conducted by Jill Leslie Rosenbaum, professor of criminology at California State University, "In the two parent families examined in this study a great deal of conflict was present. Of these parents, 71 percent fought regularly about the children. Since there were often 'his', 'hers' and 'theirs' present, the sources of conflict tended to result from one set of children having a bad influence on the others, the type of punishment invoked, or one particular child receiving too much attention" (Fagan, 1995).

Rates of conflict are much higher outside intact marriage families. Not surprisingly, the rates of emotional and behavioral problems of children are more than double in step families. Given their impact on children, the marriage arrangements of parents have significant effects on the incidence of teenage crime.

DYNAMIC VARIABLES

Education

The connection between education and crime has long been a favorite topic of research studies. Although many studies focus on the correlation between intelligence and/or IQ and criminal activity, for the purposes of this study we are only interested in educational attainment. In the Cambridge study, Farrington and West (1977) found that individuals who rated themselves low on educational attainment scales included a high proportion of juvenile recidivists (21% of 121, as opposed to only 4% of the remaining 290 boys). Farrington and West (1977) also found that low educational attainment remains a consistent characteristic in the criminal activities of adults. "The 162 boys who left school at

an early age (under 15.5), who may be presumed to be the least effective, least welcome, or least committed scholars, included a significantly high percentage (32.7%) who were delinquent. In contrast, of the 94 boys who stayed on at school until 16.5 or later, only 6.4 per cent were delinquent" (Farrington and West, 1977:89).

Another significant factor associated with risk of criminality is poor school performance or failure to thrive in school, often leading to early school leaving. Studies dating back to 1915 have observed a relationship between school performance and criminal offending in youth (LeBlanc, Vallieres & McDuff, 1993). According to LeBlanc et al. (1993), school performance is a significant predictor of both adolescent and adult criminality. Teachers are more likely to report behavior problems in boys who later become delinquent; "in West's study, 38 per cent of the 'most troublesome' at the age of 10 years became delinquent, compared to four per cent of the 'least troublesome'" (West & Farrington, 1977, cited in Ouston, 1984, p. 4). Delinquents are less successful in school than non-delinquents, have lower attendance rates and are more likely to leave school early (Ouston, 1984).

Drop-outs experience numerous difficulties. The Mayor's Task Force in Edmonton, Alberta on Safer Cities' Children and Youth Committee (1992, p.3) found that "only two years after leaving school, drop-outs are more than four times as likely as are school graduates to have been in trouble with the law." Further, school drop-outs are more likely to be unemployed or underemployed (Mayor's Task Force, 1992).

The discussion of the relationship between school performance and delinquency demonstrates the inter-connectedness of risk factors. One cannot examine the relationship between school performance and delinquency without taking into account the factors associated with poor school performance and early leaving: low family income, low family education level, abuse, single parent household, low grades, learning difficulties, truancy and lack of attachment to school (Canadian School Boards Association, 1991). Indeed, the Canadian Council on Social Development (CCSD, 1991) reports that the main factors related to poor educational attainment among Aboriginal youth are poor health and poverty. Other factors related to low education levels among Aboriginal

youth include: low expectations for economic success, lack of positive role models, inadequate child care, culturally inappropriate school curricula, alcohol abuse, violence and poor living conditions (CCSD, 1991).

Employment

Employment and crime have a complex relationship. For example, some people choose crime rather than legitimate work because of an expectation that they can make more money from crime and/or because they find it more rewarding in other ways (Katz, 1989; Bourgois, 1995). For others, the opportunity for legitimate employment is diminished because of their criminal history and/or criminal labels. On the other hand, the workplace can attract people because it offers opportunities for certain kinds of crimes that are more difficult to commit elsewhere, such as internal theft.

This brief review establishes that researchers have measured a relationship between crime and employment, and that a number of mechanisms may explain the relationship that exists. Studies of the 1945 Philadelphia birth cohort have shown that unemployment is associated with crime (e.g., Wolfgang, Figlio, Sellin,1972), a finding that is reported in numerous other studies. However the causality is uncertain. Sampson and Laub (1990) argue that employment per se or by itself does not reduce crime or increase social control; it is only stability, commitment and responsibility that may be associated with getting a job that has crime-reducing consequences. Gottfredson and Hirschi (1990) argue that the relationship is essentially spurious, reflective of a common third factor, which they call the level of individual self-control.

A number of studies indicate various outcomes regarding employment status for delinquent youths, including poor work records, lower status jobs, higher unemployment, and a greater frequency in the number of various jobs. Ferguson (1952) found that delinquents tended to have erratic work histories. "Those who were currently employed, those who had never spent more than a year in any one job, those who had changed their jobs frequently (i.e. an average of more than two jobs per year since leaving school) all included high proportions who were delinquents, and especially high proportions who were recidivists"

(Ferguson, 1952:54). Similarly, Sampson and Laub (1990) found that one third of their borstal youths had had 9 or more jobs, and Davies (1969) discovered that more than three-quarters of his probationers had been fired or "released". In opposition, Dunlop and McCabe (1965) found that two-thirds of their detention centre youths had held a job for one year or more, but in contrast, Stratta (1970) discovered that this was only true for about one third of her study (Farrington & West, 1977).

Meanwhile, Hiew and MacDonald (1986, p. 292) claim that "unemployment in all its forms is a major stressor linked to physical and mental illness, to alcoholism and higher crime rates, and to family violence." Further, the Mayor's Task Force on Safer Cities' Young Adult Employment Committee (1992) found that long-term unemployment among young adults can permanently impair their ability to become responsible citizens.

> No one doubts that an increase in unemployment leads to an increase in crime. The sense of frustration and despair that joblessness can provoke finds expression in a variety of ways: theft, substance and alcohol abuse, and spouse and child abuse. (Mayor's Task Force, 1992)

Studies on the relationship between unemployment and crime show inconsistent results, although more often than not a positive relationship has been found (Juvenile Crime Prevention Project, 1984). Indeed, studies have found that massive layoffs witness corresponding increases in crime rates (Waller & Weiler, 1984). The Alberta Solicitor General reports that a high number of youth admitted to correctional facilities are unemployed (cited in Mayor's Task Force, 1992). Further, a study on the relationship between unemployment and repeat offending found that one year after release from federal penitentiaries, unemployed men were more likely to re-offend than employed men, 42 percent versus 29 percent respectively (Waller & Weiler, 1984). The Canadian Council on Social Development (CCSD) (cited in Mayor's Task Force, 1992) points out that "there is evidence that individuals confronted with failure in the school setting combined with an unstable job record are susceptible to continued involvement in crime."

Criminal Association and Criminality in Families

In a longitudinal study of 394 families in England, David P. Farrington, professor of criminology at Cambridge University, found that approximately 4 percent of these families accrued almost half of the convictions of the entire sample. "The fact that delinquency is transmitted from one generation to the next is indisputable.... Fewer than 5 percent of the families accounted for almost half of the criminal convictions in the entire sample.... In order to achieve such concentration of crime in a small number of families, it is necessary that the parents and the brothers and sisters of offenders also be unusually likely to commit criminal acts" (Farrington and West, 1977).

The findings for England, though dramatic and for a different culture and country, comport with the earlier U.S. research as summarized by Professor Kevin Wright of the State University of New York at Binghamton:

> The Gluecks determined that delinquents were more likely than nondelinquents to have delinquent fathers and mothers. Subsequent studies supported the Gluecks' findings, observing that delinquent boys were more likely to have delinquent or criminal parents. In a study of the families of black delinquents in St. Louis, Robins found that a child's delinquent behavior was associated with 1) arrests of one or both of the parents in their adult years, and 2) a history of juvenile delinquency on the part of the parents. Children with two parents with criminal histories were at extremely high risk of delinquency (Wright in Fagan, 1995:22).

Similarly, girls involved in crime tend to mate with (if not marry) men with criminal records. Jill Leslie Rosenbaum of California State University, describing young delinquent women in her study, states: "The men in the wards' lives bore a striking resemblance to the men chosen by their mothers. Many were significantly older than the girls and had criminal records" (Rosenbaum in Fagan, 1995:23).

According to police records, most offenses, especially those committed by juveniles, are committed together with one or more other persons. With regards to juveniles, Farrington and West (1977) found that about five-sixths of the burglaries (46 out of 56), and three-quarters of the thefts from shops (18 out of 24) were recorded by the police as being committed by more than one individual.

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Nine-tenths (27 out of 30) of the thefts from vehicles were also committed by more than one individual (typically one other). In total 71 out of the 84 boys had committed an offense with another individual with only 13 boys recording solitary offenses, most of which were sexual and violent in nature. In contrast, a survey by P. Willmott (1966) found that youths, especially in the 17 to 18 age range, typically hung out in small groups. However, Willmott (1966) noted that law breaking did not loom large in the activities of adolescent male groups. In fact, of the 334 youth in the survey a majority (51.5%) reported that they had not been involved in group fights, violence or vandalism in the past three years. According to Willmott (1966) "Most group purposes appeared loosely social rather than anti-social". Although group activity is less of a factor for adult criminality, Boudouris (1984) found high percentages (51%) of recidivism patterns for those acknowledging heavy criminal associations on the "outside". Whether this is an outcome perpetuated through the process of the criminal justice system or a function of lifestyle is debatable.

Based on an old English study by Burt, Bagot, Mannheim and Carr-Saunders (Ferguson, 1952), boys were more likely to become delinquent if other members of their family had criminal records. Ferguson (1952) showed that boys with criminal fathers were twice as likely to become delinquent (24% compared to 11%) and three times as likely if there was a delinquent older brother present (33% compared to 10%). These results were duplicated in Sweden in 1967 when Jonsson (Jonsson in Farrington & West, 1977) argued that delinquent boys were especially likely to have criminal parents. A well known American study by Glueck and Glueck also found that two-thirds of the fathers of delinquents had a history of criminality, compared to only one-third of the fathers in the non-delinquent control group (Farrington & West, 1977).

Drug and Alcohol Abuse

"In both animal and human studies, alcohol, more than any other drug, has been linked with a high incidence of violence and aggression." (Secretary of Health and Human Services, January 1990).

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There is generally little disagreement in the criminological literature as to the correlation between drugs, alcohol, and crime. Whether the correlation is direct, such as criminal behaviors under the influence of drugs and/or alcohol, or indirect, such as individuals committing crimes to obtain drugs and/or alcohol, there is little controversy that crime is inextricably related to alcohol and drug use.

In the United States, there are more than 1.1 million annual arrests for illicit drug violations, almost 1.4 million arrests for driving while intoxicated, 480,000 arrests for liquor law violations and 704,000 arrests for drunkenness. These 4.3 million arrests for alcohol and other drug statutory crimes account for over one-third of all arrests in the United States (U.S. Department of Justice, 1991).

The need for studying the effects of alcohol and/or other drug use in relation to crime is exemplified through the following statistics:

Alcohol is a key factor in up to 68 percent of manslaughter, 62 percent of assaults, 54 percent of murders/attempted murders, 48 percent of robberies, and 44 percent of burglaries.

Among jail inmates, 42.2 percent of those convicted of rape reported being under the influence of alcohol or alcohol and other drugs at the time of the offense.

Over 60 percent of men and 50 percent of women arrested for property crimes (burglary, larceny, and robbery) in 1990, who were voluntarily tested, tested positive for illicit drug use.

In 1987, 64 percent of all reported child abuse and neglect cases in New York City were associated with parental Alcohol and Drug abuse (U.S. Department of Justice, 1991).

Along with the plethora of statistics outlining the relationship between drugs and crime, a large number of studies focus on the specific implications of drugs and alcohol for criminal activities. James (1973) concluded that in Britain, alcohol was undoubtedly the most common drug associated with crimes of all types. Zacune and Hensman supported James' conclusion in that they found that 68 per cent of criminals claimed to have been drinking immediately before committing their offenses. In contrast to the widely accepted link between drugs and crime, some studies, including Dunlop and McCabe (1965) and Backhouse

and James (1973), found that one-third of delinquents in detention denied that they drank alcohol. However, neither of these studies included a control group (Farrington & West, 1977).

Social Attitude

A single definition of an attitude is somewhat elusive as definitions have shifted and redefined themselves throughout the decades. However, the following definition has stood the test of time: "an attitude is a relatively stable pattern of beliefs, feelings and behavior tendencies toward some object." (Law, 1999:3). Moreover, attitudes are learned, malleable entities that directly influence behavior. These hypotheses have been well corroborated in the published literature across several disciplines (Krosmick, 1988).

The importance of attitudes in offender rehabilitation was first recognized almost a century ago. Since then, multiple studies, including a recent meta-analytic review by Moira Law (1999), confirm the ability of attitudes to predict criminal behavior for both institutional settings and community adjustment. Attitudes are also productive targets for intervention, with changes in values and beliefs resulting in marked changes in behavior.

Moira A. Law conducted a meta-analysis that examined the predictive potency of criminal and antisocial attitudes in 32 studies. The review is organized around the principal components, subcomponents and indicators that make up the attitudinal domain of the Case Needs Identification and Analysis (CNIA). The meta-analysis yielded 112 correlations with recidivism/misconduct. Overall, the meta-analysis indicated that the justice, violence and lifestyle components of the CNIA are moderately related to recidivism. In contrast, the society component was only weakly related to recidivism. Although the strongest CNIA indicator was non-conforming attitudes, the weakest CNIA indicators were attitudes toward employment and school, marital and family, interpersonal relations, and personal and emotional stability (Law, 1999).

STABLE DYNAMIC VARIABLES

Emotional, Physical, and Sexual Abuse

The professional literature is replete with findings of a connection between future delinquency and criminal behavior and the abuse and neglect visited upon children by their parents. This abuse can be physical, emotional, or sexual. "Overwhelmingly," observes Patricia Koski, "studies conducted since 1964 have found a positive correlation between parent-child aggression-violence-abuse-physical punishment and aggression on the part of the child." Or, as summarized by Cathy Spatz Widom, "Violence begets violence" (Widom in Fagan, 1995).

Studies of the official records of abused children and arrested offenders put this connection in the range of 14 percent to 26 percent. But the connection triples to a range of 50 percent to 70 percent once researchers go beyond official reports of investigated cases of child abuse to reports of abuse by the delinquents themselves (Standing Committee, 1993).

Significantly, American gang members almost without exception grew up in dangerous family environments. Typically, they left home to escape the violence or drifted away because they were abandoned or neglected by their parents. Consequently, these young men have developed a defensive world view characterized by a feeling of vulnerability and a need to protect oneself, a belief that no one can be trusted, a need to maintain social distance, a willingness to use violence and intimidation to repel others, an attraction to similarly defensive people, and an expectation that no one will come to their aid. Young women delinquents who run away from home are also frequently victims of sexual abuse.

The close connection between child abuse and violent crime is highlighted also in a 1988 study of the 14 juveniles then condemned to death in the United States: 12 had been brutally abused, and 5 had been sodomized by relatives.

Child sexual or physical abuse alone can outweigh many other factors in contributing to violent crime but affects boys and girls differently. Abuse visited upon girls is more likely to result in depression (the inversion of anger) or psychiatric hospitalization than in the more outwardly directed hostility of abused

males. According to Cathy Spatz Widom (Widom in Fagan, 1995), "Early childhood victimization has demonstrable long-term consequences for delinquency, adult criminality, and violent behavior.... The experience of child abuse and neglect has a substantial impact even on individuals with otherwise little likelihood of engaging in officially recorded criminal behavior."

Personal Distress

Until 10 years ago, research on the connection between mental disorders and violent behavior was conducted only on institutionalized populations. Recent research that has also looked at the general population has found a statistically significant relationship between mental disorder and violence; but in absolute terms, the relationship is modest (Monahan, 1996).

One study found that 3 percent of the variance in violent behavior in the United States is attributable to mental disorder, and other studies have shown that people with mental illness are more likely to be victims than perpetrators of violence. Most significantly, the link of mental disorders to violent behavior is not based on a diagnosis of mental illness but on current psychotic symptoms. Research to date indicates static predictions of an individual's danger to others are not realistic. Recent epidemiological studies have instead sought to identify those psychotic symptoms and related factors that could predict the occurrence of violent behavior. One major study has linked symptoms of hostility and delusions, especially when combined with substance abuse, with a high probability of violent behavior. On the other hand, demographic factors, such as age and gender, appear to be more important for predicting violence among the general population than among those with mental disorders (Monahan, 1996).

Jeffrey Swanson and colleagues at the University of Texas Medical School reanalyzed data collected for the National Institute of Mental Health's ECA study from the early 1980s. The study had involved interviews with 10,000 randomly chosen adults from five cities to determine the epidemiology of various psychiatric disorders. Swanson's team identified questions used to determine antisocial personalities and examined how responses to them related to mental disorders (Swanson in Monahan, 1996).

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Their analysis found that people with major mental disorders such as schizophrenia had statistically significant higher rates of violence than those who did not (11-13 percent - the percentage varied depending on the particular diagnosed illness - compared to 2 percent). However, the diagnosed illness most associated with violence was substance abuse: 25 percent for alcohol abuse and 35 percent for drug abuse (Monahan, 1996).

Further, Charles Lidz, Edward Mulvey, and William Gardner at the University of Pittsburgh Medical Center obtained clinicians' predictions of the likelihood of violence among hundreds of patients from an acute hospital who returned to the community. The clinicians were moderately accurate at predicting violence among male patients but no better than chance at predicting violence among female patients. Clinical staff predicted that 45 percent of the males and 22 percent of the females would become violent. The data showed that 42 percent of males and 49 percent of females behaved violently within 6 months after release. Reasons that clinicians inaccurately predicted violence among female patients may be because men in the general population are 10 times more likely to be arrested for a violent crime than women, because women are usually not violent in public places, and because women are less likely than men to seriously injure their victims (Monahan, 1996).

Mental Ability, Mental Health and Interventions

The ability to predict delinquency, adult criminality and recidivism based on mental ability has frequently been controversial among researchers (Bonta and Hanson, 1995). It is unclear whether the knowledge of mental deficiency in an offender would help predict recidivism.

Offenders with mental disorders are often viewed as a dangerous subgroup that have a high rate of post-release recidivism, especially violent recidivism. However, a recent meta-analysis (Bonta et. al., 1998) showed that offenders with mental disorders were less likely to commit general or violent crimes on release than other offenders.

Methods of Analysis

As noted above, multiple studies, research, and policy initiatives have resulted in a plethora of evidence linking an individual's social, economic, and psychological environments to recidivism. However, less attention in the literature has been given to the methods of analyses in finding these links. Mutivariate analyses have rarely been employed to study recidivism (Kassebaum, Ward & Wilner, 1971; as cited in Pallone & Hennessey, 1977; Buikhuisen & Hoekstra, 1974). An exceptional study conducted by Pallone and Hennessy (1977) explored the relationship between recidivism and 19 predictor variables reflective of offender characteristics among 105 young adult male offenders 22 months after their parole from a medium-security prison. Significant bivariate relationships were found between the criterion and marital status, religious group membership, nature of offense, number of drug-related charges associated with the "target offense" and number of prior sentences. Stepwise multiple regression produced an r^2 of 0.499 between recidivism outcome and the following set of six multiple predictors: race-ethnicity, religious group membership, area of residence, number of prior sentences, prior institutionalization, and number of drug related charges. Often no tests of significance have been applied with the majority of the investigators resorting to bivariate analyses. Information about the amount of variance explained by the predictors is rarely reported.

Thus far, we have looked at some of the potential uses of risk prediction research in creating a more efficient and effective justice system. We have also focused on advances in social control, coping, and relapse theories for support in using both static as well as dynamic variables for a more accurate prediction of recidivism. Lastly, a substantial body of literature has indicated that certain predictors have demonstrated a relationship to criminal behavior and more specifically recidivism. We now turn our attention to testing the applications of risk assessment to predict recidivism while on bail for our sample of individuals referred for psychological assessment.

METHODS

(Chapter IV)

RESEARCH DESIGN

This thesis measures the effects of static and dynamic predictors on recidivism rates while on bail for individuals referred for psychological assessment. Therefore, a thorough data set was needed which compiled social variables, psychological variables, as well as criminal records (arrest data) for a Canadian sample. Although various data sets were examined, none were found which captured the diversity and specifications that this thesis required. Therefore, it was decided that this thesis would proceed using a secondary data set compiled from two distinct sources; F.A.C.S. (Forensic Assessment & Community Services: A service of Alberta Hospital Edmonton, Psychiatric Treatment Centre); and C.J.I.S. (Criminal Justice Information System: a service of the Government of Alberta, Ministry of Justice).

Through the collection of pre-sentence reports, psychiatric assessments, police reports, probation reports, and various other sources, F.A.C.S. creates and maintains a personal history file on individuals referred for psychiatric services (information beyond personal demographics are not compiled for those individuals who require "no further action" after their initial assessment). These files provide an excellent source to gather both social and psychological variables (listed below). Not only do these files provide consistent information relating to social and psychological factors, but they also allow this thesis to enhance validity through the compilation of information (such as drug or alcohol dependence) from various resources (i.e. psychological assessment, patient acknowledgment, and probation report, etc.).

Our second data set utilizes C.J.I.S. as an effective means to gather information relating to whether or not a person has recidivated. C.J.I.S. is a computer data base which contains information relating to individual law offenders within the Canadian Criminal Justice System and is created and maintained by the Provincial Government of Alberta. C.J.I.S. will be utilized

because of its accuracy (fewer data entry problems than alternative data bases (e.g. C.A.P.S.) and because it is one of the most current criminal justice data banks. This ability to remain current is essential, as this thesis takes the year 1996-97 as its sample parameter and requires criminal information while on bail, which can occur as late as 1999. C.J.I.S. provides data on bail and court information and therefore can provide the relevant information relating to criminal behavior within our specified follow-up period (bail length).

Because of criticisms relating to past recidivism studies which fail to define and specify a time frame, this thesis has chosen the bail process in which to measure the effects of social and psychological variables on recidivism. Because this thesis measures the effects of dynamic variables that the literature claims to have a greater significance on shorter-term recidivism, bail was chosen as the time frame for measurement. Although it is recognized that in utilizing an individual's bail length as a measurement period, inconsistent time frames are being utilized for comparison, the bail length was the only short-term time frame that would have been minimally influenced by the criminal justice process.

Fifteen of the seventeen variables included in the study were selected based on the risk assessment/recidivism literature and were selected as independent variables. Two additional independent variables were utilized (GAF and GAF-C) which are absent from the literature and have not been tested for reliability but are still believed to be solid indications of a person's level of psychological functioning. As discussed in Chapter IV, several of these variables have been included in recent studies of recidivism (Buikhuisen & Hoekstra, 1974; Pallone & Hennessey, 1977; Gendreau, Goggin, and Little, 1996; Gendreau, 1996; Monahan, 1996; Bonta, 1995, 1997; Zamble and Quinsey, 1997). Of the seventeen variables, all were collected and placed within appropriate categorical responses or left within their ratio or interval measurements (i.e. age, education, GAF, and GAF-C).

Static Variables

Building from our literature review and within the confines of our sources of data, the following variables were utilized to represent static predictors: *Family*

Status, Marital Status, Children, Race, Age, Prior Convictions, and Family Conflict. From a theoretical standpoint, Hirschi's work on social control indicates that the variables family status, marital status, children, criminal affiliation, and family conflict are measures of *attachment.* Although it is recognized that Hirschi intended attachment to be a measure of quality with regards to relationships, the limitations of our data set did not allow a compilation of this measure. Recall that attachment corresponds to the affective ties which the individual forms to significant others. These variables constitute an observable measure of attachment that give a general depiction about an individual's relationships or lack of significant relationships.

The variable of family status is compiled from two categories: (1) intact; and (2) broken. Marital status is categorized as follows: (1) single; (2) married; and (3) divorced. Regarding the variable of children, it was important to document not only if an individual had children, but also, how many he or she had; therefore, the variable of children was coded as follows: (0) zero children; (1) one child; (2) two children; (3) three children; (4) four children; and (5) five or more children[3]. Criminal affiliation is also utilized under Hirschi's attachment bond, but not as a positive relationship deterring criminal behavior but as an inverse relationship which may encourage delinquency.

Social learning theory also provides a rationale for utilizing criminal association as a measure of attachment.

> The principal behavioral effects come from interaction in or under the influence of those groups with which one is differential associated and which control sources and patterns of reinforcement, provide normative definitions, and expose one to behavioral models....

> Deviant behavior can be expected to the extent that it has been differentially reinforced over alternative behavior (conforming or other deviant behavior) and is defined as desirable or justified when the individual is in a situation discriminative for the behavior (Akers, 1985:57-58).

Criminal affiliation is categorized as: (1) none; (2) affiliation with a friend who is convicted of a criminal offense; (3) siblings with a criminal offense; (4) one or both parents with a criminal offense; and (5) any combination of the first four. Prior convictions were also utilized as a static predictor and was measured by the

number of previous convictions utilizing the following categories: (0) none; (1) 1 to 5; (2) 6 to 10; and (3) 11 or more prior convictions. The last variable under attachment is family conflict, and pertains to an individual's family environment while growing up. It is divided into: (1) none; (2) family discord within the immediate family; (3) conflict with significant others close to the family; and (4) violent conflicts between the individual and their family and/or between other family members.

In addition to the static variables related to social control theory, this thesis incorporates variables such as age and race that have had statistical support in previous research. Age of first offense was incorporated because of the vast amount of literature documenting the link between earlier delinquency and later criminal behavior. Because of confidentiality in the Young Offender Act juvenile records could not be accessed and therefore age of first offense could not be collected. Instead the age variable was collected which measures a persons age as at 1996 and is recorded as a ratio measure.

In Canada, there exists an over-representation of Natives within the justice system, a problem many have argued (McCaskill, 1985; Depew, 1986; LaPrairie, 1984 in Bonta et al., 1995) stems from the political and socio-economic conditions shared by Canadian Natives. Many observers argue (Richardson, 1975; Morrison & Wilson, 1986; Asch, 1984 in Bonta et al., 1995) that the subordinate political and economic position of Native groups is a consequence of the colonization of Natives by Europeans and of Canadian government policies that have exerted control over virtually every aspect of Native life. A major consequence of this minority status is "victimization" of Native people, which is evident by pervasive poverty, high rates of unemployment and reliance upon public assistance, low levels of formal education, high death rates from accidents and violence, and increasing rates of family breakdown (Bonta et al., 1995). Although a discussion of patterns of crime and criminality among Native peoples is hindered by a lack of published research, it is likely that the socio-economic condition of many Native peoples plays a direct role in their involvement in criminal behavior and with the criminal justice system. This study incorporates a

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[3] Within the sample obtained from FACS no subjects had more than five children

race variable to determine whether race provides any significant effects in the prediction of recidivism while on bail.

Acute Dynamic Variables

Continuing to build from the risk assessment/recidivism literature and within the confines of our data source, the following variables were utilized to represent acute dynamic predictors: *Employment, Education, Drug Abuse, Alcohol Abuse, Criminal Affiliation, and Criminogenic Attitude.* Rooted in social control theory, the variables this study will utilize which portray *commitment* reside in an individual's *education* as well as *employment.* Obviously, individuals engaged in employment and/or who have acquired an education have more to lose by engaging in criminal activity than those individuals for whom these commitment bonds are absent. Education is measured simply by the number of years an individual attended a school or post-secondary institution and utilizes 12 years to represent graduation form high school; 14 years for college and/or trade school; 16 years for university; and 18-20 years for graduate/post graduate schooling. Although the employment variable could have been strengthened to incorporate some form of "job satisfaction scale", the limitations of the data set did not allow for this to be measured. However, the variable of employment in the study uses the following categories: (1) unemployed; (2) employed.

Through a combination of factors as well as direct clinical assessment the variable Criminogenic Attitude (anti-social vs. positive social attitude) was developed to specifically measure the *belief* component of Hirschi's social bonds. Information for the categories of anti-social and positive social attitudes were collected by the Forensic Assessment & Community Services (FACS) through various sources including the attitudinal domain of the Case Needs Identification and Analysis (CNIA) which is part of the Offender Intake Assessment (OIA)[4].

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[4] In 1990, the Correctional Strategy incorporated multi-method and multi-predictor assessment techniques and systematic reassessments into the rehabilitation regime. The Strategy established, among other things, the primacy of offenders' criminogenic needs in directing offender programming to ensure maximal post-release adjustment. In 1994, the Offender Intake Assessment (OIA) process was implemented across the Correctional Service of Canada. This process yields a comprehensive and systematic evaluation of each offender on admission to federal custody. Moreover, the OIA provides a baseline evaluation for routine reassessments during rehabilitation, and directs treatment and services during incarceration.

Criminogenic attitude is measured as either (1) pro-social or (2) anti-social attitude.

Although Hirschi did not specifically address alcohol and drug abuse in his social bond's theory, these variables were included because of the plethora of evidence linking these measures to increased criminal activity. Studies (Chasnoff, 1988) which focus on the effects of substance abuse on criminal activity have found that not only can drug and alcohol abuse impede an individual from socially accepted goals, but they may introduce individuals to a deviant subculture which can increase their involvement in criminal activity. This study incorporates an *abuse* (alcohol and drug) variable in an attempt to duplicate much of the past research in which substance abuse provides a meaningful risk assessment tool in predicting recidivism. The substance abuse variable is measured by (1) none, (2) social, (3) abusive, and (4) dependent and is self reported by the individual. For the purpose of this study substance abuse is defined by FACS as a maladaptive pattern of alcohol and/or other drug use resulting in recurrent and significant negative consequences such as family, vocational or legal problems. Dependence is defined as an increasing need, or tolerance, for the substance. Once a person becomes dependent on a substance, they will experience physical and/or psychological discomfort when cutting back or stopping the drug.

Stable Dynamic Variables

Utilizing Reckless' (1956, 1961, & 1967) work on internal controls and Zamble and Quinsey's (1988, 1997) work on coping and relapse theory, this thesis incorporates psychological variables such as *Personal Distress, Global Assessment of Functioning Scale (GAF),* and *Global Criminal Assessment of Functioning in Non-Criminal Society Scale (GAF-C).* These variables measure individual functioning and will be utilized as measures of internal control or psychological functioning.

The personal distress variable measures individual functioning by way of psychological classification. The categories for personal distress was collected from clinical diagnosis performed through various psychological assessments

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(including The Diagnostic and Statistical Manual IV (DSM-IV) and are kept on file at FACS. The personal distress categories are as follows: (1) none); (2) anxiety; (3) depression; and (4) psychiatric symptomatology (i.e. schizophrenia). The personal distress predictor was collected in an attempt to duplicate the Case Needs Identification and Analysis (CNIA) of the Correctional Service of Canada's risk and needs assessment protocol. The CNIA is a broad grouping of criminogenic needs that are believed to predict recidivism. The CNIA indicators include a large number of items that attempt to assess cognitive deficiencies such as weak problem-solving skills and rigid thinking, behavioral problems such as impulsiveness and a tendency to take risks, and other personal characteristics such as neuroticism and mental disorder (Zamble and Porporino, 1988).

As mentioned earlier, the GAF and GAF-C measure a hypothetical continuum of mental health/illness in which one plots the psychological, social, and occupational functioning between a scale of 0 and 100 (see appendix A and B).

Subjects

The subjects consisted of the total population (N=160) of individuals referred by the police or courts to the Forensic Assessment & Community Services: A service of Alberta Hospital Edmonton, Psychiatric Treatment Centre for the time period of 1996. The year 1996 was chosen because it was the most current year that could be utilized which would provide complete C.J.I.S. information on re-offending while on bail. The files contained only 21 females, so they were excluded from our analysis (N=139). F.A.C.S. is a governmental community service in which assessment referrals are made through the local police service (Edmonton Police Service), the federal police service (Royal Canadian Mounted Police), the courts, and other surrounding government agencies. This thesis utilized only individuals that were referred by police services and the courts since the premise behind this study was criminal activity.

Individuals are assessed by F.A.C.S. when they are "green flagged" by local police services and/or ordered by the courts to aid in the judicial process. When individuals are "green flagged" by police, the process is purely

discretionary and generally an outcome of the individual demonstrating peculiar behavior or behaviors. If the person is "green flagged", he or she is detained, at which time a charge may or may not be laid, until F.A.C.S. can perform an initial assessment (generally 1 to 24 hours). After the initial assessment, individuals are either categorized as "further assessment required" or "no further assessment required". If an individual does not require any further assessment, F.A.C.S. does not keep records or files on that individual. If an individual does require further assessment, F.A.C.S. creates and maintains a file on that individual including all internal assessments, external assessments, pre-sentence reports, probation reports, personal demographics, and all other available government sources of information. These files consisting of assessments and records are the primary source of data for this study. Once an assessment and/or diagnosis is made, individual treatment is not mandatory unless ordered by the courts. If an assessment for the individual is ordered through the courts the same process is implemented.

The literature on recidivism has been criticized in the past for providing ambiguous and incomplete specifications of the definition of "recidivism" (Boudouris, 1984:42). In response to such criticism, it is important to provide methodological specificity for two interrelated components; the "act" and the "time of occurrence". The "act" of recidivism is synonymous with the definitions of success and failure that the researcher specifies. It refers to what part of the criminal justice system a researcher uses to define recidivism (i.e., arrest, parole revocation, conviction, prison) (Maltz, 1984: 60-65). Due to the limitations of C.J.I.S. and C.A.P.S., and for the purposes of our study, recidivism will be defined as the subsequent arrest of an individual released from custody on bail, rather than a conviction or return to prison (or other criteria) as some other studies have utilized. The argument for using an arrest as a measure of recidivism, is that this event is the closest to the actual criminal behavior and has only been minimally influenced by law enforcement. Conviction may depend on a multitude of factors including the judge, jury, evidence, prosecutorial discretion, the quality of the defendant's legal counsel, and may or may not be influenced by the defendant's income and status. An arrest, while influenced by a peace officer's discretion to arrest or not arrest, is not likely to be made unless there is a

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strong likelihood that the arrested suspect has engaged in some misconduct. Although this study has chosen arrest as the defining concept of recidivism, it should be noted that we are aware of the argument that choosing arrest is violating the presumption of innocence principle and the due process requirements of our Charter of Rights.

Our definition of recidivism concerns only new charges by the police. By definition, this thesis is not (precisely) concerned with whether individuals have offended (presumed innocent) but with whether they appear to have offended. This thesis defines recidivism on the basis of "fresh contact" with the police rather than with the offending behavior itself. On a more aggressive level, one might infer that the presumption of innocence concerns judicial fact which may be said to be linked to a particular "construction of the truth" and not whether a person did in fact (by common sense criteria) commit an act.

Less attention has been given in the literature to the importance of controlling for the length of time of the follow-up period. When no follow-up time has been specified there is a danger in comparing groups of offenders over varying periods of time. Similar to findings in numerous studies (Boudouris, 1984; Bonta, Pang, and Wallace-Capretta, 1995; Roth, 1994), the longer the follow-up period, the greater the probability of a person being re-arrested and included among recidivists. This study utilizes bail length as its duration limits. Although the bail length exposes our sample to varying lengths of time, this exposure is assumed to be minimal as compared to not assigning any length of time. Although this study violates time standardization between the subjects, bail length had to be adopted in order to operationalize the finding to judicial bail decisions. The rationale for utilizing the bail period as the time perimeter was adopted because of two considerations: firstly, the bail event is the closest judicial process to the actual criminal event and has been less influenced by law enforcement than the combined processes of the criminal justice system. Secondly, it allows us to operationalize prediction and risk assessment results within a particular segment of the criminal justice process, hence showing the strengths of risk assessments in judicial bail decisions.

Sampling

As the population used in this study was a comprehensive list of all individuals assessed by F.A.C.S. in 1996, no sampling procedures were employed. With the exception of 31 cases excluded from the study due to incomplete or omitted data, 21 cases excluded because bail was not granted, and 36 cases excluded because of repeat subjects (duplicate files under different names or aliases), the population consisted of all individuals referred by police and courts to F.A.C.S. and requiring further assessment from January 1, 1996 to December 31, 1996.

Procedure

Prior to the onset of data collection, ethical approval was obtained from the Director of F.A.C.S. and the University of Alberta Research Ethics Committee.

As noted, the subjects were selected from a one year period between January 1, 1996 and December 31, 1996. Two hundred and forty-eight individuals were assessed by F.A.C.S. during that time period. All individuals included in the study were required to meet three criteria: the completion of information required to measure static and Acute Dynamic factors[5]; bail had to be granted; and consistency between sources of information with regards to personal demographics such as name, age, and F.A.C.S. identification number to prevent misrepresentation. Thirty-one cases were excluded from the study due to the omission of either one or another of the criteria, twenty-one cases because bail was not granted, and thirty-six cases were excluded due to repeat assessments within the 1996 time period. Of the one hundred and sixty individuals left, the small sample of females (N=21) required this analysis to further omit these cases due to their small representation.

After the sample was narrowed and chosen (N=139), information on individual predictors was collected and numerically coded for data analysis.

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[5] Subjects with missing values of the GAF and GAF-C variable were still included within this study since these variables were deemed exploratory in nature.

F.A.C.S. identification numbers were originally recorded to control for repeat assessments of individuals, but were deleted upon completion of data collection to ensure confidentiality and to fulfill the necessary agency and university ethical requirements. Recidivism data was then collected for each individual using the C.J.I.S. data base which allowed this study to measure re-arrest while on bail. Recidivism was also numerically coded and the names deleted to ensure confidentiality before analysis.

Data Analysis

Data were analyzed in four stages. First descriptive statistics were observed for each of the 17 independent variables and the dependent variable, recidivism. The frequencies and means were collected for two sub-samples: those who recidivated, and those who did not, and a comparison made.

Second, tests of association were calculated for each of the independent variables and the dependent variable. This was done in consideration of the relationship between the independent and dependent variables (multicollinearity and spurious relationships).

Thirdly, Bivariate Logistic Regression was employed to determine whether there was a significant effect for each independent variable on recidivism. Finally, Multivariate Logistic Regression was conducted to determine the simultaneous effect of those independent variables found to be statistically significant in the bivariate logistic regression analysis (p<.05). More specifically, logistic regression or logit analysis was performed to ascertain if the independent variables predicted recidivism for psychologically assessed bailed offenders included within this study

METHODOLOGICAL LIMITATIONS

Although the use of secondary data makes it possible to by-pass time consuming and costly steps in the research process, there are weaknesses inherent in using secondary analysis. The methodological limitations of this study have been described in three categories: limitations of the variables,

limitations of measuring recidivism, and limitations of the study's sample and design.

Limitations of the Variables

A major weakness in using secondary data within this study is that the existing information, from which data for most of the independent variables were collected, was not originally collected/designed to answer this study's research questions. Most of the information collected in the F.A.C.S. database was gathered for clinical and/or assessment reasons and was not designed for research purposes, specifically risk assessment research. Secondly, from a methodological standpoint, the information collected from F.A.C.S. was gathered prior to the onset of this study and no efforts were made to establish the validity and/or reliability of the information. It is difficult to assess the extent of measurement error.

With regards to the static predictors, excluding family conflict, most of the variables could be collected from arrest and governmental records. However, the categorical variable of family conflict was a self-disclosed answer to an open-ended question. Although the responses easily fall within the categorical restrictions of this study, there were no structures in place to ensure reliability and/or validity in the answers.

Similar to family conflict, the acute dynamic factors were self-reported and therefore lacked any methodology to ensure reliability or validity. Although the self reported variables of drug and alcohol abuse were utilized within this study, many critics including Chasnoff (1988) argue extreme caution in the validity of drug and alcohol measures. Chasnoff (1988) argues that many individuals misrepresent or "downplay" drug and alcohol use because of the negative social stigma associated with its use. Further, data collected from justice sources can contain severe misrepresentations because of the individual's unwillingness to disclose illegal behaviors such as drug use. In opposition, some individuals may use drug and alcohol abuse within an excusing role thereby leading to over-reporting. With this in mind, the only procedure this thesis could implement to develop a valid measure of alcohol and drug use was through verification from

different sources (medical reports, interviews, probation reports, etc.). Since most of the records were self-reported by the individual, there was a large degree of consistency between the sources.

Within the classification of acute dynamic factors the variable of criminogenic mood is a subjective classification done by various professionals within the assessment process. Despite criticism surrounding the use of subjective clinical assessments because of their supposed unreliability (see chapter I), this thesis regards the collection of professional judgments as a legally valid form of assessment which contain similar reliability issues to most psychological/social studies.

With regards to stable dynamic factors the variable of abuse (sexual, physical, and verbal) is self-reported and represents the same stigma, stereotypes, and difficulties associated with alcohol and drug abuse. Within the limitations of our data there was no way to ensure the reliability and/or validity of the abuse variable and therefore it was used in its self-reported form. Verification through various sources yielded consistent results for some of the subjects, but this could not be performed for the entire sample. Personal Distress is a clinical diagnosis made by professionals and therefore is regarded as a reliable subjective form of assessment. The GAF and GAF-C are a new classification scale designed by FACS and have not yet been tested for reliability in measuring an individual's level of functioning.

Limitations of Measuring Recidivism

Recidivism was operationalized as the subsequent arrest of an individual, rather than a conviction or return to prison (or other criteria) as some other studies have utilized. Recall that the argument for using arrest as a measure of recidivism is that this event is the closest to the actual criminal behavior and has only been minimally influenced by law enforcement rather than the combined process of the criminal justice system. Although the arrest procedure contains minimal influence, it has several methodological limitations. Firstly, recidivism data was collected from C.J.I.S., which contains information regarding an individual's interaction with the Canadian Justice System (i.e. arrest, bail, court

hearings, judgments, and sentencing). Although C.J.I.S. is one of the most comprehensive databases in Canada, its mandate is not for research purposes and the information can be misrepresented, contradictory, and inaccurate. Some of the problems associated with C.J.I.S. are defined as:

1. Lack of documentation as to minor interactions with the law (i.e. offenses which are dealt with by a fine)
2. No record of offenses committed outside of Canada or minor offenses outside the jurisdiction of Alberta.
3. Poor ability to match same individuals with different offenses (i.e. name spelled incorrectly "John Smith, John F. Smith, Johnathan Smith, etc." as well as alias)
4. Data entry problems

With reference to recidivism while on bail, it was difficult to ascertain the exact length of bail granted to an individual, and if the bail conditions carried any stipulations that might prevent that individual from exposure to normal circumstances that may influence recidivism (i.e. hospitalization for assessment). Further, bail lengths vary depending on several factors, including lawyers' and judges' scheduling, court scheduling, severity of offense, etc. In measuring recidivism while on bail this study is essentially giving every subject a different time frame in which to recidivate. Most of the literature uses the time line of one year to measure the extent of recidivism; however, they are generally concerned with post-release or conditional release recidivism. This study also collected the variable of recidivism within one-year from original arrest to measure the disparity between a one-year time line and bail length. Of the 139 subjects in this study, 52.5% (73) recidivated while on bail, while 53.9% (75) recidivated within the standard one year time frame. By additionally measuring recidivism within the standard one-year time period we see that there only exists a 1.4% discrepancy between utilizing bail duration or the one-year time frame.

Additional limitations regarding the measure of recidivism were defined in both the quantity of re-offending and the severity of the offenses. With reference to the quantity of re-offending, it was difficult to categorize from C.J.I.S. the number of offenses an individual committed while on bail. Two factors were instrumental in this limitation. The first has to do with "stockpiling" criminal charges from police. When an individual commits a crime it is not uncommon for

police to lay all related charges surrounding the crime. This aids in both securing a conviction and allowing "plea bargaining" to occur between the Crown and defense. Secondly, if an individual did commit a subsequent offense while on bail, he/she may be detained for that offense, thus limiting their opportunity to commit further offenses.

With regards to severity of offense, police "stockpiling" factors in again, making it difficult to distinguish which offenses alerted police presence and which offenses are related charges. Similarly, with the relatively small number of cases (N=139) coupled with the large diversity of offenses, the creation of a valid offense severity scale would have provided little additional information to this study. Although the use of a single arrest to measure recidivism is relatively simplistic and perhaps not a completely reliable measure of its extent, the time involved in accessing individual case files and individual offense particulars is beyond the scope of this study.

Limitations of the Study's Sample and Design

Since this study uses a population of males (N=139) assessed while on bail by F.A.C.S. during 1996, the findings from this research may be generalized only to those males included in the sample. Without the use of random sampling or a comparison/control group to control for extraneous variables, the findings of the study are limited to the sample of males who were assessed for mental illness in this study. Similarly, the study utilized a binary measure of recidivism which did not take into account the degree or severity of recidivism which may result in an invalid measure of true recidivism. Given the limitations of this study, caution is warranted when making inferences and generalizations based on the findings from this study.

ANALYSIS

Chapter V

DESCRIPTIVES

We first turn our attention to the frequency distribution for the recidivist sample. The full significance of these results can only be appreciated if the data are seen in the context of base rates, so the next section compares recidivists with the base rate group of non-recidivists.

Recidivists vs. Non-recidivists

Examination of measures of static predictors (Table 5.1) shows about what one would initially expect from a group of individuals involved in repeat criminal behavior. The mean age of recidivists in our sample is 36 years of age with approximately 80% of the sample being Caucasian. Similarly, 68% are single, 70% come from broken families, 67% of recidivists have no children, and the average prior conviction rate was 4.97 offenses. With reference to family conflict, over 56% had some form of conflict within their family situation, with 26% having violent conflicts.

However, upon comparison with our recidivist sample, the non-recidivists have a comparable demographic make-up (Table 5.1) with an average age 34 years and 79% Caucasian. Also similar to the recidivists 67% of the sample are single, 67% came from broken families; however, only 58% of non-recidivists have no children compared to the 67% of recidivists. Family conflict was also smaller with 52% of non-recidivists experiencing some form of family discord. With reference to static predictors one of the greatest differences was in prior convictions. The non-recidivists average 3.58 prior conviction compared to 4.97 priors for the recidivists.

TABLE 5.1 Comparison of static predictors

Variable	Categories	Recidivists			Non-recidivists		
		N	%	Mean	N	%	Mean
Age		73	100%	35.9	66	100%	33.65
Marital Status	(1) Single	50	68.4%		44	66.6%	
	(2) Married	12	16.4%		12	18.1%	
	(3) Divorce	11	15.2%		10	15.3%	
Race	(1) Caucasian	58	79.5%		52	78.8%	
	(2) Native	11	15.1%		7	10.6%	
	(3) Other	4	5.4%		7	10.6%	
Family Status	(1) Intact	22	30.1%		22	33.3%	
	(2) Broken	51	69.9%		44	66.6%	
Prior Convictions	(1) None	18	24.7%		17	25.8%	
	(2) 1-5	28	38.4%	4.97	29	43.9%	3.58
	(3) 6-10	11	15.1%		10	15.2%	
	(4) 11+	16	21.8%		4	6.0%	
	Missing				6	9.0%	
Family Conflict	(1) None	32	43.8%		32	48.5%	
	(2) Family Discord	10	13.7%		10	15.2%	
	(3) Significant Others	12	16.4%		8	12.1%	
	(4) Violence	19	26.1%		16	24.2%	
Children	None	49	67.1%		38	57.6%	
	1	8	10.9%		10	15.2%	
	2	7	9.6%	0.75	10	15.2%	0.91
	3	4	5.5%		4	6.0%	
	4	4	5.5%		3	4.5%	
	5	1	1.4%		1	1.5%	

With reference to acute dynamic predictors (Table 5.2), again the descriptives depict what one would expect from a sample of recidivists. With reference to drug and alcohol abuse, 45% of recidivists either had abusive or dependent drug use, whereas 60% had either abusive or dependent alcohol use. 77% of the recidivists were unemployed at the time of their offense and had an average education attainment level of only 10.66 years. Similar to Bonta and Hanson's (1995) work, criminal affiliation measured high with over 47% having some level of criminal affiliation and 67% of the sample diagnosed with an anti-social attitude.

We see in Table 5.2 some differences between the recidivists and non-recidivists in acute dynamic predictors. Drug and alcohol abuse/dependence is dramatically smaller in the non-recidivist sample with only 29% of individuals either having abusive or dependent drug use compared to 46% in the recidivist sample. Similarly, only 44% had either abusive or dependent alcohol use compared to 60% in the recidivist sample. This represents a 17-percentage point difference in abusive/dependent drug use compared to the recidivists, mostly due to abusive drug use, and a 16-percentage point difference in abusive/dependent alcohol use, mostly due to dependent alcohol use. Although drug and alcohol use showed a difference between the samples, most of the remaining predictors (unemployment – 74%, educational attainment – 10.2 years, criminal affiliation 45%) had similar results to the recidivist sample. But one dynamic predictor, anti-social attitude, measured slightly higher in the non-recidivist sample (71%) compared to 67% in the recidivist sample.

TABLE 5.2 Comparison of acute dynamic predictors

		Recidivists			Non-Recidivists		
Variable	Categories	N	%	Mean	N	%	Mean
Drug Use	(1) None	25	34.2%		24	36.4%	
	(2) Social	15	20.5%		23	34.8%	
	(3) Abusive	22	30.1%		11	16.7%	
	(4) Dependent	11	15.1%		8	12.1%	
Alcohol Use	(1) None	6	8.2%		9	13.6%	
	(2) Social	23	31.5%		28	42.4%	

	(3) Abusive	27	37.0%		21	31.8%	
	(4) Dependent	17	23.3%		8	12.1%	
Education		73		10.66	66		10.20
Criminal	(1) None	38	52.1%		36	54.5%	
Affiliation	(2) Friends	19	26.0%		15	22.7%	
	(3) Siblings	5	6.8%		7	10.6%	
	(4) Parents	1	1.4%		1	1.5%	
	(5) Combination	10	13.7%		7	10.6%	
Criminogenic Mood	(1) Positive	24	32.9%		19	28.8%	
	(2) Anti-social	49	67.1%		47	71.2%	
Employment	(1) Unemployed	56	76.7%		49	74.2%	
	(2) Employed	17	23.3%		17	25.8%	

Lastly, the stable dynamic predictors (Table 5.3) for our sample yielded the following measures. The mean value for the GAF (0-100) score was 59.53[6], while the GAF-C (0-100) was 56.04[7]. Similarly, 27% of the samples experienced some form of abuse (physical or sexual) while growing-up, with 12% experiencing both. With regards to personal distress, 21% experienced none, 22% experience mild forms of anxiety, 32% experience some form of depression, and 26% experience major symptoms such as paranoia and or schizophrenia.

With reference to stable dynamic predictors, again we see similarities between the samples with an average GAF score of 60.47 and a average GAF-C score of 54.12 for the non-recidivist. Although 33% of non-recidivists (compared to 27% of recidivists) experienced some form of abuse (physical or sexual) while growing-up, only 9% experienced both, therefore making the abuse predictor relatively stable across samples. With regards to personal distress, 26% experienced none, 26% experience mild forms of anxiety, 21% experience some

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[6] Moderate Symptoms (i.e. flat affect and circumstantial speech, occasional panic attacks) or moderate difficulty in social, occupational, or school functioning (i.e. few friends, conflicts with peers or co-workers).

[7] Moderate Criminal Activity (theft within the household, probation in the past year, use of aggressive language to control another person. Has thrown something at others and missed many times. Has pushed, shoved, grabbed, or slapped another many times with minimal injury. Has hit with a fist or kicked or bit a few times. Has hit or tried to hit another with a weapon once. More than one impaired driving charge or has driven impaired many times. Exposure of genitals).

form of depression, and 27% experience major symptoms such as paranoia and or schizophrenia. Comparing both samples the non-recidivists are 5.3% more likely to not have any psychological symptomology whereas the recidivist sample is 10.3% more likely to have depression.

TABLE 5.3 Comparison of stable dynamic predictors

Variable	Categories	Recidivists			Non-recidivists		
		N	%	Mean	N	%	Mean
GAF		51		59.53	49		60.47
GAF-C		51		56.04	49		54.12
Abuse	(1) None	44	60.3%		38	57.6%	
	(2) Physical	14	19.2%		16	24.2%	
	(3) Sexual	6	8.2%		6	9.1%	
	(4) Combination	9	12.3%		6	9.1%	
Personal Distress	(1) None	15	20.5%		17	25.8%	
	(2) Anxiety	16	21.9%		17	25.8%	
	(3) Depression	23	31.5%		14	21.2%	
	(4) Psychological Symtomology	19	26.0%		18	27.2%	

At this point this thesis was preparing to give a narrative profile of a typical recidivist as in much of the literature before this study. However, little difference is observed from the descriptives between the recidivist sample and the non-recidivist sample. With the exception of number of children, prior convictions, alcohol abuse, and drug abuse, the predictors have similar frequencies between the samples. As we can see from the comparisons, 10% more recidivists in our sample have no children; as well, they average 1.39 more prior convictions than the non-recidivists. The larger number of prior convictions was expected, since many studies, including Bonta (1997), view past conviction as the strongest predictor of recidivism. With reference to alcohol and drug abuse/dependence, abusive drug use had the largest difference with the recidivist sample being 13.4% higher. Alcohol dependence was also higher in the recidivist sample by 11.2%. Again this is not surprising; since we are measuring the short time frame

of bail, one may expect predictors with short-term impacts to have a larger influence. With reference to the stable dynamic predictors the only noteworthy difference was within the predictor of personal distress which found the recidivist sample to be 10.3% higher with assessed cases of depression. In conclusion, although there were a few distinct differences between the two samples, the majority of predictors had similar results for recidivists and non-recidivists.

CORRELATIONS

The next step in our analysis was to obtain a correlation matrix of all the independent variables and the dependent variable of recidivism. Correlations were performed for three reasons: to check for association, multicollinearity, and spurious relationships. Multicollinearity refers to the condition where the explanatory variables "overlap" considerably. When multicollinearity exists, explanatory variables may be so strongly correlated with each other that they are redundant, that is, in the sense that they can be predicted very well using the other. If we regress an explanatory variable on another and we get an R^2 value close to 1, this suggests that both may not be needed in the model, once the other(s) is present (Agresti & Finlay, 1997).

An association between two variables (i.e. 1 predictor and dependent variable) is said to be spurious if both variables are dependent on another predictor, and their association disappears when it is controlled. Such an association is an effect of the relationship of those variables to the control variable, rather than indicating a causal connection. No association exists between them in the partial tables that hold the control variable constant and thus remove its effect (Agresti & Finlay, 1997).

Within this study, correlations and partial correlations were performed using pearson correlations for the ratio and interval variables and contingency coefficient for the nominal variables.

Ratio and Interval Predictors

Using Pearson correlations for the ratio and interval predictors two significant relationships existed with the dependent variable of recidivism (table 5.4). The two significant relationships with recidivism were age and individual scores on the GAF-C scale. There is a weak negative correlation (-0.149) between age and recidivism indicating that as age increases recidivism decreases. There is also a weak negative correlation between individual scores on the GAF-C scale and recidivism (-.181) indicating that as individual functioning increases recidivism decreases. Both findings support much of the prediction literature as well as social control theory. With reference to age it is well documented that younger individuals are more likely than older individuals to commit subsequent crimes. Older individuals are also more likely to have built a larger network of social controls therefore making them less likely to engage in criminal behavior. Similarly, individuals who have a greater level of psychological, social, and occupational functioning are likely to have stronger social controls and therefore be less likely to recidivate.

TABLE 5.4 Pearson Correlations

Pearson	Recidivism
Age	-0.149 P=0.079
Educ.	-0.069 P=0.421
Child.	.056 P=.513
Gaf.	.043 P=0.673
GafC.	-.181 P=0.071
Prior	-.138 P=0.105

Nominal Variables

With reference to the remaining eleven nominal variables, contingency coefficients were performed (Table 5.5) which produced no significant correlations.

TABLE 5.5 – Contingency Coefficients

	Recidivism
Race	0.112 P=.625
Family Status	0.157 P=.175
Alcohol	0.195 P=.139
Drug	0.117 P=.586
Abuse	0.115 P=.394
Employ	0.101 P=.487
Personal Distress	0.130 P=.493
Crimin. Mood	0.025 P=.769
Criminal Affliation	0.044 P=.992
Marital Status	.117 P=.379
Family Conflict	0.212 P=.367

MULTIVARIATE ANALYSIS

Individual examination of the variables using frequency and percentage distributions as well as correlations provided preliminary ideas of which variables may have predictive qualities in determining recidivism. Multivariate statistical analysis was required to model the ability of multiple independent variables to predict recidivism. Logistic regression was the selected analytical method as it evaluates the simultaneous impact of a set of predictors' variables on a dichotomous dependent variable.

Logistic regression determines the probability of one event relative to another possible event represented by the dependent variable. More specifically, it transforms the probability of an event occurring into its odds or simply stated, into a ratio of one event's probability relative to the probability of a second event (Agresti & Finlay, 1997). The goal of logistic regression analysis in this particular study was to determine the best combination of independent variables that most accurately estimated the probability of an individual re-offending while on bail relative to the probability of their not re-offending.

Logistic regression was performed in two stages: bivariate and multivariate logistic regression analysis. During the bivariate analysis stage, a separate logistic regression analysis was conducted for each of the 17 independent variables and recidivism. Before bivariate logistic regression could be perform each categorical variable had to be re-coded into a dummy variable where 1 would represent the behavior or characteristic of interest and 0 representing the other categories in the variable. The ratio and interval variables were left in their original numerical values for the logistic model. It must be noted that in using logistic regression one runs the risk of making inferences from the collapsed bivariate dummy variables that may not be accurate. However, given the limited nature of our dependent variable recidivism, logistic regression is an appropriate statistical application. The following table (table 5.6) shows the re-codes performed for the logistic regression as well as the findings from the bivariate regression:

TABLE 5.6 Bivariate Logistic Regression

Variable	Categories/recoded Categories	B	P	Dummy Recodes
Age	0-100	-.029	0.081	Ratio no dummy
Marital Status	Single	-0.434	0.234	Single = 1, all other = 0
	Married	0.599	0.188	married = 1, all other = 0
	Divorce	0.075	0.875	divorce = 1, all other = 0
Race	Caucasian	-0.464	0.270	Caucasian = 1, all other = 0
	Native	0.182	0.718	Native = 1, all other = 0
	Other	0.779	0.232	Other = 1, all other = 0
Family Status	Intact	0.035	0.925	Broken = 1, Intact = 0
	Broken			
Prior Convictions	0	-0.488	0.224	0 = 1, all other = 0
	1-5	0.273	0.429	1-5 = 1, all other = 0
	6-10	0.610	0.131	6-10 = 1, all other = 0
	11+	-1.140	0.94	11+ = 1, all other = 0
Family Conflict	None	0.062	0.856	None = 1, all other = 0
	Family Discord	0.420	0.387	Family Discord = 1, all other = 0
	Significant Others	-0.288	0.559	Significant Others = 1, all other = 0
	Violence	-0.172	0.662	Violence = 1, all other = 0

Children	None	-0.378	0.283	None = 1, Children = 0
	Children			
Drug Use	None	0.056	0.876	None = 1, all other = 0
	Social	0.219	0.566	Social = 1, all other = 0
	Abusive	0.129	0.747	Abusive = 1, all other = 0
	Dependent	-0.706	0.180	Dependent = 1, all other = 0
Alcohol Use	None	0.632	0.257	None = 1, all other = 0
	Social	-0.241	0.495	Social = 1, all other = 0
	Abusive	0.500	0.164	Abusive = 1, all other = 0
	Dependent	-0.869	0.074	Dependent = 1, all other = 0
Education	0-20 years	-0.055	0.419	Ratio no dummy
Criminal Affiliation	None	0.008	0.980	Crim Affi. = 1, all others = 0
	Friends, Siblings, Parents, Other			
Criminogenic Mood	Positive	0.108	0.769	Anti-social = 1, Positive = 0
	Anti-social			
Employment	Unemployed	0.103	0.796	Unemployed = 1, Employed = 0
	Employed			
GAF	0-100	0.006	0.669	Ratio no dummy
GAF-C	0-100	-0.028	0.075	Ratio no dummy
Abuse	None	0.387	0.265	Abuse = 1, all others = 0
	Physical, Sexual, or both			
Personal Distress	None	-0.120	0.767	None = 1, all others = 0
	Anxiety	0.610	0.131	Anxiety = 1, all others = 0
	Depression	-0.154	0.690	Depression = 1, all others = 0
	Psychological Symtomology	-0.305	0.434	Psych. Symt. = 1, all others = 0

Although none of the variables measured in the bivariate logistic regression where found to be significant at conventional levels of acceptance (P<0.05, P<0.01), three variables were significant at a more aggressive level of acceptance (P<0.10). However, due caution must be taken when making conclusions based on a 0.10 level of significance since 10% may be attributed to chance. As indicated in Table 5.6, the three most significant predictors relating to recidivism are age (P=0.081), dependent alcohol use (P=0.074), and an

individual's level of functioning on the GAF-C scale (P=0.075). With reference to age we determine that the probability of recidivism decreases (-0.029) as individuals increase in age. In contradiction to the literature the probability of recidivism decreases (-0.869) for those individuals with dependent alcohol use. The GAF-C scores also produced significant results with the probability of recidivism decreasing (-0.028) as individual's level of functioning in a non-criminal society increases.

In the second stage of our analysis, multivariate logistic regression was performed to determine the net effect of each predictor on our dependent variable of recidivism while on bail. For the multivariate analysis the variables were simplified by re-coding each variable into one dummy variable with the 1 representing the behavior in which the literature claims to influence recidivism and 0 representing the other behaviors or characteristics within that variable. Similar to the bivariate analysis the ratio and interval variables were left in their original numerical values for the multivariate logistic model. Table 5.7 shows the results from the multivariate analysis as well as the re-codes that were performed.

TABLE 5.7 Multivariate logistic Regression

Variable	Categories/recoded Categories	B	P	Dummy Recodes
Age	0-100	-0.048	0.074	Ratio no dummy
Marital Status	Single	-0.741	0.477	Single = 1, married & Divorced = 0
	Married & Divorced			
Race	Native	0.366	0.693	Native = 1, all other = 0
	Other			
Family Status	Intact	-0.287	0.751	Broken = 1, Intact = 0
	Broken			
Prior Convictions	None	0.635	0.173	0 = 0, Prior Convictions = 1
	Prior Convictions			
Family Conflict	None	-0.290	0.475	None = 0, conflict = 1
	Conflict			
Children	None	-0.504	0.282	None = 1, Children = 0

	Children			
Drug Use	None & Social	-0.320	0.499	None & Social = 0, Abusive = 1
	Abusive & Dependent			
Alcohol Use	None & Social	-0.147	0.749	None & Social = 0, Abusive = 1
	Abusive & Dependent			
Education	0-20 years	0.401	0.840	Ratio no dummy
Criminal Affiliation	None	-0.338	0.460	Crim Affil. = 1, all others = 0
	Friends, Siblings, Parents, Other			
Criminogenic Mood	Positive	0.068	0.880	Anti-social = 1, Positive = 0
	Anti-social			
Employment	Unemployed	0.324	0.508	Unemployed = 1, Employed = 0
	Employed			
GAF	0-100	0.007	0.664	Ratio no dummy
GAF-C	0-100	0.034	0.085	Ratio no dummy
Abuse	None	0.248	0.548	Abuse = 1, all others = 0
	Physical, Sexual, or both			
Personal Distress	None	0.396	0.416	None = 0, Some form = 1
	Some form of Personal Distress			

As with the bivariate logistic regression none of the variables measured in the multivariate logistic regression where found to be significant at conventional levels of acceptance (P<0.05, P<0.01). Two variables were significant at a more aggressive level of acceptance (P<0.10), however, due caution must be taken again when making conclusions based on a 0.10 level of significance. Based on the results (table 5.7), the two variables of age and individual level of functioning in a non-criminal society scale (GAF-C) showed significant results (P<0.1) in predicting recidivism however alcohol dependency did not retain its significance. The GAF-C scores produced significant results (P=0.085) with the probability of recidivism decreasing (-0.034) as level of functioning in a non-criminal society increases. Also similar to the bivariate analysis the age variable produced significant results (P=0.074) with the probability of recidivism decreasing (-0.048) as age increases.

Based on our analysis of predicting recidivism for individuals referred for psychological assessment while on bail, the results have been disappointing, to say the least. In summary, frequency and percentage distributions indicated that there was little difference between the recidivist sample and the non-recidivist sample. With the exception of children, prior convictions, alcohol abuse, and drug abuse, the predictors had similar frequencies within both samples. Secondly, tests of associations were performed which found two weak significant associations between age and recidivism and GAF-C score and recidivism. Age and recidivism had a weak negative correlation (-0.149) indicating that as age increases recidivism decreases. GAF-C scores and recidivism also had a weak negative correlation (-.181) indicating that as individual functioning increases recidivism decreases.

Bivariate and multivariate logistic regression were also performed with the most significant predictors in the bivariate analysis being age (P=0.081), dependent drug use (P=0.074), and individual GAF-C scores (P=0.075). Recall that the bivariate logistic analysis showed that the probability of recidivism decreases as an individual's age increases (-0.029) as well as for individuals with dependent alcohol use (-0.869), and individuals with increased GAF-C scores be (-0.028). Lastly, multivariate logistic regression was performed with the only two variables holding their significance being individual GAF-C scores (-0.034, P=0.085) and age (-0.048, P=0.074).

The findings on age and level of functioning in a non-criminal society (GAF-C) support most of the literature in that older individuals and individuals with a greater degree of functioning are less likely to recidivate. Dependent alcohol use, however, contradicts most of the literature in that dependent alcohol use actually decreases the probability of recidivism. Although one can only speculate on this finding, one likely possibility may reside in the actual offense for which these individuals were arrested. Since alcohol dependence can be a controlling factor in people's lives, crimes surrounding alcohol use may also be characteristic of these individuals. A possible explanation is that these individuals may have been arrested for alcohol related crime (drunk and disorderly) but are not true criminals and therefore less likely to recidivate. Although this study was unable to collect measures associated with individual

crimes, measuring this factor may have provided the needed information to answer why individuals with alcohol dependence have a decreased probability of recidivism.

Recall from chapter II that the two major research questions this thesis attempted to answer were as follows:

1. Do traditional risk assessment variables (static and acute dynamic) retain similar results when predicting recidivism while on bail for individuals referred for psychological assessment?

2. Do stable dynamic risk predictors have a greater significance than traditional predictors at predicting recidivism while on bail for individuals referred for psychological assessment?

It was hypothesized that the strongest predictors of recidivism while on bail for our population of individuals referred for psychological assessment would be alcohol and drug abuse, criminal affiliation, criminogenic mood, and prior convictions. However, beyond age, dependent alcohol use, and GAF-C scores, none of the remaining variables held any significance within our analysis. Although alcohol use was a significant predictor in our binary analysis, its inverse relationship contradicts both the literature and our hypothesis. With reference to the stable dynamic predictors, it was hypothesized that the GAF and GAF-C scores would be the strongest predictors based on coping and relapse theory (Zamble and Quinsey, 1997). Although the GAF scores were not significant in our model, the GAF-C scores did show some significance in both the correlations and logistic models. Since both the GAF and GAF-C scales have never been tested in previous research, more research into their reliability and design is warranted before reaching conclusions concerning its effect on recidivism.

Overall, the results from the analysis have been disappointing. The lack of significant predictors did not provide enough information to support our hypotheses, nor did they provide any concrete direction as to which variables may be the strongest predictors of recidivism for individuals referred for psychological assessment. Although this study did not provide any meaningful insight into the use of risk assessment, one must not jump to conclusions about theoretical interpretations and the use of predictors to measure risk of recidivism. On the surface it may seem that our results imply a free-will theory or the

classicists approach. However, the lack of results are more likely due to methodological, sampling, and population parameters rather then theoretical imperfections.

Since the outcome of our regression analysis only yielded a few significant findings, we can look at the descriptives for some insights into our lack of results. Recall that the descriptives showed very little difference between the recidivist and non-recidivist samples. This in itself shows that our population did not display any distinct patterns or traits that may contribute to recidivism while on bail. But if a plethora of recidivism research has reported distinct patterns and predictors in the past, why did these not exist within our study? I can only speculate at this point; however, perhaps the lack of significant differences between the recidivists and non-recidivists may result from the exclusion of offense classification and therefore an overestimation in our dependent variable of recidivism.

C.J.I.S. (Criminal Justice Information System) documents and codes a person's offense after an arrest and re-codes that offense after a court hearing to reflect the outcome of their proceeding. Because of factors such as plea-bargaining, charter violations, offender history, and criminal justice discretion, it is difficult to fully ascertain from C.J.I.S. what an individual is charged with, and tried for, in a court of law. Because of the contradictory information relating to offense classification for individuals within this study, the coding of offense classification was not collected for our population. By excluding offense classification from our analysis we may have created a loose definition of recidivism, thereby overestimating its probability. Basically, by classifying recidivism as simply an arrest, we may be grouping individuals with minor crimes (parole violations), infrequent crimes (drunk and disorderly), violent criminals, and habitual criminals as recidivists.

I am not convinced that this loose definition (arrest) properly measures a true recidivist, or at least a recidivist that risk predictors are designed to measure. Yes, it is true that a person that is re-arrested is by definition a recidivist. Similarly it is also true that predictors such as alcohol dependence may have contributed to that re-arrest even if the offense is minor like a drunk and disorderly charge. However, the question becomes, is this the type of recidivism

that risk assessment is designed to measure? As mentioned earlier, the findings on alcohol dependence may be a result of individuals being arrested for minor, alcohol related crimes. If this is the case, their crimes are simply a by-product of their alcohol use rather than factors and social controls that influence and perpetuate repeat criminal behavior. For risk assessment to succeed predictors must be measured and tested against true recidivism not just minor criminal behavior. The outcome of using arrest as a recidivism parameter is that this study probably included a higher than average sample of recidivists, therefore overestimating repeat criminal behavior and underestimating the significance of predictors that may truly influence recidivism.

A three-year follow-up study of federal offenders released in Canada between 1992-93, revealed that, of the 6,419 offenders released, about two fifths (40%) were convicted of a new criminal offense and nearly one fifth (20%) were convicted for violent crimes. Violent offenders were no more likely than non-violent offenders to return to federal custody with a new offense. Violent offenders, however, were significantly more likely than non-violent offenders to return with a new violent offense. (Motiuk, Belcourt, and Nafekh, 1997). If we compare Motiuk, Belcourt, and Nafekh's (1997) three-year follow-up study to the results in this study, we see that our recidivism rate is 12.5% higher (40% compared to 52.5%) and is only based on the limited time frame of bail length. By comparing our recidivism rate to Motiuk, Belcourt, and Nafekh's results we can see that an over-representation of recidivists may exist within our study therefore impacting the results of our analysis.

Given the present research, the answer to which factors contribute to recidivism while on bail for individuals referred for psychological assessment is inconclusive. If one assumes that individuals with mental illness recidivate more based on their psychological condition, or that their psychological and social environments differ from that of the general populations, then one's assumptions may be inaccurate. All we really do know at this time, based on this study and the risk assessment research, is that certain factors have a greater probability of predicting recidivism than others. What this study did reveal is that recidivism involves a complex relationship of both psychological and social factors, which

ultimately change from place to place, time to time, and individual to individual and these relationships can be very difficult to measure and quantify.

Although this study's results were inconclusive, many advancements in risk assessment research have led to a general consensus about certain core assumptions. These assumptions are as follows: risk assessment is a powerful and valuable tool if performed properly; dynamic variables, although difficult to measure, are irreplaceable; and more research is needed to measure the effects of certain variables on recidivism for differing populations of individuals. Although there is much advancement in risk prediction research, the findings from our study suggest that there may exist methodological, sampling, and measurement problems associated with risk assessment research. However, the situation is not hopeless. Future research in needed to clarify the knowledge base in this area and the ways policy and practice initiatives might aid in understanding the relationship between mental illness and criminality. The next chapter discusses in detail some of the limitations of risk assessment research, as well as the policy and practical implication for future risk assessment research.

CHAPTER VI
Limitations of Risk Assessment

The prediction of recidivism has received extensive study and research over the years. Enough work has been completed to establish a general consensus within the justice research community about the classes of variables that are valid predictors of recidivism and the degree to which they are related to the criterion behaviors of interest. Regrettably, however, there still exists a great gap between the empirical predictive literature and the practical needs of justice professionals, such as aid in designing interventions, or selecting inmates for programs, or assistance in offender release policies (Bonta, 1997). In response to this empirical gap, as well as the absence of results within our analysis, this chapter focuses on observable limitations within our study, as well as potential limitations associated with recidivism research for mentally ill people. This chapter is divided into four sections: Methodological Limitations; Theoretical Limitations; and Mental Illness Limitations. The last section concludes by discussing the limitations of using risk assessment and its practical significance for prediction of criminal behavior.

METHODOLOGICAL LIMITATIONS

Despite the fundamental character of recidivism as a measure of justice system effectiveness, and its growing widespread use in all aspects of crime control, there are methodological misconceptions regarding its use and measurement. Although misconceptions can enter in anywhere during the entire process of measuring recidivism, from defining recidivism to valid statistical applications to measuring its extent, I have chosen to concentrate my efforts on the most prominent issue related to this study. This issue arises from alternative definitions of recidivism based on the stage in the criminal justice process at which recidivism is measured. In the case of this study, the issue arises from the use of arrest as a measure of recidivism.

Recidivism Definitions

As mentioned early in this thesis, at nearly every processing stage within the criminal justice system, one of the possible alternative decisions is to divert the offender from further penetration into the system and to return him to society as a reformed law-abiding citizen. However, once back into society, the individual, for various reasons, may commit further crimes or what we have termed recidivism. Most recidivism research, including this study, is interested in the probability of this event occurring and/or not occurring. Estimating this probability, however, is made difficult by individuals' understandable reluctance to report that event. Instead, recidivism events are recorded only when the individual has been arrested, convicted, sentenced, institutionalized, or has been in some formal recorded contact with the criminal justice system. Criminology generally defines recidivism as a "falling back or relapse into prior criminal habits", especially after punishment. Police agencies usually measure recidivism as "re-arrest," while correctional agencies often view recidivism as a "return to prison".

Thus, because the probability of recidivism cannot be measured directly, one of these alternative definitions must be employed, which has resulted in some of the confusion associated with recidivism research. Whatever the choice, there are two types of errors: the type I error of commission involves the erroneous counting as recidivists those who are improperly charged with recidivism. Type II error of omission involves those who have in fact recidivated, but have not been identified as such (Blumstein and Larson, 1971). Therefore, the Type I error includes erroneous arrests, convictions, and sentences, while the Type II error consists of those whose crimes never came to the attention of the police, or who were not arrested for the crime. As an example, the Type II errors associated with the correctional definition of "re-imprisonment" include those who in fact where charged with committing a crime, but where the evidence was insufficient for conviction. The further into the criminal justice process one derives one's definition of recidivism, the more the likelihood that the Type II error will increases while the Type I error will decrease. Type I errors are assumed to

be greater in the early stages of the justice process because individuals are processed not on definite guilt but rather through discretion by the police and on the likelihood of guilt by the prosecutor (the Canadian courts will make the decision on guilt or innocence). Type II errors are assumed to be greater in the later stages of the justice process because of criminal circumstances (e.g. insufficient evidence, charter violations, superior legal representation) unrelated to the actual crime but which may result in legal innocence even though the individual committed the crime. Since this study utilized the arrest procedure as our measure of recidivism and because the arrest procedure is generally acknowledged to be the closest justice event to the actual behavior, there may exist a higher concentration of Type I errors in this study. By defining recidivism as an arrest, we are labeling an individual as a recidivist before that person has been found guilty of an offense, thereby increasing the chance of committing type I errors.

Although this study restricted recidivism to the arrest procedure, assuming it would create the least judicial biases of any of the recidivism definitions, our definition may have ultimately overestimated the probability of "repetition of crime" (Type I errors). One of the major disadvantages in utilizing the arrest as a measure of recidivism is that the researcher must decide if all arrests will be counted or if certain "minor" offenses will be excluded. Should an arrest for failure to pay a parking fine or child support be treated as recidivism? Should disorderly conduct or public intoxication? These and many more questions need to be addressed before one can start to measure recidivism using the arrest procedure. Since this study was exploratory in nature, all arrests were counted as a definition of recidivism, which may have resulted (as in the case of alcohol dependence) in not measuring true recidivism.

Although a certain amount of subjective discretion will be applied no matter what definition is exercised, none contain more than the arrest procedure. In utilizing the arrest as a measure of recidivism in this study, individuals may have been categorized as a recidivists within our sample, based on discretion by the officer to arrest. Furthermore, in both the criminology and corrections definition, recidivism occurs after the individual is found guilty, sentenced, and punished for their crimes. However, by utilizing the arrest procedure as our

definition of recidivism, we are essentially labeling and/or categorizing individuals as recidivists before they have been legally found guilty of a crime (presumption of innocence). This in itself places the methodological assertion of validity into question.

Furthermore, estimates of recidivism probabilities based on any single set of individual criminal records (i.e. C.J.I.S.) will tend to further underestimate their actual values regardless of the recidivism definition. This occurs because all criminal records are incomplete and, therefore, fail to record some of the recidivism that has become a matter of justice records elsewhere. As mentioned earlier, C.J.I.S. does not take into account crime committed outside of Canada or minor offenses outside the local jurisdiction of Alberta, nor do they provide adequate systems to cross validate individuals within the system.

Based on the findings from this study, recall that the descriptives from both the recidivist and non-recidivist sample yielded similar findings. If the utilization of arrest as a measure of recidivism caused type I errors, then the descriptives for both the recidivists and non-recidivists would have been misleading. This in itself could help explain why there was no distinct pattern between the two samples. If, as the literature states, there exists a distinct pattern of behaviors and characteristics for recidivists and non-recidivists and you count non-recidivists as recidivists, then those behaviors and characteristics become interchanged thereby diluting any distinct pattern that may have been present. Basically, the use of the arrest procedure coupled with the limited use of C.J.I.S. as the criminal offense source may have provided this study with an inconclusive estimation of the probability of recidivism, which may have resulted in an inaccurate description of a recidivist.

THEORETICAL LIMITATIONS

As mentioned numerous times within this thesis, previous empirical literature has dealt almost exclusively with static or "tombstone" predictors, such as age, offense history, length of institutionalization, etc. These static variables not only suffer from well documented methodological limitations but also theoretical limitations because they are empirically rather than theoretically

derived. Although this study attempted to further strengthen recidivism research through a better application of theory, limitations still exist on the use of control theory in predicting criminal behavior.

As indicated in chapter II, most risk assessment research simply focuses on the relationship between certain independent variables and recidivism. When recidivism is found to be related to variables like parental attachment and school commitment, some researchers have historically turned to Hirschi's control theory for theoretical support. Although social control theory provides some insight into the complex relationship between individual's bonds, or lack of bonds to society, and their subsequent freedom to deviate, there may exist some conceptual imperfections in applying social control theory to risk assessment research, and more specifically to this analysis.

Although Hirschi's social control theory provides an introduction into the relationship between social controls and an individual's risk of recidivism, the theory's empirical support falls short of complete explanation. Hirschi has been criticized in past literature (Blumstein & Larson, 1971; Waitrowski, Griswold, and Roberts, 1981) for not considering how his four elements might act simultaneously to affect the likelihood of delinquent behavior. This has led Hirschi to hypothesis the relationships rather than empirically analyzing them. Three issues arise from this shortcoming. Firstly, the extent to which the four elements of the bond represent empirically distinct components of socialization is unclear. Secondly, why are only four elements of bonds to society identified? Lastly, Hirschi places importance on educational and occupational aspirations as central to his theory, but he fails to incorporate constructs (family socioeconomic level, ability, influence, etc.) that research has deemed important in the development of these aspirations (Waitrowski, Griswold, and Roberts, 1981). This failure to incorporate constructs may have serious implications when attempting to categorize individuals with psychological impairments within the framework of Hirschi's four elements. Individuals with psychological impairments may have difficulties functioning in an educational and occupational environment, which can have direct ramifications on socioeconomic level and abilities. To standardize the social constructs for individuals with mental illness with those of

the general population may incorporate inferences and assumptions that unfairly define social bonds and the interpretation of these bonds for our population.

For example, within our analysis we find that in both the recidivist and non-recidivist sample the average educational attainment was between grade 10 and 11 and about 75% of both samples were unemployed. If social control theory is correct we should observe higher rates of unemployment and lower levels of education in the recidivist sample. I speculate that the reason we observe a similar distribution of predictors (especially the predictors of education and employment) within our analysis is not because they affect criminal behavior but because they are affected by mental illness. Regardless of who recidivates or not, if mental illness is a mediating factor, then both recidivists and non-recidivists will be equally low in attachment, commitment, involvement, and belief.

Hirschi places great importance on his four elements in contributing to a person's delinquency. At the core of his theory, these elements are interpreted as not only being important, but also having a general application to society. This is not to say that Hirschi intended social control to be a universal theory of delinquency; however, his definition of "satisfying universal human needs" implies that individuals strive to satisfy general needs through alternative means (i.e. delinquency). When observing individuals with mental instabilities three important questions must be asked: Do individuals with psychological impairments have the same general needs that Hirschi outlined? If these needs exist and they are not met, do individuals with mental illness see delinquency as an alternative means? And, do the bonds that Hirshi claims prevent or block delinquent impulses have the same preventative power for individuals with psychological impairments as they do with the general population? I hypothesize that individuals with psychological impairment face more internal control difficulties than lack of societal bonds, and if these social bonds do/don't exist, they may imply a different societal outcome than they would for the general population. Because of the psychological challenges within our sample, who is to say whether education and occupational aspirations, for example, are as important as they are to the general population? If they are, do individuals with mental illness internalize an absence of these bonds similarly to the general

population? If the internalization process of social bonds is different for individuals with psychological impairments, then one must question the validity of Hirschi's theory in explaining recidivism. This is not to say that just because an individual has psychological impairment, he/she does not become somewhat influenced through social bonds and expectations. It may just be a degree of interpretation as to the importance of social bonds rather than a general application, as Hirschi believes.

MENTAL ILLNESS LIMITATIONS

Research on mental illness and recidivism traditionally has been plagued by methodological problems. Previous studies have varied in sample size, diagnostic categories, follow-up period, demographic characteristics, outcome measures, comparison groups, and environmental factors (Mulvey et al., 1986). Due to these methodological limitations, it has been difficult to reach general conclusions or to even compare studies. This section deals exclusively with problems associated with the use of psychologically impaired individuals in measuring recidivism and/or criminal behavior in general.

Samples

The first problem encountered by previous literature is concentrated on the sample itself. Studies of crime that utilize samples of individuals with mental illness may form a biased subset because they can include psychological disabled individuals who may have a greater tendency to act out, therefore resulting in a greater chance at being arrested. Mulvey et al. (1986) reviewed several studies and concluded that "released psychiatric patients appear to be arrested more frequently than members of the general population and that these arrest rates have increased in recent years". Should Mulvey et al. findings be accurate, then the use of psychiatric patients as a study sample may overestimate the potential for recidivism.

This line of reasoning corresponds to many of the criticisms mentioned earlier in the methodological and theoretical limitations. If individuals with mental

illness have a greater frequency of being arrested for behaviors associated with mental illness, rather than criminal activities, then our study has ultimately overestimated the amount of recidivism, resulting in a biased recidivist sample. Recall that the descriptive analysis found similar comparisons between the recidivist and non-recidivist samples. Similar to the methodological limitations, if the recidivist sample is comprised of individuals who are arrested more frequently because of psychological outbursts and/or behaviors relating to their mental illness, then it becomes increasingly difficult to measure recidivism through the arrest procedure for a population of individuals with mental illness. This is not to say that individuals with mental illness cannot be recidivists, however, if we are going to use the arrest procedure as a measure of recidivism then it is imperative that we make sure we are measuring actual recidivism through the arrest data and not psychological outbursts resulting in arrest. If Mulvey et al's. (1986) study is accurate one would expect similarities between the recidivist and non-recidivist samples since inclusion in one or the other group may have more to do with chance or psychological functioning than actual recidivism.

Another issue relating to the use of mental illness as a sample or population parameter concentrates on the social make-up of these individuals. Recall the descriptive analysis from the previous chapter in that many of the social predictors did not differentiate between the recidivists and non-recidivists. Many of the social environments that were characteristic of our mental illness population may have little to do with individual choices and everything to do with mental illness. This is not to say that individuals with a psychological illness cannot make rationale choices or pursue socially legitimate goals; however, one must be aware of the impact that mental illness can have on an individual. Take, for instance, the example of education and employment; there already exists a well documented link between level of education, employment status and recidivism; however, if an individual's mental illness hampers the execution of one or both of these goals, then one would expect lower educational levels and higher unemployment regardless of recidivism.

Another problem in such samples concerns a focus on the general label of "mentally ill" and/or "psychologically impaired" individual, which ignores a number

of unique personalities, demographic, and environmental features that can have an impact on the individual's behavior. An observation by the author is that a number of studies on criminal behavior, including this one, have lumped together in one sample a rather heterogeneous group, termed mentally ill. Most divisions between diagnostic categories have been rather crude, for example comparing psychotics to non-psychotics. Without separately studying people with various psychiatric disorders, there are no controls established for different levels of functioning. This can result in an overrepresentation of individuals who are perhaps lower in functioning, less in control of their actions, and therefore more susceptible to arrest. This may lead to an overrepresentation of recidivism depending on the psychological symptomology attributed to the majority of the sample. For example, a number of studies of criminal behavior include individuals diagnosed with personality disorder; however, there is considerable disagreement about whether a personality disorder constitutes a mental illness per se. It is generally believed that an antisocial personality disorder, or sociopathy, is virtually untreatable, whereas a major mental disorder such as schizophrenia can be effectively managed with medication and supportive counseling. In addition, the assumption is often made that a person with a "disordered personality" is in a volitional state and thus less excusable. If a study includes antisocial personality disorders in its sample, it may well overestimate the recidivism of the group as a whole because sociopaths by definition are more likely to engage in violent or criminal acts (Hare & McPherson, 1984). With reference to this study, both the indicators of personal distress and anti-social personality were crude measures used for exploratory analysis and were not intended to imply any form of causation.

Definition and Measurement of Recidivism

Another mental illness issue encountered by previous literature as well as this study lies within the definitions and measurement of recidivism. Beyond the methodological limitation of using the arrest rates because of increased type I errors, another argument is that mentally ill people are arrested at a disproportionate rate, but not for reasons unrelated to their potential

dangerousness, thus perhaps giving an increased likelihood of arrest. Mentally disordered people may be less skillful at crime and thus caught more easily or may tend to plead guilty more readily, perhaps because they cannot afford legal representation or simply due to a factor of psychological confusion. Similarly, mentally ill individuals may have more arrests simply because of labeling by the police, and the willingness of the police to deal quickly with abnormal behavior (Monaham, 1988).

Another important aspect of studying recidivism concerns measurement of the rate of crime and how this impacts on an estimate of criminality. Most studies look at an overall crime rate and do not distinguish between prevalence and incidence, that is, whether all psychiatric patients commit the same number of crimes or whether a small group of individuals account for more of the arrests. Although concerns of measurement are also important when studying recidivism in the general population, they are of particular importance for mentally ill samples since certain diagnostic groupings may yield statistically more crime than other groupings. Although measurement of the rate of crime may have more impact on overestimating criminality than arrest rates, similar conclusions may be drawn about certain types of behaviors. If specific types of behavior or outbursts are common within certain diagnostic groupings, and these behaviors lead to an increased arrest rate, then a sample comprised of mentally disordered individuals may include an overrepresentation of arrested individuals.

In addition, arrest rates do not indicate the seriousness of the crime, a critical classification that this study was unable to collect. Previous studies, including this study, have tended to lump together all crime instead of breaking down offenses into various classifications (i.e. seriousness). Past research (Lamb, 1984) has suggested that the majority of mental patients commit only petty crime. However, distinguishing "serious" from "non-serious" can be a subjective process. For example, verbal attacks (which are common in mental patients) are generally not categorized as one of the more violent crimes; however, this behavior can cause serious emotional trauma to another, especially if it is not provoked.

One last point to consider about the definitions and measurement of recidivism for mentally ill people concerns the validity of these measures. Do

they reveal the intent of the person's action? Is the action involuntary because of psychosis, deliberately vicious, or simply a cry for help? These matters are difficult to resolve.

RISK ASSESSMENT LIMITATIONS

"The authority to detain a particular defendant to protect society is naturally premised on the idea that it is at least reasonably possible for the courts to make predictions regarding the possibility that particular defendants, if released, would act in ways that would endanger other individuals or the community in general" (Adair, 1993:74).

Over time, there has been a need for professionals to assess the level of dangerousness a certain individual poses to society. This may take the form of assessing an individual for his tendency to commit additional criminal acts, either now or in the future, or it may be assessing an inmate's suitability for release back into the community; that is, whether or not he will continue to pose a danger upon release.

Given that an inaccurate prediction could mean the difference between liberation and incarceration, these assessments must be conducted with great caution. This is especially true when one considers that the rate of false positives, that is, those assessments that incorrectly identify an individual as a risk when he is not, is incredibly high. This section explores some of the limitations in using prediction to assess risk of re-offending.

Prediction Variables

One of the main problems with prediction of criminal behavior and/or dangerousness is that the indicators often employed are dominated by static predictors with the limited induction of dynamic predictors. As mentioned earlier static factors are more or less permanent and cannot be changed, whereas dynamic risk factors refer to criminogenic or case needs that reflect change in an individual. Static factors have historically been the most stable, widely used unit for predicting future criminal behavior, therefore, when an assessment is made,

these factors undoubtedly play an influential role regardless of the impact from dynamic factors. An example of this would be a Native offender who has an extensive criminal history and a poor upbringing in a family replete with inter-generational crime, who now has a stable relationship with a caring partner and the promise of employment on release. Any heavy weighting afforded the static factors may unduly influence the decision to keep this individual incarcerated even though the dynamic factors would suggest he is more likely to succeed on release.

Further, to base decisions on historical factors denies the possibility of change. Some offenders do change, because of the influence of the system, changed circumstances, or something that happens within them. If we ignore current behavior, then we assume that offenders' fates are sealed by their past and deny the possibility of rehabilitation.

When one looks at Canadian risk scales[8] the dominance in the use of static risk predictors is also observable. These scales are not completely "unforgiving of the past", they merely summarizes what we would conclude about the offender's risk if we knew only about factors in his past. There are some major limitations, however, that will make it difficult or impossible to improve significantly on the performance of these static prediction instruments. One reason is that the scales are simply collections of measures that correlate with recidivism, without considering the psychological or social processes that actually cause the resumption of criminal behavior. As a result, offenders are judged on their past and unmotivated to make gradual improvements in their present. Because these scales are based on an atheoretical approach the only way to improve prediction using these scales is to re-create the entire scale and hope that the new version will be better than the previous one.

To construct a theoretical model of what causes recidivism, one must include more than just the historical factors that appear in current predictive scales. Not only have past attempts ignored the need for theoretical integration, but they have also used a restricted range of information - usually whatever was readily available in institutional files (Quinsey, 1984). Thus, researchers have

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[8] Examples include: (1) the offender intake assessment (OIA) process; (2) the statistical information on recidivism (SIR) scale; (3) the custody rating scale; and (4) the community risk/needs management scale

predicted future behavior exclusively on the basis of a selected range of historical information. Data on more dynamic and current functioning (attitudes, thoughts, behavior in prison, or coping patterns) have not yet appeared in the scales, largely because the data are not universally or easily available in offender files.

This restriction of sources of information has some undesirable consequences. Not only does it limit the predictive usefulness of the scales, but some of the variables used are also tied to social and economic inequities. An unpublished study (Porporino, Zamble, and Higginbottom, 1988) comparing the predictive ability of several scales found that the total scale scores were significantly related to such things as social class or amount of education. To base decisions about an offender's future treatment on such measures may therefore be unfair.

The obvious rebuttal to these assertions is to incorporate a more dynamic foundation, therefore incorporating better use of theory and measuring individual change. This may be better articulated in research rather than practice. The extensive amounts of research done between stable dynamic variables and future criminal behavior including Zamble, Bonta, Quinsey, and Porporino have shown promising results. However, much of stable dynamic research is performed on specific offenders (i.e. sexual predators) engaging in specific offenses (i.e. predicting re-offending of sex crimes). When this same stable dynamic research is applied to general offending, as was performed in this study, the results become no better than chance (Montgomery & Wilson, 1998). There appears to exist pressure in prediction research to incorporate a more dynamic model, however, what one must remember is that psychological causation is not statistical; for individuals it is always personal. Given that stable dynamic predictors have a personal foundation, it is unlikely that they will have any predictive significance if used to predict recidivism in the general criminal population. Stable dynamic predictors may show promising results; however, their usefulness may be better utilized on an individual basis than within a general risk assessment scale.

Dynamic Interpretation

The problems associated with the induction of dynamic predictors are not the only issue surrounding criminal prediction; one must also look at the individual predictors and how they are measured. To this day, measurement of dynamic predictors relies heavily on the subjective interpretations of individual professionals and practitioners. These interpretations have not only proven highly inaccurate owing to the lack of guidelines (Ward & Dockerill, 1999), but also due to the differences between clinician's theories and ideas behind the nature and causes of criminal behavior (Monahan, 1988). This theoretical orientation of professionals and practitioners might cause them to place a greater emphasis on certain factors over others simply owing to their professional orientation. For example, a Freudian psychologist might consider the relationship with the mother as a paramount consideration, while a cognitive psychologist might consider the offender's thoughts and perceptions as a more crucial factor.

Further, studies indicate that different clinicians often come to different conclusions after assessing the same individual (Menzies et al., 1994; Webster, Dickens & Addario, 1985). It would seem that the amount of training one has in risk assessment is unrelated to the accuracy of predictions made (Quinsey & Maguire, 1986). Furthermore, the amount of information supplied to the clinician is also unrelated to accuracy, though it does affect the degree of confidence in the predictions they make (Quinsey & Maguire, 1986). The majority of the literature indicates that neither statistical nor clinical predictions have been very accurate, which presents a unique conflict for the professionals involved since these often-flawed predictions are all that is available.

Offending Behavior

One of the biggest challenges facing risk assessment research is to determine which predictors best predict which crimes and for which offenders. Although static predictors and some dynamic predictors have faired well as general predictors of recidivism for low-risk offenders there exists some

skepticism surrounding the general application of risk predictors to predict high-risk and/or specific violent crimes (e.g. murder, rape). Research on the Canadian parole system found that reasonable levels of accuracy can be achieved with re-offending in general, based on certain demographic and criminological factors. This set of factors however, did not work across the board, providing poorer predictions with those offenders convicted of rape, homicide, assault or indecent assault (Montgomery & Wilson, 1998). For this population of offenders, one factor proved to be the best indicator: those with a history of three such (and similar) convictions had a repeat offending rate of 17.6%, and those with a history of five such offenses had a repeat offending rate of 27.6% (Montgomery & Wilson, 1998). It is important to point out that while the accuracy will increase in line with the number of offenses, even those with five or more offenses will only repeat offend on release approximately one quarter of the time. The net result of this is that a prediction that the offender will re-offend could be wrong as often as 75% of the time.

As a result of this inconsistency between predictors and offender circumstances, it is often argued that it is better to be overcautious with predictions, stating more often that an individual will recidivate when indeed they would not (Montgomery & Wilson, 1998). The penalties for failing to correctly identify a recidivist and/or dangerous individual can have both social and professional implications; therefore, most professionals will err on the side of caution and over-predict criminal behavior. Evidence suggests that even the most sophisticated methods yield a 60 to 70% rate of false positives (Montgomery & Wilson, 1998).

FINAL CONSIDERATIONS

In each of the proceeding chapters we have discussed in great detail risk assessment and its potential use in predicting recidivism, and more specifically, predicting recidivism while on bail for individuals referred for psychological assessment

It would be redundant to repeat or even review that discussion here. However, there are some general issues raised by the results as a whole. This

chapter is largely comprised of an examination of some of the wider implications of the recidivism research. Although this study did not produce any valid results to influence or direct future policy and practice initiatives, a thorough review of the recidivism literature has provided some interesting and thought provoking implications. First, we focus on the implications for research and practice that are forthcoming from risk assessment research on mentally ill individuals. We then look at the deficiencies of risk assessment research and the promises for new directions in the development of instruments and procedures for predicting recidivism.

Implications for Research

As outlined earlier, research on recidivism patterns of psychiatric patients has historically used strikingly inconsistent methods for analysis. Future research will be made more meaningful and comparable by using certain standards and accounting for certain variables.

Demographic (static) and diagnostic variables, if they have a theoretical basis for inclusion, should be controlled or accounted for in the analysis. This means not only measuring the effects of certain variables on psychiatric patients, but also measuring their effects on the general population in the hope of obtaining contrasts and similarities (Monahan, 1988).

With reference to community-based patients, the availability and accessibility of aftercare services should be measured or accounted for (Beiser, Shore, Peters, & Tatum, 1985). In theory, a more positive outcome may be expected on a number of various measures when things like treatment, income assistance, and housing resources are made more accessible (Andrews and Bonta, 1994). Similarly, variance in such resources from jurisdiction to jurisdiction, as well as treatment compliance, should also be taken into account. Another situational variable is the extent to which family and peers are available either as supports or stressors.

Future research must also use outcome measures more consistently for a meaningful comparison of studies. A number of different measures have been employed, including arrest rates, police encounters, self reports, return to prison,

spouse reports, and hospitalizations preceded by violence. However, each measure has its limitations. In addition to validity problems with outcome measures, there may be reliability problems (i.e. arrest rates and/or hospitalization rates may vary in response to changing policies or the availability of certain programs). In response, two general recommendations have been proposed by Monahan (1988): (1) conducting studies using the same outcome measure and operating under the same situational contingencies to ensure meaningful comparisons, and (2) combining outcome measures to get a broad picture of psychiatric patient level of recidivism. Outcome studies also must use follow-up periods of similar lengths. In summary, future research will need to take into account relevant diagnostic, demographic, and situational factors and will need to strive for consistency in the use of outcome measures while refining new measures.

Implications for Practice

Regardless of the results of this study, it is obvious that there does exist a fundamental problem with crime and recidivism within our sample of psychiatric patients. Recall from the analysis that of the total sample (N=139), 73 individuals (53%) recidivated while on bail. Since the medical treatment of a specific diagnosis is beyond the scope of this study, I have chosen to focus on community-based treatment services for implications in practice. This section is divided into four sections which briefly outline better accessibility and efficiency of treatment and support services, unsupervised services, family intervention, and treatment programs in North America.

The first section deals with accessibility and, as with most social programs, more accessible treatment services are needed. McFarland, Faulkner, Bloom, Hallaux, and Bray (1989, in Monahan, 1988) found in their study sample that of the psychiatric patients arrested by police, "in about half the cases a failed attempt at commitment had proceeded the arrest". This finding not only suggests a need for more inpatient beds but, perhaps controversially, the need to reevaluate restrictive hospital admission and committal policies (Monahan, 1988). Similarly, beyond more accessibility, more efficient

community-based treatment and support services are required. Bigelow (Bigelow in Monahan,1988) pointed out the need for new community residential facilities that would offer more "intensive supervision and control". The findings indicated that such patients, often because of assaultiveness and aggressiveness, are excluded from or cannot be managed in conventional facilities.

With reference to unsupervised settings, a relatively new approach meeting with success is the intensive case management program, as exemplified by the Interministerial Project run by the Provincial Government of British Columbia. Within this program, the recidivism of serious or "hard-core" clients in minimized by a pragmatic strategy of helping individuals with the basic activities of daily life. The labor intensiveness of such a program can be justified on the grounds that, in the case of mentally disordered offenders, a few individuals may account for a disproportionate number of offenses. The program is predicated on the working relationship between patients and case managers as a condition of probation and is staffed and managed by social workers. The intensive case management program has spun duplicate programs in the United States with the emergence of the Chicago Thresholds Bridge Program (Mulvey et al., 1986).

Thirdly, Intervention is also needed with the family of the mentally disordered offender as much of the violent and disruptive behavior may occur in the family setting. As Monahan (1988:22) noted, "violence is interactional in nature: if one person's coping response leads the other to escalate his or her provocations, violence may eventually ensure". In response, social workers or mental health professionals may mediate in family therapy, case management, or psychoeducation to address faulty coping mechanisms or systemic problems. Although already burdened by over-loaded casework, ideally social workers could serve as family resource people or as public educators to aid in patients' adjustment to healthier living.

Lastly, a number of studies and research (Monahan, 1988) has observed a lack of assessment and treatment programs for psychiatric patients in prisons. Mulvey et al., (1986) pointed out the significant number of mentally ill people in state prisons in the United States and the need for a "right-to-treatment posture". They suggest a case management program not only to assist the institutionalized person, but also to establish links with community resources and thus establish

greater continuity of care. In Canada, Monahan (1988) describes a psychoeducational assessment program at the Toronto Forensic Service where education and treatment programs are offered in an "attempt to interrupt the revolving door phenomenon between the criminal justice and mental health systems". With reference to the "revolving door" phenomenon it is generally agreed that a greater coordination of services for the mentally disordered offender is needed. Perhaps the need for greater interdepartmental cooperation could be achieved through the establishment of a centralized inter-department authority.

In conclusion, several policy and practice initiatives may improve the needs of the mentally disordered offender and, therefore, may create an impact on criminal behaviors. More accessible treatment and support services both in the community and the institution are needed as well as greater coordination of client care, probably through a case management approach.

New Directions in Predicting Recidivism

After considering first the theoretical imports and empirical implications, as well as the results of the current study, this last section deals with the future development of predictive techniques when studying individuals with psychological impairments. At the very least our results suggest that additional factors or predictors should be incorporated which better measure mental illness, and individual functioning in general. More applicable measures should emphasize the current psychological state of an individual with social variables (such as education) acting as supplemental in predicting recidivism. This would allow risk assessment studies to sample from a wider universe of meaningful predictor variables, which alone may produce greater predictive significance. Any study that attempts to measure an individual's mental state should place an importance on psychological variables; however, crude measures of psychological state (as in this study) may cause definitional and methodological problems and should be avoided when possible. Direct measures such as the attitudinal domain of the Case Needs Identification and Analysis (CNIA) are more methodologically solid than indirect predictors such as the anti-social personality

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variable used in this study. A focus on direct psychological functioning may increase the accuracy of predictions and in identifying those who present a higher risk over time.

Another important reason for attempting to obtain a direct measure of an individual's psychological state is that it allows a study to repeat the measurement process over time. Like most other significant behaviors, recidivism is the result of the continuous interaction between behavior propensities and the environment. The risk of a new offense is a dynamic product of this interaction, so as both the individual and his environment evolve over time, the risk of recidivism can also change continuously (Zamble and Quinsey, 1997).

Measurement during shorter-term time frames such as the bail process, no matter how well executed or controlled for, cannot allow for the process of transformation and/or change. In contrast, a study that incorporates re-measurement along an individual's transformation allows for the possibility of periodically updating recidivism, thus matching risk of recidivism with current measures of individual functioning. This re-measurement or dynamic updating, as termed by Zamble and Quinsey (1997), could be combined with various statistical techniques such as longitudinal analysis to observe predictions of risk and how those observations change with individual behaviors and functioning over time. The resulting function of dynamic updating is that an individual's risk of recidivism is matched against his/her current level of functioning, therefore probably resulting in the greatest and most accurate prediction. Thus scales that incorporate both historical as well as current psychological states would likely achieve greater accuracy in risk assessment research, as well as the possibility of strengthening prediction with the inclusion of longitudinal follow-ups.

Within this analysis predictors such as age, dependent alcohol use, and an individual's score on the GAF-C scale decreased the probability of an individual recidivating while on bail. Although a few significant relationships were discovered, the majority of the predictors used in this study were inconclusive at predicting recidivism. So why did our results not support the tremendous amount of literature on risk assessment and the predictors of recidivism? In the preceding chapter we discussed some of the methodological, theoretical, mental

illness, and risk assessment limitations that may have accounted for our lack of results. My conclusion from those limitations is that any study attempting to utilize prediction, especially prediction of human behavior, must ensure that proper attention is given to the measurement, collection, and interpretation of the predictors. The literature, research community, and the courts all support risk assessment as a valid tool in assisting professionals to measure an individual's risk of future criminal behavior; but have we entrusted an individual's freedom to a method where the results are no better than chance? I never set out to build a causation model, or advance the risk assessment literature to new psychological highs; this study simply wanted to test some of the core assumptions surrounding the prediction of recidivism applied to a specific sample. Not only was it very difficult to measure the effect of dynamic variables on recidivism, but this study wasn't even able to duplicate the effects of the most commonly used, stable, static variables. Although our results were disappointing, these results did bring to light some of the problems associated with prediction research and perhaps why there still exists some skepticism from justice professionals concerning the use of risk prediction in practice. What is worrying is that many professionals who use risk assessment to grant liberation or incarceration may truly not understand the risks and limitations in utilizing these predictors.

Performing risk assessment is a complex, and some would say, volatile practice. It is not surprising that the rate of false positives is high, since professionals are faced with the political and social pressures of releasing criminals back into society using a method with a slightly better than chance outcome. While risk assessments are not as accurate or easy as often depicted, there is some evidence to suggest that under certain conditions such predictions could become more accurate. These conditions include the use of a number of demographic and criminological factors, and in some cases the presence of certain psychiatric conditions, though these may not be as accurate as factors such as past criminal behavior. The fact that such predictions are only moderately accurate should not be surprising. No human behavior that is significant, or in this case extreme, is the result of any one or two factors. Usually, the presence of criminal behavior is a result of the interplay between numerous factors including psychological, social and situational determinants.

The ability to identify and acknowledge all of these dimensions is challenging, if not impossible, and so often assessments will be made on the side of caution, thereby potentially restricting an individual's freedom. Although many tools and techniques have been explicitly designed to improve risk assessment, I believe that predictors in the immediate future will be no more accurate than a slightly better than chance level, and subject to error.

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Global Assessment of Functioning (GAF) Scale

Consider psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. Do not include impairment in functioning due to physical for environmental limitations. (Due to Mental Illness Ignore Criminal Behavior).

Code (Note: Use intermediate codes when appropriate, e.g., 45, 68, 72.)

91-100   Superior functioning in a wide range of activities; life's problems never seem to get out of hand; is sought out by others because of his or her many positive qualities; no symptoms.

81-90   Absent or minimal symptoms (e.g. mild anxiety before an exam); good functioning in all areas; interested and involved in a wide range of activities; socially effective; generally satisfied with life; no more than everyday problems or concerns (e.g. an occasional argument with family members).

71-80   If symptoms are present, they are transient and expectable reactions to psychosocial stressors (e.g. difficulty concentrating after family argument); no more than slight impairment in social occupational, or school functioning (e.g. temporary falling behind in schoolwork).

61-70   Some mild symptoms (e.g. depressed mood and mild insomnia) OR some difficulty in social, occupational, or school functioning (e.g. occasional truancy, or theft within the household), but generally functioning pretty well; has some meaningful interpersonal relationships.

51-60   Moderate symptoms (e.g. flat affect and circumstantial speech, occasional panic attacks) OR moderate difficulty in social, occupational, or school functioning (e.g. few friends, conflicts with peers or co-workers).

41-50   Serious symptoms (e.g. suicidal ideation, severe obsessional rituals, frequent shoplifting) OR any Serious impairment in social, occupational, or school functioning (e.g. no friends, unable to keep a job).

31-40   Some impairment in reality testing or communication (e.g. speech is at times illogical, obscure, or irrelevant) OR major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood (e.g. depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children; is defiant at home, and is failing at school).

21-30   Behavior is considerably influenced by delusions of hallucinations OR serious impairment in communication or judgment (e.g. sometimes incoherent, acts grossly inappropriately, suicidal preoccupation) OR inability to function in almost all areas (e.g. stays in bed all day; no job, home, or friends).

11-20   Some danger of severely hurting self or others (e.g. suicidal attempts without clear expectation of death; frequent violent manic excitement) OR occasionally fails to maintain minimal personal hygiene (e.g. smears feces) OR gross i9mpaiment in communication (e.g. largely incoherent or mute).

1-10   Persistent danger of severely hurting self or others (e.g. recurrent violence) OR persistent inability to maintain minimal personal hygiene OR serious suicidal act with clears expectations of death.

0   Inadequate information

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Appendix B

Global Criminal Assessment of Functioning In Non-Criminal Society (GAF-C) Scale

Consider ability to function non-criminally in society. Don't consider factors present in the Global Assessment of Functioning Scale (GAF). This scale is to factor criminal behavior out of the GAF scale so that the GAF scale can be used as a crude outcome measure scale for treatment and to see if biopsychosocial interventions have an impact on criminality. It is intended to be used ifeuristically.

(Ignore Psychiatric Disorders in This Scale)

100	No criminal activities. Always resolve disputes in a mature way.
91-99	Insulted or swore at others; sulked or refused to talk about an issue; stomped out of a room or yard; did or said something to spite others.
81-90	Minimal criminal activity (not stopping at stop signs, crossing street on no-walk sign, has threatened to throw something or threatened to hit another person a few times).
71-80	Avoiding GST; not declaring certain income for income tax. Has threatened to hit another person or threatened to throw something at another person many times; has thrown, smashed or hit or kicked something a few times. Has committed a more serious crime that is out of character for him/her. Has driven impaired once but not charged.
61-70	Mild criminal activity (Cheating on tax is a way of life; has thrown, smashed, hit, or kicked something many times. A few times has thrown something at others and missed. Has pushed, shoved, grabbed, or slapped another many times with minimal injury; impaired driving charge once or driven impaired a few times).
51-60	Moderate criminal activity (theft within the household; probation in the past year; use of aggressive language to control another person. Has thrown something at other and missed man times. Has pushed, shoved, grabbed, or slapped another many times with minimal injury Has hit with a fist or kicked or bit a few times. Has hit or tried to hit another with a weapon once. More than one impaired driving charge or has driven impaired many times. Exposure of genitals).
41-50	Serious criminal activity (frequent shoplifting; frequently selling drugs; in jail in the past year; chronic lying; fondling children. Has kicked, bitten, or hit with a fist another person many times. Has hit or tried to hit another person with a weapon more than once. Has beaten another person up a few times. Impaired driving while license suspended for impaired driving).
31-40	Severe criminal activity (steals as a business; selling drugs as a business; any criminal activity as a business; ¼ to ½ of the last five years in jail; has threatened another with a knife or a gun once. Has choked another person once. Has beaten another person up many times. Kissing sexual parts of children. Attempted rape).
21-30	1/2 to 4/5 of the last five years in jail; anal, oral, or viginal sex with a child; has caused loss of consciousness in another person. Has choked another person more than once. Has threatened another person with a knife or gun more than once. Has fired a gun at a person once and used a knife to cut a person once. Has raped once).
11-20	Hardened criminal activity (repeated criminal behavior in more than one category; can't stay out of jail for more than a few months' at high risk or hurting others; most of the last five years in jail; has maimed others. Has fired a gun at another person more than once. Has used a knife to cut another person more than once. Has raped a few times, or raped once threatening with a weapon).
1-10	Vicious criminal activity (unable to function without hurting others; serial rapist; serial killer; vicious crimes
0	Inadequate information

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