AN ASSESSMENT OF THE RELIABILITY AND VALIDITY OF THE SECURITY RATING AND INMATE RISK ASSESSMENTS USED IN CORRECTIONAL INSTITUTIONS IN NEWFOUNDLAND AND LABRADOR

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BY

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Abstract

The Security Rating and Inmate Risk Assessments, two instruments used in correctional institutions in Newfoundland and Labrador, were examined for their ability to predict recidivism. The Security Rating Assessment is primarily composed of items related to an offender's past and present criminal behaviour. In contrast, the Inmate Risk Assessment is composed of "need" items: items that deal with the type and severity of social, emotional, and economic problems experienced by an offender. Recidivism was defined as reincarceration and both a dichotomous criterion, recidivist vs. non-recidivist, and a continuous criterion, number of violation-free days, were used. Three institutions with different male inmate populations were separately examined to determine the reliability and validity of the two instruments. The correlations obtained at the three institutions were coverted to z-scores and tests of differences were conducted. In cases where significant differences were not found, a single correlation was calculated using the combined samples. The recidivism rate for all the institutions combined was 18.57% with a low of 11.74% and a high of 29.21%. Both assessments were found to be reliable as shown by the intercorrelations and Cronbach's alpha. In general, the assessments were also found to be valid as shown by the criterion-to-total score correlations.

Also, the recidivism rates correlated positively with the different security and risk levels as measured by the Security Rating and Inmate Risk Assessments. Specifically, more medium-security inmates than minimum-security inmates were recidivists. As well, low-risk inmates were less likely to recidivate than medium or high-risk inmates. The Inmate Risk Assessment could not discriminate between the medium and high-risk categories. In conclusion, more accurate predictions of recidivism can be made by using the Security Rating and Inmate Risk Assessments.

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CHAPTER 1

Introduction

An Assessment of the Reliability and Validity of the Security Rating and Inmate Risk Assessments Used in Correctional Institutions in Newfoundland and Labrador

Over the past several decades there have been many attempts to develop statistical or actuarial methods to predict the level of risk that criminal offenders present to the community. It has been evident in the literature since the 1940s and 1950s that a few well-chosen risk factors can predict criminal recidivism with an impressive level of accuracy. However, it was not until the 1970s and 1980s that statistical prediction instruments were systematically introduced into correctional practice in Canada (Andrews, 1989; Harris, Rice, & Quinsey, 1993).

Ideally, classification instruments in corrections should assess not only risk factors but need factors as well (Bonta & Motiuk, 1985). Risk is defined in terms of an offender's potential for committing a subsequent offence or technical violation upon release from a correctional institution. The assessment of risk is usually based primarily on the offender's criminal history. Need, a subset of risk, is usually defined as the type and severity of social, emotional, and economic problems experienced by the offender. Need is a subset of risk in the sense that there exists a positive relationship between the needs of an

offender and his risk of reoffending (Adult Corrections Division, 1991; Andrews, Bonta, & Hoge, 1990; Bonta & Motiuk, 1985).

There are two reasons for assessing both risk and need factors. First, a combined assessment of risk and need levels significantly improves the ability to predict who is likely to reoffend because a greater number and variety of factors are examined (Andrews, 1989; Bonta & Motiuk, 1987; Motiuk, 1993). Research has found that criminal history factors are positively related to recidivism and that a consistent relationship exists between the type and number of needs offenders exhibit and the likelihood of reoffending (Adult Corrections Division, 1991; Andrews et al., 1990; Bonta & Motiuk 1985).

A second reason for assessing both risk and needs is that it helps to achieve a balance between the goals of ensuring community safety and rehabilitating the offender (Clear & Gallagher, 1983). To ensure community safety, the offender must be placed under appropriate surveillance. To rehabilitate the offender, problems or needs have to be identified and resolved in order to reintegrate the person into the community. As pointed out by Andrews (1989), the research on needs is small in volume in comparison to the abundance of research on risk factors.

1.1 Risk/Needs Instruments

According to Gendreau, Cullen, and Bonta (1994), there are only three risk/needs instruments in widespread use. These include the Level of Supervision Inventory (LSI) which is used in probation and parole in Ontario, the Wisconsin classification system which is used in probation in several states and Canadian provinces, and the Community Risk/Needs Management Scale which is used to classify federal offenders on conditional release in Canada.

The risk instruments usually consist of static items that pertain to an offender's prior criminal history such as the number and severity of prior offences, age at first conviction, and record of escapes or attempts (Bonta, 1993). In contrast, needs instruments usually include dynamic items which assess "criminogenic" needs (Andrews, 1989; Gendreau et al., 1994). Criminogenic or dynamic needs are characteristics of the offender that can change or be modified over time such as attitudes, associates and companions, substance abuse, and educational and vocational skills (Andrews et al., 1990). The importance of these criminogenic needs is that they serve as treatment goals. When programs successfully target and diminish or resolve offenders' needs, one can expect a decrease in recidivism (Andrews et al., 1990; Gendreau et al., 1994). Conversely, offenders whose needs are left unresolved are more likely to

continue their involvement in criminal behaviour.

1.2 Areas of Inmate Assessment Research

Many studies have focused on classification assessments used in the areas of probation, parole, or halfway-house programs (Andrews, Kiessling, Robinson, & Mickus, 1986; Ashford & LeCroy, 1988; Baird, 1981; Bonta, 1993; Bonta & Motiuk, 1985, 1987, 1990; Clear & Gallagher, 1983, 1985; Eaglin & Lombard, 1981, 1982; Motiuk, Bonta, & Andrews, 1986; Wright, Clear, & Dickson, 1984). In contrast, relatively little inmate assessment research has been conducted within correctional institutions and what has been done has dealt with institutional adjustment (Clark, Fisher, & McDougall, 1993; Hanson, Moss, Hosford, & Johnson, 1983; Wright, 1988). Although this is the case, classification instruments serve the same purpose in correctional institutions as they do in probation and parole. That is, the instruments purport to identify those risk and need factors that are positively related to recidivism.

1.3 The Classification Process

An important task in corrections is to deal with offenders in such a way that low-risk cases remain low and higher-risk cases move toward lower risk. Identifying offenders as low, medium, or high in risk or need is

achieved through a process known as classification. After identifying offenders' risk/need levels, specific plans can be devised to place offenders in appropriate programs. As Andrews (1989) stated:

> ... [classification] involves the management and treatment of offenders according to their risk level (the risk principle), choosing appropriate targets of rehabilitative programming (the need principle), and employing styles and modes of treatment that are appropriate for offenders (the responsivity principle) (p. 14).

Therefore, the primary goal of inmate classification systems is to place inmates in correctional settings which maximize the probability of rehabilitation and ensure the safety and security of correctional institutions (Ontario Ministry of Correctional Services, 1990).

Perhaps the most important characteristic of instruments that measure risk and needs is their ability to predict recidivism. Hence, to be useful, the instruments' predictive validity must be demonstrated. In terms of offender classification, validity refers to the degree to which offenders classified as high risk and/or need are more likely to reoffend than those classified as low risk and/or

need. It is important to note that inmates' scores on these instruments make it possible only to rank the inmates in terms of their potential for reoffending. The scores cannot be used to estimate, in absolute terms, the probability that any particular inmate will reoffend (Clear & Gallagher, 1983; Nuttall et al., 1977; Wright et al., 1984).

1.4 Validity of Instruments

There is a wealth of evidence in the literature that the validity of instruments cannot be assumed to transfer from one population to another; validity must be established separately for each population (Anastasi, 1982; Ashford & LeCroy, 1988; Clear & Gallagher, 1983, 1985; Eaglin & Lombard, 1981, 1982; Gottfredson, 1977; Gottfredson, 1987; Gottfredson & Gottfredson, 1986; Kane, 1986; Rhodes, 1985; Simon, 1971; Talmage & Rasher, 1981; Wright, 1988; Wright et al., 1984). For example, the Wisconsin classification system was found to be predictive of revocation rates for probationers in Los Angeles county (Glaser, 1987), but not valid for a population of New York City probationers (Wright et al., 1984).

There are several possible explanations why a classification system that predicts well for one population predicts poorly for another. First, there may be little or no variability in one or more predictors in a particular

population. For example, if a large majority of the offenders in a population are unemployed, employment status is not likely to be useful in predicting recidivism. However, in another population where several offenders have full-time jobs, others are employed seasonally, and others are unemployed and rely on social assistance, employment status may be a more useful predictor.

A second reason for differences across populations is that one or more predictors may not be culturally relevant to a particular population. For example, alcohol abuse may be a major determinant of criminal behaviour among offenders in some cultures but not in others. Therefore, the specific social and environmental influences on criminality may vary across populations. As Gottfredson and Gottfredson (1980) explain:

> ... the greatest limitation of prediction methods is that the devices are developed and validated with respect to specific criteria, using available data, in a specific jurisdiction, during a specific time period. Thus, any generalization to other outcomes of interest, or after modifications of the item definitions used, or to other jurisdictions or populations, or to other time periods, are to be questioned (p. 328).

Lastly, the power of different predictors may vary across populations because of simple chance factors. Instruments developed using techniques such as multiple regression, logit analysis, discriminant analysis, or predictive attribute analysis are more susceptible to Type I errors than are simpler techniques such as the Burgess or simple summation method (Benda, 1987; Copas & Tarling, 1986; Gottfredson & Gottfredson, 1980; Hoffman, 1983; Loeber & Dishion, 1983; Nuffield, 1982; Simon, 1971; Wright et al., 1984). Because measurement and recording errors will inevitably be present in the data (Benda, 1987; Copas & Tarling, 1986), repeated validations are essential.

1.5 Characteristics of the Institutions

In Newfoundland and Labrador, the Institutional Services Branch of the Adult Correctional Division is comprised of seven correctional centres and two lock-ups (Adult Corrections Division, 1991). The data in the present study were gathered at the three largest correctional centres, Her Majesty's Penitentiary in St. John's, the West Coast Correctional Centre in Stephenville, and the Labrador Correctional Centre in Happy Valley/Goose Bay. These institutions were selected partly because of their size but mainly because it was known that the classification officer(s) at each institution were using the Security

Rating and Inmate Risk Assessments.

Some statistics concerning the three institutions are presented in Table 1.1. In this table, the standard capacity refers to the number of inmates the institution is capable of housing. Rate of admissions refers to the percentage of inmates that were incarcerated at the institution during the year. As can be seen, Her Majesty's Penitentiary is the largest of the institutions and incarcerated the most inmates during 1990-1991. Of all the inmates incarcerated during 1990-1991, 57% were incarcerated at Her Majesty's Penitentiary.

1.5.1 Her Majesty's Penitentiary

This institution is classified as a minimum/medium security prison. Prisons with this security classification can house inmates for the maximum period of two years less a day. Inmates incarcerated at this facility have been convicted of offences ranging from low severity (e.g., impaired driving, causing a disturbance, etc.) to high severity (e.g., armed robbery, rape, etc.). Although most inmates live on the east coast of Newfoundland, there are several exceptions. For example, persons from across the province who have been convicted of sexual and/or physical abuse against children or adults are incarcerated at Her Majesty's Penitentiary because the institution has a

Table 1.1

Characteristics of Her Majesty's Penitentiary, the West Coast Correctional Centre, and the Labrador Correctional Centre

Institution	Standard Capacity	Staff Complement	No. of Admissions (1990-1991)	Rate of Admissions (%)
Her Majesty's Penitentiary	147	106	1296	57.0
West Coast Correctional Centre	50	27	441	19.4
Labrador Correctional Centre	38	29	116	5.1

Note. From Inmate classification system (n.p.), by Adult Corrections Division, 1991, St John's, Government of Newfoundland and Labrador, Department of Justice. Copyright 1991 by Department of Justice. Adapted with permission of the author.

protective custody unit. Second, inmates who have previously been incarcerated at another institution in the province but who have caused problems while serving their sentences are brought to Her Majesty's Penitentiary. Third, inmates who need psychiatric care, e.g., are highly suicidal, are brought to Her Majesty's Penitentiary. Psychiatric assessments are completed at the Waterford Hospital. Lastly, inmates who have lengthy criminal records and have committed violent offences (i.e., "hard-core" criminals) are housed at Her Majesty's Penitentiary.

1.5.2 West Coast Correctional Centre

This institution is also classified as a minimum/medium security prison. Generally, inmates at this institution, compared to those at Her Majesty's Penitentiary, have committed less violent offences and have shorter criminal records. In contrast to both Her Majesty's Penitentiary and the Labrador Correctional Centre, inmates who are remanded into custody while awaiting trial or sentencing can only be housed at the West Coast Correctional Centre for a maximum of seven days. At Her Majesty's Penitentiary and the Labrador Correctional Centre, inmates who are remanded into custody can be housed at these institutions for an indefinite period of time. Although inmates at the West Coast Correctional Centre usually live west of Central

Newfoundland, there are exceptions. For example, when the Labrador Correctional Centre is filled, offenders from Labrador are moved to the West Coast Correctional Centre.

1.5.3 Labrador Correctional Centre

This institution, the smallest of the three, is also classified as a minimum/medium security prison. The largest percentage of inmates are native (e.g., Innu and Innuit). Like the West Coast Correctional Centre but in contrast to Her Majesty's Penitentiary, inmates have committed less violent offences and do not have lengthy criminal records. Although the institution does not have a protective custody unit, it does house some sexual offenders in the general inmate population. Within the native population, this type of inmate is not at as high a risk of being harmed as are Caucasian sexual offenders in a Caucasian population.

1.6 Development of the Security Rating and Inmate Risk Assessments

The classification instruments were developed in Newfoundland in 1991 by a committee consisting of the Supervisor of Classification, the Supervisor of Community Corrections, and a Classification Officer at Her Majesty's Penitentiary. One of the primary reasons for the development of the new instruments was to move away from the subjective

system, which had been used for several years in Newfoundland and Labrador, toward a more objective system. Reliance on subjective classification instruments with informal criteria (e.g., escape risk) often leads to inconsistent assessments (Adult Corrections Division, 1991). On the other hand, objective classification instruments such as the Level of Supervisory Inventory (LSI) and the Statistical Information on Recidivism (SIR) Scale consist of well-defined factors which include the following: (a) legal items dealing with such things as the severity of the present offence(s), length of the sentence, prior criminal record, and incidents of violence; (b) dynamic items dealing with attitudes, associates and companions, and substance abuse; and (c) fixed items that assess things such as age. The response alternatives of the items are assigned different numerical values which reflect the assessment value of the information. These values are then used to determine an inmate's level of risk and/or need. Objective classification instruments thereby help to ensure more fairness and consistency in the decision-making process because all decisions are based on the same factors and criteria.

During the early stages of developing a classification instrument it became evident to the committee that the divisional mandate and the institutional requirements could

not be thoroughly fulfilled by the development of one inmate classification assessment (Adult Corrections Division, 1991). The divisional mandate is "to provide the necessary custody, supervision, and control of offenders while affording them program opportunities for reintegration into the community to become law abiding citizens" (Adult Corrections Division, 1991, p. 1). Hence, to fulfil the divisional requirements there was a need to devise a risk instrument to assess the likelihood that released offenders would reoffend. Regarding the institutional requirements, there was a need to devise a security instrument to provide a systematic, comprehensive, and consistent method of completing a security classification on sentenced offenders. Therefore, what resulted were two classification instruments that are independent of each other; each uses distinct objective scoring methods, and each has clearly established purposes and goals. However, both are used in making decisions regarding transfers between institutions and about release options such as parole and granting temporary absences.

The two assessments currently used in correctional institutions in Newfoundland and Labrador are the Security Rating Assessment which assesses the risk of offenders and the Inmate Risk Assessment which, despite its name, assesses the needs of offenders. These instruments have been used at

the West Coast Correctional Centre in Stephenville, the Labrador Correctional Centre in Goose Bay, and Her Majesty's Penitentiary in St. John's since November 1992. Within 30 days of an offender's incarceration, the assessments are completed through interviews conducted by the Classification Officer. The Security Rating Assessment is completed on all inmates except those serving intermittent sentences, those incarcerated due to parole suspensions, or those remanded into custody while awaiting trial. The Inmate Risk Assessment is completed on all inmates who received a sentence of 93 days or greater with the exception of inmates who are serving intermittent sentences or inmates who are incarcerated due to parole suspensions. As well, recidivist inmates who have been assessed within the past 12 months are not assessed again unless important changes in the offender's circumstances are known to have occurred. The instruments will now be discussed in detail.

1.6.1 Security Rating Assessment

The Security Rating Assessment was derived from the Security Rating Scale used in Alberta. However, information (e.g., items and item weights) contained in the following sources was also reviewed and assessed specifically for its relevance to Newfoundland and Labrador's Provincial Correctional System: The Correctional Services of Canada

Custody Rating Scale, Manitoba's Admission Assessment Scale, the Security Rating Scale from Saskatchewan, and the classification system used by Ontario's Ministry of Corrections (Adult Corrections Division, 1991).

The items included in the assessment are based on evidence in the literature that the frequency and severity of past criminal behaviour is the best indicator of similar behaviour in the future (Andrews, 1983; Ashford & LeCroy, 1988, 1990; Clark et al., 1993; Cornish & Clarke, 1975; Farrington & West, 1990; Gabor, 1986; Gottfredson & Gottfredson, 1986; Hanson et al., 1983; Hill, 1985; Hoffman, 1983; Klein & Caggiano, 1986; Loeber & Dishion, 1983; Nuffield, 1982; Owens & Schoenfeldt, 1979; Simon, 1971). Specifically, the following nine factors are assessed: (a) nature of outstanding charges and crown appeals, (b) severity of present offence, (c) length of sentence, (d) nature of prior offences, (e) record of escapes or attempts, (f) history of violence, (g) age, (h) pre-trial status, and (i) psychiatric stability. The full assessment instrument is reprinted in Appendix A.

Four of the factors, (a), (d), (h), and (i), require a brief explanation. Factor (a), nature of outstanding charges and crown appeals, needs to be defined separately. The nature of outstanding charges refers to the severity of offences an inmate has been charged with, but has not been

convicted of, at the time of his incarceration. For example, an inmate may be incarcerated because he was convicted of breaking and entering. He may also be charged with possession of a narcotic but this charge may not yet have been heard by a judge. This offence represents an outstanding charge. The nature of Crown appeals refers to the severity of offences on which an inmate was originally convicted or acquitted but on which the Prosecution has lodged an appeal. Factor (d), nature of prior offences, refers to the severity of offences an inmate committed in the past. The severity of offences for factors (a) and (d) is determined using the Severity of Offence Scale (Adult Corrections Division, 1991). Factor (h), pre-trial status, refers to the offender's status preceding and during the trial period for the current offences (e.g., whether or not a bail or recognizance order was in effect). Finally, factor (i), psychiatric stability, is scored 'yes' or 'no' whereas the other factors are assigned weighted numerical values to reflect the significance of the factor to recidivism.

Two steps are required to calculate the total risk score. First, the scores on the first seven factors, (a) to (g), are added together. Second, the score for factor (h), pre-trial status, is subtracted from the total obtained in the first step. If the result is negative, zero is assigned as the total risk score. The following scale shows how the

risk score is used to assign an inmate to an appropriate security level:

Security Level	Assessment Score
minimum	0 to 15 points
medium	16 to 24 points
maximum	25+ points

Exceptions to the assignment rules sometimes occur. If there are concerns about inmates' mental, emotional, or psychiatric stability, those who would otherwise have been categorized as minimum security are automatically placed in the medium-risk category. For example, an inmate who has an assessment score between 0 and 15, but who has displayed or is displaying suicidal tendencies would be placed in the medium-risk category. It is important to note, however, that the psychiatric stability factor is only used as a temporary measure until a psychological or psychiatric report is completed. Placing a minimum-risk inmate in the medium-risk category is also known as overriding the score. Overriding a score refers to placing an inmate in a higher or lower security rating category than was identified by the assessment based on information that is usually not contained on the assessment. Other examples of factors which may justify overriding an initial classification include the

need to separate co-accused offenders and the need to provide special facilities for elderly persons or those with disabilities. The override option should only be used in 10% to 15% of all cases (Adult Corrections Division, 1991).

1.6.2 Inmate Risk Assessment

The Inmate Risk Assessment was derived from the Wisconsin classification system. However, information (e.g., items and item weights) contained in the following sources was also reviewed and assessed specifically for its relevance to Newfoundland and Labrador's Provincial Correctional System: The Correctional Services of Canada Case Management Strategies (risk/need assessment), the Statistical Information on Recidivism (SIR), and other provincial classification systems (Adult Corrections Division, 1991). The assessment, consisting of both dynamic and static factors, includes the following 13 categories: (a) attitude, (b) alcohol usage, (c) other drug involvement, (d) associates/companions, (e) living arrangements, (f) self-management skills, (g) interpersonal relationships, (h) early family of origin, (i) age of first conviction, (j) number of prior periods of probation and/or parole supervision, (k) number of prior breaches of probation, parole, and/or temporary leave of absence, (l) number of prior convictions for indictable offences, and (m) prior or

current convictions for spousal or sexual assault. The complete instrument can be seen in Appendix B.

The factors that have been found to be most closely related to recidivism are weighted most heavily. As well, the dynamic factors are weighted slightly more heavily than the static factors. Total need scores are calculated by summing the scores for each factor. The following rules are used to assign the inmate to one of three need levels:

Need Level	Assessment Score
low	0 to 8 points
medium	9 to 18 points
high	19+ points

There is an exception to the rules, however. Offenders who have prior or current convictions for spousal or sexual assault are automatically placed in the high-need category. Specific programs can then be implemented with this type of offender.

1.7 Present Study

Taking into consideration that the purpose of classification instruments is to predict recidivism and that their validity must be established separately for each population, the present study was undertaken to assess the

reliability and validity of the Security Rating and Inmate Risk Assessments which are used in three correctional institutions in Newfoundland and Labrador. The present research is the first attempt to assess the reliability and validity of these instruments.

1.7.1 Reliability

Reliability is a necessary although not sufficient prerequisite of validity. In the present study intercorrelations and Cronbach's alpha were emphasized. The items on the assessments are potential predictors of recidivism and do not presume to measure a single dimension or construct.

1.7.2 Validity

Validity, like reliability can be assessed in many ways. In the present study, the type of validity referred to as criterion-related or predictive validity is emphasized. Nunnally (1978) stated that criterion-related validity "is at issue when the purpose is to use an instrument to estimate some important form of behaviour that is external to the measuring instrument itself, the latter being referred to as the criterion" (p. 87). Therefore, predictive validity is directed toward answering the question "Are the individual items in classification instruments predictive of

inmate or offender behaviour?" (Austin, 1986, p. 303). The factors included on the instruments are the predictors and the behaviour that one wishes to predict, in this case, recidivism, is the criterion. If the instruments are valid, there will be a positive relationship between an offender's scores on the instruments and the rate of recidivism (Clear & Gallagher, 1983; Wright, 1988). Valid predictive instruments should make it possible to distinguish inmates in terms of their potential risk of recidivism (Austin, 1983).

CHAPTER 2

Measures

Before proceeding with the details of the study, several issues related to the measurement of recidivism need to be examined.

2.1 Definition of Recidivism

Although researchers agree on the importance of recidivism, there is little agreement on its operational definition (Allen, Eskridge, Latessa, & Vito, 1985; Benda, 1987; Cavior & Cohen, 1975). Recidivism can mean rearrest, reconviction, or reincarceration. A controversy exists in the literature concerning the consequences of using different definitions of recidivism. Hoffman, Stone-Meierhoefer, and Beck (1978) and Klein and Caggiano (1986) compared different measures of recidivism and found that they produced similar results. In contrast, Geerken and Hayes (1993), Hawkins, Cassidy, Light, and Miller (1977), and Hoffman and Stone-Meierhoefer (1980) found different results with different definitions.

Reppucci and Clingempeel (1978) state that recidivism is often defined as reincarceration following release from a correctional setting. Reincarceration may result from violations of release conditions (e.g., parole or probation) and/or convictions for new offences. Several studies have operationalized recidivism as reincarceration (Benda, 1987; Bonta & Motiuk, 1985, 1987, 1990; Carlson, 1981; Gottfredson

& Gottfredson, 1980; Harris et al., 1993; Hoffman, 1983; Motiuk et al., 1986; Motiuk, Motiuk, & Bonta, 1992).

The major drawback of using the reincarceration definition is the difficulty of determining who are truly recidivists. There are numerous situations in which an offender would be classified as a non-recidivist when in fact he did commit another offence upon release. First, some crimes may go undetected by the police. Second, an offender may be arrested but not reincarcerated. Instead, he may receive probation or he may be admitted to an alternative program such as one offered in a mental hospital. Third, he may die while committing an offence or during the follow-up period. Fourth, an offender may move out of the province and continue his criminal behaviour, undetected at Newfoundland and Labrador's provincial level. Finally, an offender may receive a federal sentence (i.e., over 2 years) which again may not be detected at the provincial level. In all these instances, the offender would be incorrectly identified as a non-recidivist. Such errors are known as Type II errors or false negatives (Reppucci & Clingempeel, 1978).

Despite the problems just mentioned, reincarceration was chosen as the operational definition of recidivism in the present study. Reincarceration data for Newfoundland and Labrador are readily available via the correctional institutions' computer system, the Canadian Criminal Justice

System (CCJS), whereas rearrest and reconviction data must be obtained through the Royal Canadian Mounted Police (RCMP) and/or the Royal Newfoundland Constabulary (RNC) and are not easily accessible.

2.2 Classification of Recidivism

Related to the operational definition of recidivism are the different classifications of recidivism that may be used. Recidivism can be measured as an all-or-none dichotomy or as a continuous variable with time to recidivism measured in days, weeks, months, etc. Time to recidivism is also referred to as "violation-free time" (Eaglin & Lombard, 1981, p. 26). The majority of studies have used the binary classification, recidivist versus non-recidivist (Andrews et al. 1986; Andrews, Wormith, & Kiessling, 1985; Ashford & LeCroy, 1990; Benda, 1987; Bonta & Motiuk, 1985, 1987, 1990; Eaglin & Lombard, 1981; Gendreau, Madden, & Leipciger, 1980; Gottfredson & Gottfredson, 1980; Harris et al., 1993; Hoffman, 1983; Motiuk et al., 1986; Motiuk et al., 1992; Nuttall et al., 1977; Simon, 1971; Wright et al., 1984). However, it has been argued that a continuous scale may provide a more accurate assessment of recidivism (Gendreau & Leipciger, 1978; Gottfredson & Gottfredson, 1980; Harris & Moltra, 1978; Holosko & Carlson, 1986; Maltz, 1984). Dichotomous measures are considered to be over-simplified;

their use implies that there are no degrees of success or failure. Conversely, if a continuous measure is used, the assumption that low-risk offenders will have longer periods of violation-free time than high-risk offenders needs to be empirically tested (Eaglin & Lombard, 1981). Related to this point is the finding that numerous offenders do not convert to non-criminal behaviour in a single step. Instead, they progress in a stepwise series from serious offences to less serious offences to no contact with the law. As Moberg and Ericson (1972) stated:

> ... the typical rehabilitation process for criminal offenders seems to involve a series of gradual steps away from their past levels and types of criminalistic behaviour and toward law-abiding behaviour (p. 51).

In spite of the arguments in favour of a continuous measure, several studies have found that a dichotomous measure yields predictions that are as good or better (Burden, 1994; Eaglin & Lombard, 1981, 1982; Wormith & Goldstone, 1984). One explanation for this finding has been suggested by Maltz (1984). As he pointed out, time to reincarceration is the sum of several time intervals which include the following: (a) release to arrest, (b) arrest to a hearing, (c) a hearing to a trial (if there

is a trial), (d) a trial to sentencing, and (e) sentencing to reincarceration. Release to arrest is the only interval that reflects an offender's behaviour; the others reflect the behaviour of the criminal justice system. Hence, much of the variability in the continuous measure may simply be noise.

Both dichotomous and continuous criteria are used in the present study. Using both criteria makes it possible to compare the two measures to determine which provides a more accurate assessment of recidivism. As well, the assumption that low-risk offenders have longer periods of violation-free time than high-risk offenders can be tested. Thus, an offender is classified as a recidivist or non-recidivist, and if he is classified as a recidivist, the length of violation-free time, measured in days, is also recorded.

2.3 Length of the Follow-Up Period

The final issue that needs to be clarified is the length of time in the follow-up period. Studies have used one-year follow-ups (Bonta & Motiuk, 1985, 1987, 1990; Motiuk et al., 1986; Motiuk et al., 1992), two-year follow-ups (Gendreau et al., 1980; Gottfredson & Gottfredson, 1980; Gottfredson, Wilkins, & Hoffman, 1978; Hoffman, 1983), or follow-up periods of variable length (Andrews, Kiessling,

Robinson, & Mickus, 1986; Benda, 1987; Van Voorhis, 1988; Wright et al., 1984). Maltz (1984) stated that the one-year follow-up period has been most frequently used and a one-year follow-up was originally planned but because an adequate sample could not be obtained, a six-month follow-up was chosen in order to have scores for as many participants as possible. The starting date is the day of release. For instance, if an inmate was released on March 1, 1992, the follow-up would proceed until August 30, 1992. Offenders who have remained out of prison for at least six months are classified as non-recidivists.

CHAPTER 3

Method

3.1 Participants

Three correctional institution populations were examined: the West Coast Correctional Centre, Her Majesty's Penitentiary, and the Labrador Correctional Centre. The original intention was to obtain from institutional records a random sample of 500 male offenders who had been assessed using the Security Rating and Inmate Risk Assessments. However, this number was not attained for several reasons. Although the assessments were available for use in November 1992, several classification officers used the assessments only sporadically until May 1994. Starting in May 1994 classification officers were required to document, on monthly logs, offenders and their assessment scores. This resulted in the assessments being completed on all eligible inmates. A second reason why the intended sample could not be obtained applies to the Inmate Risk Assessment only. In November 1994, use of the Inmate Risk Assessment was stopped. With the onset of the Electronic Monitoring System in St. John's, a validated instrument was needed to determine which inmates were eligible to participate in the program. Because the Inmate Risk Assessment had not been validated, the classification officers were told to use the Wisconsin Probation Assessment, which had been validated for Newfoundland.

3.2 Data Collection

Inmates' scores on the Security Rating and the Inmate Risk Assessments were drawn from the institutional files. The items included on the assessments represent the predictor variables. Two dependent variables were measured which represent the recidivism criterion. The first measure was whether or not the participants were reincarcerated during the six-month follow-up period; the second measure was the number of violation-free days. A score of 183 was used for the non-recidivists.

An offender may be reincarcerated in a different provincial correctional institution from the previous one. Hence, all inmates' criminal records were accessed via the Canadian Criminal Justice System (CCJS). Thus, verification of provincial incarceration during the follow-up period was possible. Nonnumeric variables such as the identity of the correctional institution were coded using dummy coding (Keppel & Zedeck, 1989).

3.3 Analyses

All analyses were conducted for each assessment separately. The first step in the evaluation was to determine the number of offenders who fell into the three risk and need categories and to calculate, within each category, the percentage of offenders who recidivated. From

these figures, the overall violation rate was calculated. In the present study, the violation rate is the percentage of offenders who recidivated within six months of their release. For research purposes, the ideal base rate would be 50%, but this rarely occurs in practice. The more the base rate deviates from 50%, the less useful any prediction instrument will be (Copas & Tarling, 1986; Gabor, 1986; Gottfredson, 1987; Hanley, 1979). However, Simon (1971) suggests that prediction instruments are still useful when the base rate is moderate, specifically, in the 30% to 70% range. In an attempt to obtain a base rate within this range, the definition of recidivism should be broad (e.g., return to prison) as recommended by Bonta and Motiuk (1985). Using more specific definitions can result in difficulties associated with predicting rare events. Chi-square tests were conducted to determine if the failure rates significantly differed across inmates at different levels of risk and need.

Intercorrelations among the items on the assessments and Cronbach's alpha were calculated to determine the reliability of the instruments.

To determine the validity of the instruments, total instrument scores were correlated with the criteria. Specifically, the Security Rating Assessment total scores were correlated with the dichotomous and continuous measures

of recidivism. The same analyses were repeated using the Inmate Risk Assessment total scores.

The final analysis that was conducted ascertained the degree of overlap between the Security Rating and Inmate Risk Assessments. The correlation between the total risk and need scores was calculated.

CHAPTER 4

Results

The numbers of inmates at each institution who completed one or both assessments are shown in Table 4.1. Approximately three times as many Security Rating Assessments were obtained in comparison to Inmate Risk Assessments. Recall that the Security Rating Assessment was completed on every inmate except in cases of parole revocations, intermittent sentences, and remands. In contrast, the Inmate Risk Assessment was completed only on inmates who received a sentence of 93 days or longer, thus excluding those serving intermittent sentences and those incarcerated for parole revocations.

The smallest sample size was obtained at the Labrador Correctional Centre. In comparison to the West Coast Correctional Centre and Her Majesty's Penitentiary, the Labrador Correctional Centre does not have a high turnover rate and the institution cannot house as many inmates.

4.1 Recidivism Rates

Overall, 132 (18.57%) of the 711 inmates were recidivists. The recidivists' number of violation-free days ranged from 1 to 181 days (the maximum possible was 182

Table 4.1

Number of Inmates on Whom the Security Rating and Inmate Risk Assessments were Completed at each Institution

Institution	Security Rating Assessment	Inmate Risk Assessment	Both Assessments	Total Sample
West Coast Correctional Centre	213	144	144	213
Labrador Correctional Centre	89	44	44	89
Her Majesty's Penitentiary	381	45	17	409
Total	683	233	205	711

days) with a mean of 91 days (*SD* = 55.73)[1].

Table 4.2 shows the recidivism rate for each institution separately. The recidivism rates were significantly different across institutions, $\chi^2(2, N = 711) = 13.66$, $p < .05$. The three follow-up comparisons were also significant. The recidivism rate at the West Coast Correctional Centre was lower than the rate at either the Labrador Correctional Centre, $\chi^2(1, N = 302) = 13.66$, $p < .05$, or Her Majesty's Penitentiary, $\chi^2(1, N = 622) = 6.45$, $p < .05$. The recidivism rate at Her Majesty's Penitentiary was lower than that at the Labrador Correctional Centre, $\chi^2(1, N = 498) = 3.84$, $p < .05$.

The mean number of violation-free days for the recidivists was 100 days at the West Coast Correctional Centre, 81 days at the Labrador Correctional Centre, and 92 days at Her Majesty's Penitentiary. These means were not significantly different, $F(2, 131) = 0.79$, $p > .05$.

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1. A score of 183 signified that an inmate was a non-recidivist. Therefore, the maximum number of violation-free days a recidivist could have was 182 days.

Table 4.2

Percentage of Recidivists at each Institution

Institution	Total Number of Inmates	% of Recidivists
West Coast Correctional Centre	213	11.74
Labrador Correctional Centre	89	29.21
Her Majesty's Penitentiary	409	19.80

4.1.1 Recidivism Rates Across Security Rating Levels

Despite the lack of variability in the number of inmates at each security level across institutions as well as within institutions, chi-square tests were conducted to determine if the recidivism rates differed across the security levels.

Table 4.3 shows the number of recidivists across institutions and within institutions for each security rating level. Across all institutions, there were fewer recidivists at the minimum security level (17.8%) than at the medium security level (32.4%), $\chi^2(1, N = 127) = 4.92$, $p < .05$. Although a greater number of medium security inmates were recidivists, their mean number of violation-free days was slightly higher than it was for minimum security inmates, 96 vs. 90 days respectively. This was not a significant difference, $F(1, 126) = 0.111$, $p > .05$.

Recidivism rates across the security levels were also examined for each institution. At the West Coast Correctional Centre a comparison was not possible because the 25 recidivists were all in the minimum security level.

At the Labrador Correctional Centre, there were fewer recidivists at the minimum security level (23.38%) than at the medium security level (66.67%), $\chi^2(1, N = 26) = 9.41$, $p < .05$.

Table 4.3

Recidivism Rates for each Security Level for each Institution

	Security Level					
	Minimum		Medium		Maximum	
Institution	n	%	n	%	n	%
West Coast Correctional Centre	25	11.85	0	0	--	--
Labrador Correctional Centre	18	23.38	8	66.67	--	--
Her Majesty's Penitentiary	72	20.17	4	17.39	0	0
Total	115	17.83	12	32.43	0	0

Note. No inmate had a maximum security rating at the West Coast Correctional Centre or Labrador Correctional Centre and one inmate was maximum security at Her Majesty's Penitentiary.

At Her Majesty's Penitentiary, 72 of the 357 inmates (20.17%) in the minimum security level and 4 of the 23 inmates (17.39%) in the medium security level were recidivists. This was not a significant difference, $\chi^2(1, N = 76) = 0.10$, $p > .05$.

It should be noted that the small number of maximum security inmates does not reflect a deficiency in the sampling but rather, the nature of the institutions that were studied.

4.1.2 Recidivism Rates Across Inmate Risk Levels

To determine whether there were significant differences in recidivism across risk levels within institutions and combined samples, chi-square tests were conducted.

Table 4.4 shows the number of recidivists across institutions and within institutions for each inmate risk level. Across institutions, no low-risk inmates, 15 of the 87 (17.24%) medium-risk inmates, and 27 of the 114 (23.68%) high-risk inmates were recidivists. This was a significant difference, $\chi^2(2, N = 233) = 9.54$, $p < .05$. Two of the follow-up comparisons were significant. The recidivism rates were significantly different between the low and medium and low and high-risk levels, $\chi^2(1, N = 119) = 6.31$, $p < .05$ and $\chi^2(1, N = 146) = 9.30$, $p < .05$ respectively. However, the recidivism rates at the medium and high-risk categories were

Table 4.4

Recidivism Rates for each Risk Level for each Institution

	Risk Level					
	Low		Medium		High	
Institution	n	%	n	%	n	%
West Coast Correctional Centre	0	0	6	10.00	12	19.05
Labrador Correctional Centre	0	0	5	55.56	9	31.03
Her Majesty's Penitentiary	0	0	4	22.22	6	27.27
Total	0	0	15	17.24	27	23.68

not significantly different, $\chi^2(1, N = 201) = 1.24$, $p > .05$.

The mean number of violation-free days for the medium and high-risk recidivists was 75 and 96 days respectively. This was not a significant difference, $F(1, 41) = 1.29$, $p > .05$.

Recidivism rates across the inmate risk levels were also examined for each institution separately. At the West Coast Correctional Centre, 6 of the 60 inmates (10%) at the medium-risk level and 12 of the 63 inmates (19.05%) at the high-risk level were recidivists. This was a significant difference, $\chi^2(2, N = 144) = 5.81$, $p < .05$. Follow-up comparisons showed that the significant difference is attributable to the recidivism rates of the low and high-risk categories, $\chi^2(1, N = 84) = 4.67$, $p < .05$. There were no significant differences between the low and medium-risk categories and the medium and high-risk categories, $\chi^2(1, N = 81) = 2.27$, $p > .05$ and $\chi^2(1, N = 123) = 2.01$, $p > .05$ respectively.

At the Labrador Correctional Centre, 5 of the 9 inmates (55.56%) in the medium-risk level and 9 of the 29 inmates (31.03%) in the high-risk level were recidivists. This was not a significant difference, $\chi^2(2, N = 144) = 5.15$, $p > .05$. Low, medium, and high-risk inmates were equally likely to recidivate.

At Her Majesty's Penitentiary, 4 of the 18 inmates

(22.22%) in the medium-risk level and 6 of the 22 inmates (27.27%) in the high-risk level were recidivists. This was not a significant difference, $\chi^2(2, N = 45) = 1.75$, $p > .05$. Low, medium, and high-risk inmates were equally likely to recidivate.

4.2 Relationship Between the Security Rating and Inmate Risk Assessments

The correlation between scores on the Security Rating Assessment and the Inmate Risk Assessment showed that there was significant overlap between the two instruments, $r(203) = .53$, $p < .05$. In addition, there were no significant differences in this regard among the three institutions, $\chi^2(2, N = 203) = 2.11$, $p > .05$.

4.3 Security Rating Levels

Table 4.5 shows that across the three institutions, the majority of inmates (94.44%) were rated as minimum security. Security rating scores ranged from 0 to 25 with a mean of 8 ($SD = 4.16$). An examination of the institutions separately showed that 99.06%, 86.52%, and 93.70% of the inmates were minimum security at the West Coast Correctional Centre, Labrador Correctional Centre, and Her Majesty's Penitentiary respectively. Significantly more inmates were minimum security than medium security, $\chi^2(2, N = 682) = 19.91$,

Table 4.5

Number of Inmates at each Institution at the Minimum, Medium, and Maximum Security Level as Determined by the Security Rating Assessment (N = 683)

	Security Level					
	Minimum		Medium		Maximum	
Institution	n	%	n	%	n	%
West Coast Correctional Centre	211	99.06	2	<1	0	0
Labrador Correctional Centre	77	86.52	12	13.48	0	0
Her Majesty's Penitentiary	357	93.70	23	6.04	1	<1
Total	645	94.44	37	5.42	1	<1

$p < .05$.

The mean score on the Security Rating Assessment was 6.69 at the West Coast Correctional Centre, 8.39 at Her Majesty's Penitentiary, and 9.88 at the Labrador Correctional Centre. This was a significant difference, $F(2,680) = 22.72$, $p < .05$. The three follow-up comparisons were significant. The mean score was significantly larger at the Labrador Correctional Centre than the West Coast Correctional Centre, $t(680) = -6.27$, $p < .05$, and Her Majesty's Penitentiary, $t(680) = 3.13$, $p < .05$. As well, the mean score at Her Majesty's Penitentiary was significantly larger than at the West Coast Correctional Centre, $t(680) = -4.95$, $p < .05$.

4.4 Inmate Risk Levels

Table 4.6 shows that across the three institutions, approximately half of the inmates (48.93%) were at the high-risk level followed by the medium-risk (37.34%) and low-risk level (13.73%). The inmate risk scores ranged from 0 to 45 with a mean of 19 ($SD = 9.69$).

Within each institution, the same pattern emerged. At the West Coast Correctional Centre, 43.75% of the inmates were at the high-risk level. The risk scores ranged from 0 to 39 with a mean of 18 ($SD = 8.90$). At the Labrador Correctional Centre, 65.91% of the inmates were in the

Table 4.6

Number of Inmates at each Institution at the Low, Medium, and High-Risk Level as Determined by the Inmate Risk Assessment (N = 233)

	Inmate Risk Level					
	Low		Medium		High	
Institution	n	%	n	%	n	%
West Coast Correctional Centre	21	14.58	60	41.67	63	43.75
Labrador Correctional Centre	6	13.64	9	20.45	29	65.91
Her Majesty's Penitentiary	5	11.11	18	40.00	22	48.89
Total	32	13.73	87	37.34	114	48.93

high-risk category. The scores ranged from 0 to 45 with a mean of 22 (*SD* = 11.63). At Her Majesty's Penitentiary, 48.89% of the inmates were at the high-risk level. At this institution the scores ranged from 0 to 40 with a mean of 19 (*SD* = 9.29). There was no significant difference among the institutions in the number of inmates in each risk level, $\chi^2(4, N = 233) = 7.85$, $p > .05$.

There was a significant difference between the mean scores on the assessment across the institutions, $F(2,230) = 4.56$, $p < .05$. Follow-up comparisons showed that this significant difference is attributable to the difference between the West Coast Correctional Centre and Labrador Correctional Centre, $t(230) = -3.01$, $p < .05$. There were no significant differences between the West Coast Correctional Centre and Her Majesty's Penitentiary, and the Labrador Correctional Centre and Her Majesty's Penitentiary, $t(230) = -0.93$, $p > .05$ and $t(230) = 1.70$, $p > .05$ respectively.

4.5 Reliability and Validity Analyses

Before proceeding with the reliability and validity analyses, it should be noted that throughout the analyses, the correlations obtained at the three institutions were converted to z-scores and tests for significant differences were conducted (Hays, 1988). In cases where significant differences were not found, a single correlation was

calculated using the combined samples.

4.5.1 Reliability of the Security Rating Assessment

4.5.1.1 All samples combined.

Table 4.7 shows the intercorrelations among the items on the Security Rating Assessment. The value of Cronbach's alpha was .39 (N = 429).

4.5.1.2 Differences among the institutions.

Table 4.8 shows the significant differences among the three institutions. Although ten of the 36 chi-squares (27.78%) were significant, there is no overall connection among them. Therefore, no compelling interpretation of the differences can be offered.

4.5.2 Validity of the Security Rating Assessment

4.5.2.1 All samples combined.

Unlike the dichotomous criterion, there were no significant differences among the institutions using the continuous criterion, number of violation-free days, $\chi^2(2, N = 683) = 3.19$, $p > .05$. However, the correlation between the total score and the continuous criterion using the combined samples was significant, $r(683) = -.19$, $p < .05$. Inmates who had higher security rating scores had fewer violation-free days.

Table 4.7

Intercorrelations of the Items on the Security Rating Assessment for the Three Samples

Item	Q1 (n = 683)	Q2 (n = 683)	Q3 (n = 683)	Q4 (n = 682)	Q5 (n = 683)
Q1. Nature of outstanding charges/crown appeals	--	.02	.02	.09	.06
Q2. Severity of present offence	.02	--	.34*	.12*	.08*
Q3. Length of sentence	.02	.34*	--	.15*	.09*
Q4. Nature of prior offences	.09*	.12*	.15*	--	.08*
Q5. Record of escapes or attempts	.06	.08*	.09*	.08*	--
Q6. History of violence	.02	.07	.09*	.32*	.01
Q7. Age	.01	.17*	.11*	.13*	.04
Q9. Pre-trial status	.04	.21*	.13*	.14*	.01
PSY. Psychiatric stability	-.05	-.01	.04	-.01	-.03

(table continues)

Table 4.7 (continued)

Intercorrelations of the Items on the Security Rating Assessment for the Three Samples

Item	Q6 (n = 683)	Q7 (n = 683)	Q9 (n = 683)	PSY (n = 429)
Q7. Age	-.15*	--	.08*	-.09
Q9. Pre-trial status	.03	.08	--	-.10*
PSY. Psychiatric stability	-.08	-.09	-.10*	--

*p < .05.

Table 4.8

Differences Among the Institutions on the Security Rating Intercorrelations

Items	West Coast Correctional Centre	Labrador Correctional Centre	Her Majesty's Penitentiary	χ^2
Nature of outstanding charges/crown appeals and record of escapes or attempts	.22* (n = 213)	-.06 (n = 89)	.01 (n = 381)	8.030*
Severity of present offence and length of sentence	.42* (n = 213)	.47* (n = 89)	.28* (n = 381)	7.674*
Severity of present offence and nature of prior offences	.30* (n = 212)	.04 (n = 89)	.03 (n = 381)	11.969*
Severity of present offence and record of escapes or attempts	-.05 (n = 213)	-.05 (n = 89)	.19* (n = 381)	9.445*

(table continues)

Table 4.8 (continued)

Differences Among the Institutions on the Security Rating Intercorrelations

Items	West Coast Correctional Centre	Labrador Correctional Centre	Her Majesty's Penitentiary	χ^2
Length of sentence and nature of prior offences	.32* (n = 212)	.21* (n = 89)	.07 (n = 381)	10.312*
Length of sentence and pre-trial status	.41* (n = 213)	.15 (n = 89)	.14* (n = 381)	15.092*
Nature of prior offences and pre-trial status	.38* (n = 212)	.13 (n = 89)	-.05 (n = 381)	30.226*
History of violence and pre-trial status	.18* (n = 213)	-.13 (n = 89)	-.06 (n = 381)	9.937*
Age and pre-trial status	.16* (n = 213)	-.12 (n = 89)	-.07 (n = 381)	8.683*

*$p < .05$.

4.5.2.2 Differences among the institutions.

There was a significant difference between the institutions using the dichotomous criterion, recidivist vs. non-recidivist, $\chi^2(2, N = 683) = 7.20$, $p < .05$. At the Labrador Correctional Centre and Her Majesty's Penitentiary, inmates who had higher security rating scores were recidivists. The correlations were $r(89) = .38$, $p < .05$ and $r(381) = .17$, $p < .05$ respectively. The correlation between the total score and the dichotomous criterion was not significant at the West Coast Correctional Centre, $r(213) = .08$, $p > .05$.

4.5.3 Reliability of the Inmate Risk Assessment

4.5.3.1 All samples combined.

Of the 78 correlations, 6 correlations (7%) were significant. Since one would expect 5 percent to be significant by chance alone, it seems appropriate to conclude that there were few, if any, real differences among the three institutions. The correlations based on the three samples are presented in Table 4.9. Cronbach's alpha of .44 ($N = 224$) is slightly higher than the one calculated for the Security Rating Assessment.

Table 4.9

Intercorrelations of the Items on the Inmate Risk Assessment for the Three Samples

Item	Q1 (n = 233)	Q2 (n = 233)	Q3 (n = 233)	Q4 (n = 233)	Q5 (n = 233)	Q6 (n = 233)
Q1. Attitude	--	.20*	.11	.30*	.20*	.35*
Q2. Alcohol usage	.20*	--	.03	.09	-.06	-.05
Q3. Other drug involvement	.11	.03	--	.23*	-.07	.03
Q4. Associates/ companions	.30*	.09	.23*	--	.19*	.25*
Q5. Living arrangements	.20*	-.06	-.07	.19*	--	.30*
Q6. Self-management skills	.35*	-.05	.03	.25*	.25*	--
Q7. Interpersonal skills	.18*	.06	.09	.12	.30*	.18*
Q8. Early family of origin	.06	.05	.05	.10	.20*	.10

(table continues)

Table 4.9 (continued)

Intercorrelations of the Items on the Inmate Risk Assessment for the Three Samples

Item	Q1 (n = 233)	Q2 (n = 233)	Q3 (n = 233)	Q4 (n = 233)	Q5 (n = 233)	Q6 (n = 233)
Q9. Age at first conviction	.28*	.09	.03	.40*	.16*	.29*
Q10. Number of prior periods of probation/ parole supervision	.18*	.24*	-.14*	.12	.15*	.19*
Q11. Number of prior breaches of probation/ parole/temporary leave of absence violations	.23*	.30*	-.09	.15*	.08	.21*
Q12. Number of prior convictions for indictable offences	.19*	.15*	-.05	.11	.06	.22*
Q13. Prior or current convictions for spousal /sexual assault	-.01	.26*	-.13*	-.12	-.07	-.05

(table continues)

Table 4.9 (continued)

Intercorrelations of the Items on the Inmate Risk Assessment for the Three Samples

Item	Q7 (n = 233)	Q8 (n = 233)	Q9 (n = 230)	Q10 (n = 232)	Q11 (n = 232)	Q12 (n = 227)	Q13 (n = 232)
Q8. Early family of origin	.37*	--	.09	.27*	.24*	.19*	.27*
Q9. Age at first conviction	.04	.09	--	.26*	.27*	.24*	-.08
Q10. Number of prior periods of probation/parole supervision	.03	.27*	.26*	--	.71*	.42*	.18*
Q11. Number of prior breaches of probation/parole/ temporary leave of absence violations	.11	.24*	.27*	.71*	--	.49*	.05

(table continues)

Table 4.9 (continued)

Intercorrelations of the Items on the Inmate Risk Assessment for the Three Samples

Item	Q7 (n = 233)	Q8 (n = 233)	Q9 (n = 230)	Q10 (n = 232)	Q11 (n = 232)	Q12 (n = 227)	Q13 (n = 232)
Q12. Number of prior convictions for indictable offences	.04	.19*	.24*	.42*	.49*	--	.03
Q13. Prior or current convictions for spousal/ sexual assault	.16*	.27*	-.08	.18*	.05	.03	--

*p < .05.

4.5.4 Validity of the Inmate Risk Assessment

4.5.4.1 All samples combined.

A comparison of the correlations calculated at each institution showed no significant differences on the dichotomous criterion, recidivist vs. non-recidivist, $\chi^2(2, N = 233) = 0.15$, $p > .05$ or the continuous criterion, number of violation-free days, $\chi^2(2, N = 233) = 0.04$, $p > .05$. The correlations between the total score and dichotomous and continuous criteria based on the combined samples were both significant, $r(233) = .23$, $p < .05$ and $r(233) = -.16$, $p < .05$, respectively. Inmates who had higher risk scores were more often recidivists and had fewer violation-free days.

CHAPTER 5

Discussion

Overall, the Security Rating Assessment and Inmate Risk Assessment were reasonably reliable and demonstrated predictive validity. Both the dichotomous and continuous criteria of recidivism were predicted at statistically significant levels despite the fact that recidivism across the combined samples was relatively infrequent (18.57%).

The low rate of recidivism may be due to several factors. First, the follow-up period used was six months instead of one year as was originally intended. A six month follow-up may not be long enough to determine whether an inmate will recidivate. As Maltz (1984) pointed out, the time interval from release to reincarceration can be long due to several processes involved: arrest, a hearing, a trial (if there is one), sentencing, and reincarceration. Second, the recidivism rate may reflect the actual characteristics of the population. If so, it would indicate that incarceration may be a deterrent to further criminal behaviour. Conversely, the recidivism rate may reflect sampling variability. Because the sample used in the present research was not random, it may be that the sample is not representative of the population and has an unusually low recidivism rate.

There were significant differences among the institutions in recidivism rates. The Labrador Correctional Centre had the highest recidivism rate (29.21%), followed by

Her Majesty's Penitentiary (19.80%), and the West Coast Correctional Centre (11.74%). Initially it was thought that the unemployment rate could be a contributing factor. However, upon investigation, this does not appear to be the case. The census divisions for Newfoundland are not split into Western, Eastern, and Central regions so direct comparisons are not possible. However, it does appear that Labrador has the lowest unemployment rate, 19.7%, compared to the Eastern region of Newfoundland, 22.9%, and the Western region, approximately 32% (Statistics Canada, 1994). Annual income also does not help explain why the recidivism rate is higher in Labrador. The average income is the highest in Labrador, $30,226, compared to $25,356 in Eastern Newfoundland, and approximately $21,368 in Western Newfoundland. Another possibility which cannot be confirmed is the availability of support services for offenders upon release. There may be fewer services available for offenders in Labrador or it may be that offenders do not use the services that are available.

The analyses were conducted for each institution separately to determine if the reliability and validity of the assessments were the same across populations. Few significant differences were found among the institutions and those that were found pertained to the Security Rating Assessment, not the Inmate Risk Assessment. Therefore, for

several analyses, the three samples were combined.

5.1 Reliability of the Assessments

Both the Security Rating and Inmate Risk Assessments were moderately reliable. Cronbach's alpha was .39 for the Security Rating Assessment and .44 for the Inmate Risk Assessment.

For the purposes of the present study, reliability was not the most crucial issue. The items on each assessment do not presume to measure a single dimension or construct. Instead, the items are heterogenous and represent possible predictors of recidivism. The intercorrelations ranged from .01 to .34 (N = 683) on the Security Rating Assessment and from .03 to .49 (N = 232) on the Inmate Risk Assessment. The primary purpose of the research was to determine how well the items together predicted the two criteria of recidivism.

5.2 Validity of the Assessments

There were two indices of the validity of the instruments. One involved the recidivism rates across the different categories or levels of the Security Rating and Inmate Risk Assessments. The second involved the correlations between the total scores on the two instruments and the two criteria of recidivism.

5.2.1 Recidivism Rates Across Security Rating Levels

A comparison involving maximum-risk was not possible because only one inmate was classified as a maximum-risk. However, across institutions, a greater number of recidivists were medium-risk than minimum-risk which was expected. This pattern was also found at the Labrador Correctional Centre. There was no significant difference in the medium-risk and minimum-risk inmates' number of violation-free days. Thus, the assumption put forth by Eaglin and Lombard (1981) and Moberg and Ericson (1972) that low-risk offenders will have longer periods of violation-free time than higher risk offenders was not supported in the present research.

At the West Coast Correctional Centre and Her Majesty's Penitentiary, medium security inmates were no more likely to recidivate than were minimum security inmates. This may be attributed to the fact that almost all inmates at these institutions were classified as minimum security; 99.06% at the West Coast Correctional Centre and 93.70% at Her Majesty's Penitentiary.

When the Security Rating Assessment was developed, there were no data or any indication of the percentage of offenders in a specific security level. As previously discussed, 94.44% of the inmates were minimum security. Thirty-seven inmates (5.42%) were medium security and 1

(<1%) was maximum security. When the assessment was developed it was anticipated that "many of the offenders may be over classified and not appropriately placed within the most suitable facility or housing area" (Adult Corrections Division, 1991, p. 35). In light of the fact that 94.44% of the inmates were rated as minimum security, over classification was not a problem.

Inmates' security level is of primary importance in determining the appropriate institution in which to house them. Based on the finding that the majority of inmates were classified as minimum security, they could be housed in a number of institutions such as Her Majesty's Penitentiary, the West Coast Correctional Centre, Labrador Correctional Centre, Salmonier Correctional Institute, Bishop Falls Correctional Centre, or the Clarenville Correctional Centre, all of which are minimum/medium security institutions. Factors in addition to security level have to be considered in determining where to place an inmate.

In practice, it may be that most of the inmates are incarcerated in the institution closest to their place of residence with the exception of inmates who have special circumstances. For example, an inmate convicted of sexual assault in Corner Brook would not be incarcerated at the West Coast Correctional Centre because, as a rule, the institution does not house this type of offender. He would

instead be incarcerated at Her Majesty's Penitentiary which is equipped to house this type of inmate.

5.2.2 Recidivism Rates Across Inmate Risk Levels

Across institutions, the Inmate Risk Assessment discriminated between the low and high-risk categories and the low and medium-risk categories. A greater number of recidivists were high or medium-risk than low-risk. However, the assessment did not discriminate between the medium and high-risk categories. Adjustments to the cut-off values of the medium and high-risk categories are needed.

At the West Coast Correctional Centre, the assessment discriminated between the low and high-risk categories only. At the Labrador Correctional Centre and Her Majesty's Penitentiary, the assessment did not discriminate among the three risk categories. However, this may be due to the small sample size. At the Labrador Correctional Centre and Her Majesty's Penitentiary, only 44 and 45 assessments were obtained respectively.

When the Inmate Risk Assessment was developed it was anticipated that 400 inmates would be classified in the first 12 months, and of these inmates, 53%, 22%, and 25% would be classified as minimum, medium, and maximum-risk respectively (Adult Corrections Division, 1991). These percentages are based on validated data from the St. John's

Community Corrections Branch (i.e., Probation). Due to the similarity of the population base and demographic area, the percentages were extrapolated to reflect the percentage of offenders in each risk category.

Neither assumption was verified in the present research. From the three institutions, 233 assessments had been completed from November 1992 to September 1994. As previously discussed, the assessments were not routinely completed by classification officers until they were required to document inmates' scores on the assessments beginning in May 1994.

It was also found that most of the inmates (48.93%) were classified as maximum-risk, not minimum-risk as anticipated. Minimum-risk inmates constituted only 13.73% of the population. It may be that the inmates are not as comparable to the St. John's Regional Office's Probation caseload as initially thought. Offenders on probation may not have been incarcerated and their needs and problems may have differed from those offenders who were incarcerated.

5.2.3 Criteria-To-Total Score Correlations of the Security Rating Assessment

Although the Security Rating Assessment was designed as a descriptive instrument, it predicted both the dichotomous and continuous measures of recidivism. Inmates who had

higher security rating scores were more likely to be recidivists and had fewer violation-free days.

There was an exception however. The total score did not predict the dichotomous measure of recidivism at the West Coast Correctional Centre. This was the only case where the assessment was not valid. This finding is probably attributable to the fact that 99.06% of the inmates were minimum security, thus, discrimination was not possible.

At the Labrador Correctional Centre, the correlation between the total score and the dichotomous criterion was $r(89) = .38$. An analysis using Rosenthal and Rubin's binomial effect size display (BESD) (as cited in Rosenthal, 1984) shows that an r of .38, accounting for "only" 14.44% of the variance is associated with an increase in predictive accuracy from 49% to 69%, hardly a trival effect. At Her Majesty's Penitentiary, the correlation of $r(381) = .17$ which accounts for 2.89% of the variance improves the accuracy of prediction from 42% to 59%.

The correlation between the continuous criterion and the total score yielded a correlation of $r(683) = -.19$. Although it accounts for only 3.61% of the variance, accuracy of prediction is improved from 41% to 60% by using the assessment.

Although the percentage of variance accounted for is low, from the point of view of practical usefulness, the

accuracy of predicting recidivism is improved by using the Security Rating Assessment.

5.2.4 Criteria-To-Total Score Correlations of the Inmate Risk Assessment

As was found with the Security Rating Assessment, the Inmate Risk Assessment also predicted the dichotomous and continuous measures of recidivism. Inmates who had higher risk scores were more likely to be recidivists and had fewer violation-free days.

The total score accounted for 5.29% of the variance in the dichotomous criterion. The improvement in the accuracy of prediction increased from 39% to 62%, a large difference. Although the total score accounted for 2.56% of the variance in the continuous criterion, the accuracy of prediction increased from 42% to 58%. Like the Security Rating Assessment, more accurate predictions of recidivism can be made using the Inmate Risk Assessment than would be possible without the assessment.

The Inmate Risk Assessment did not predict the continuous criterion any better than the dichotomous criterion of recidivism (test statistic = .78, $p < .05$). This result is in agreement with other studies which have found that a dichotomous measure yields predictions that are as good or better than continuous measures (Burden, 1994;

Eaglin & Lombard, 1981, 1982; Wormith & Goldstone, 1984).

5.3 Problems in and Limitations of the Research

Two main problems were experienced during the research. The first dealt with the sample sizes. All the files were searched for inmates who had been incarcerated at the West Coast Correctional Centre and Labrador Correctional Centre since November 1992. This was possible because logs are kept which record who is admitted and when. However, all the files were not located because, in the past, when inmates were transferred to another institution, their files were also transferred. As a result, files and assessments were not obtained for inmates who were transferred to the Clarenville or Bishop Falls Correctional Centres.

Obtaining all the inmates' files was not possible at Her Majesty's Penitentiary because logs are not kept as they are at the other two institutions. At this institution, assistance of the classification officers was vital. Approximately 300 assessments were given to me by classification officers who had copies in their offices. To obtain additional assessments, the monthly logs that were started in May 1994 by the classification officers were used. Approximately 75 of the assessments located using the monthly logs could not be used because the inmates were still incarcerated or had not been released for six or more

months. Although these assessments could not be used, many of the files contained assessments completed during a previous incarceration and these assessments were used.

There were also approximately 100 files that should have contained assessments but did not. One explanation is that the inmate received a short sentence (e.g., two weeks) and was released before the Security Rating Assessment could be completed. However, this cannot account for all of the missing assessments. It is possible that some of the missing assessments were in the classification officers' offices to which I did not have access.

Due to the fact that not as many assessments were obtained as were expected, the original follow-up period of one year could not be used. The sample sizes for the Inmate Risk Assessment are small for the Labrador Correctional Centre and Her Majesty's Penitentiary using the six month follow-up period. A higher recidivism rate may have been obtained if the follow-up period had been extended.

Despite the difficulties experienced while collecting the data, the Security Rating Assessment and the Inmate Risk Assessment predicted the dichotomous and continuous criteria of recidivism. As Motiuk (1993) stated "the amount of variance left unexplained still outweighs that which can be explained" (p. 14) but better predictions can be made with the assessments than without them. The percentage of

variance explained ranged from 2.56% to 14.44%. However by using the assessments there was an average increase of 19% in the predictive accuracy of recidivism using the Security Rating Assessment and a 20% increase using the Inmate Risk Assessment. Therefore, the instruments appear to have considerable discriminating power and are clearly worth using.

One reason for finding that more variance is left unexplained than explained was put forth by Klein and Caggiano (1986). They state that attempts to predict recidivism on the basis of an offender's background, personal characteristics, and past criminal record assume that these are the major determinants of future behaviour. These factors are no doubt important but recidivism may be more determined by factors such as employment opportunities, the offenders' cultural environment, and the quality of the offender's support systems which cannot easily be measured.

Klein and Caggiano (1986) surveyed 29 parole and 12 probation guidelines to determine what factors are most often used to predict recidivism. Of the parole instruments examined, 75% included number of parole/probation revocations and severity of current offence, 50% included number of previous felony convictions, severity of prior offences, current age, and drug use, and 25% included age at first conviction, length of current sentence, living

arrangements, alcohol use, and escape history. Similarly, 75% of probation instruments used number of parole/probation revocations, age at first conviction, and drug use, 50% included severity of prior offences, and alcohol use, and 25% included family relationships, living arrangements, and associates/companions.

All of the aforementioned items are included on the Security Rating and Inmate Risk Assessments. A major strength of using multiple predictors is that assignment to the different levels of risk and need are based on a broad sampling of potential predictors of recidivism (Robinson & Porporino, 1989). However despite using multiple predictors, the majority of assessments explain a small percentage of the variance. Gottfredson and Gottfredson (1986), after extensive review of the literature on the prediction of criminal activity, found that the "proportion of criterion variance explained rarely exceeds 0.15 to 0.20; it is often lower" (p. 280). Even though it may seem that the effect is small and unimportant, the reporting of effect sizes can be made more intuitive and more informative using the BESD. It conveys the real-world importance and practical meaning of the results and gives a more useful and realistic assessment of how well the instruments are performing.

5.4 Future Research

There are several possibilities for future research. First, conducting the research using the original follow-up period of one year would determine if the recidivism rate is approximately the same as was found in the present research. The six month follow-up may have contributed to the finding of no significant difference in the recidivism rate among the medium and maximum-risk inmates on the Inmate Risk Assessment.

There may be a need to adjust the cut-off values for the minimum, medium, and maximum security levels. There was a disproportionate distribution of inmates in the three categories; 94.44% minimum-risk, 5.42% medium-risk, and < 1% maximum-risk. Although the assessment was developed to be descriptive not predictive, it did predict recidivism. A more comparable distribution of inmates in each category may aid in determining which factors discriminate between recidivists and non-recidivists.

There is also a need to improve the assessments in terms of classification and prediction. Although the assessments demonstrated predictive validity, the overall levels of prediction are low in absolute terms. The validity of the assessments may be improved by adjusting the cut-off values assigned to the categories as previously mentioned. Future research could also examine adjusting the weights

assigned to each item to improve the assessments' validity. As well, adding more items to each assessment may improve the assessments' reliability.

The present research dealt with a limited population. Although the assessments were available for use in November 1992, they were not used consistently until May 1994. As with all research it would have been helpful had larger samples been used to improve the reliability of the assessments. Unfortunately, in November 1994, the Inmate Risk Assessment was replaced by another assessment. Therefore, repeating the study using larger samples is not possible.

A major strength of the research which should be noted is the use of three institutions rather than a single one. As discussed in the Introduction, the inmate populations at each institution are different in many ways. This was the reason for examining the institutions separately. Only after finding no significant differences among the institutions on the critical dependant variables were the samples combined for analyses.

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APPENDIX A

Security Rating Assessment

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF JUSTICE
ADULT CORRECTIONS DIVISION
INSTITUTIONAL SERVICES BRANCH

SECURITY RATING ASSESSMENT

Name (Last, First, Middle)	Date Admitted (yr./mo./da.)	Birthdate (yr./mo./da.)

SECTION A -- SECURITY SCORING

		SCORE
1. Nature of Outstanding Charges/Crown Appeals	0 = None 1 = Lowest 3 = Low Moderate 5 - Moderate 7 = High 10 = Greatest	
2. Severity of Present Offence	1 = Lowest 3 = Low Moderate 5 - Moderate 7 = High 10 = Greatest	
3. Length of Sentence	0 = 0 to 4 months 1 = 4+ to 12 months 3 = 12+ to 18 months 5 = Over 18 months	
4. Nature of Prior Offences	0 = None 1 = Minor 3 = Moderate 5 = Serious	
5. Record of Escapes or Attempts	0 = None 3 = Minor 5 = Moderate 7 = High 10 = Greatest	
6. History of Violence	0 = None 3 = Minor 5 = Moderate 7 = High 10 = Greatest	
7. Age	0 = Over 22 years 2 = Under 22 years	
8. Security Sub-Total	Total of Items 1 through 7	
9. Pre-trial Status	0 = Not applicable 3 = Bail/Recog. Order	
10. Psychiatric Stability: ☐ Yes ☐ No	11. SECURITY TOTAL -- Subtract Item 9 from Item 8.	
12. Security Level	Min. = 0 to 15 points Med. = 16 to 24 points Max. = 25 points or more	

COMMENTS/OVERRIDE: _____

Placement Officer/Classification Staff Signature	Correctional Centre	Date (yr./mo./da.)

APPENDIX B

Inmate Risk Assessment

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF JUSTICE
ADULT CORRECTIONS DIVISION

INSTITUTIONAL SERVICES BRANCH
INMATE RISK ASSESSMENT

NAME: _____ D.O.B. _____

ADDRESS: _____

NEXT OF KIN: _____ TELEPHONE: _____

INSTITUTION: H.M.P. ___ S.C.I. ___ C.C.C. ___ B.F.C.C. ___

W.C.C.C. ___ N.L.C.C.W. ___ L.C.C. ___

LENGTH OF SENTENCE: _____

RELEASE DATE: _____

OFFENCE SUMMARY:

SPECIAL CONSIDERATIONS:

ASSIGNED TO: _____ DATE: _____

Score

1. **ATTITUDE**
   A. Positive, well motivated, responsible (0)
   B. Occasionally lacks insight, some departure from norms, potential for change (2)
   C. Irresponsible, anti-social, negative, not motivated to change (5)

2. **ALCOHOL USAGE**
   A. No interference with functioning (0)
   B. Some disruption of functioning (2)
   C. Serious disruption (5)

3. **OTHER DRUG INVOLVEMENT**
   A. No interference with functioning (0)
   B. Occasional substance abuse, some disruption in functioning (1)
   C. Continuous substance abuse, serious disruption, needs treatment (3)

4. **ASSOCIATES/COMPANIONS**
   A. Good influence, positive associations/companions (-1)
   B. No adverse associations/companions (0)
   C. Some negative companions and associations (2)
   D. Almost entirely anti-social associations (5)

5. **LIVING ARRANGEMENTS**
   A. No problems, entirely adequate and stable (-1)
   B. Minor or short term problems (0)
   C. Recurring/persistent problems (2)
   D. Major problems, transiency (4)

6. **SELF-MANAGEMENT SKILLS**
   A. Highly skilled, fully functional (-1)
   B. Adequate skills, normally employed (0)
   C. Low skills level, inadequate functioning (1)
   D. Few skills, severe dysfunction (2)

Score

7. **INTERPERSONAL RELATIONSHIPS**
   A. Entirely positive relationships (-1)
   B. Acceptable, no distinct dysfunction (0)
   C. Occasional dysfunction recurring stressors (1)
   D. Major dysfunctional relationships (2)

8. **EARLY FAMILY OF ORIGIN**
   A. Exceptionally stable and secure (-1)
   B. Average, no identified or specific problems (0)
   C. Significant ongoing problems (1)
   D. Extreme problems, highly unstable (2)

9. **AGE OF FIRST CONVICTION**
   A. 24 or older (0)
   B. 20 -23 (2)
   C. 19 or younger (3)

10. **NUMBER OF PRIOR PERIODS OF PROBATION/PAROLE SUPERVISION**
   A. none (0)
   B. 1 or more (3)

11. **NUMBER OF PRIOR BREACHES OF PROBATION/PAROLE/TLA - VIOLATIONS**
   A. none (0)
   B. 1 or more (3)

12. **NUMBER OF PRIOR CONVICTIONS FOR INDICTABLE OFFENSES**
   A. None (0)
   B. One (2)
   C. 2 or more (3)

13. **PRIOR OR CURRENT CONVICTIONS**
   A. Spousal Assault (15)
   B. Sexual Offence (15)

TOTAL

OFFICERS ASSESSMENT:

CASE PLAN

FOLLOW UP/ACTION TAKEN