

RECIDIVISM OF CRIMINAL PSYCHOPATHS
AFTER THERAPEUTIC COMMUNITY TREATMENT

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ABSTRACT

Official reconviction rates were examined for one hundred six male offenders participating in a Therapeutic Community treatment program at the Regional Psychiatric Centre in Saskatoon, Saskatchewan. Offenders were assessed by Hare's Revised Psychopathy Checklist (PCL-R, Hare, 1985a, 1991), and were divided into low, medium, and high psychopathy groups. The proportion of offenders reoffending within each PCL-R group, and survival analyses, indicated the high PCL-R group reoffended at a higher rate than the low PCL-R group on most measures of recidivism. These results are consistent with the view that psychopaths should be particularly resistant to treatment. However, because the high PCL-R group had a more extensive criminal history prior to treatment compared with the low PCL-R group, and there was no untreated control group, we cannot be sure treatment did not have an impact on subsequent rates of offending. Nonviolent recidivism was consistently related to the behavioural deviance component of the PCL-R, and less related to the interpersonal-affective component of the PCL-R, but the pattern of results for violent recidivism was less clear. A second major purpose of the study was to compare the predictive accuracy of the PCL-R against two standardized actuarial scales, the Statistical

Information On Recidivism (SIR; Nuffield, 1982), and the Salient Factor Score (SFS; Hoffman, 1983). Predictions of nonviolent recidivism by the PCL-R, SIR, and SFS were superior to predictions of violent recidivism, and depending on the measure of recidivism, different predictor scales were more accurate. For practical decision-making, the PCL-R was not able to predict recidivism beyond the contribution of the actuarial scales, as suggested by correlational and logistic regression analyses, Relative Improvement Over Chance statistics, and kappa coefficients. Limitations of the current study and areas for future research are considered in more detail in the thesis.

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LIST OF ABBREVIATIONS

FPS = Fingerprint Services
PCL-R = Revised Psychopathy Checklist (Hare, 1991)
RIOC = Relative Improvement Over Chance statistic (Loeber
& Dishion, 1983)
RPC = Regional Psychiatric Centre
SFS = Salient Factor Score (Hoffman, 1983)
SIR = Statistical Information On Recidivism scale
(Nuffield, 1982)

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1. INTRODUCTION

Substantial economic, political, and psychological costs are associated with crime. Annual expenditures for maintaining an inmate in a federal penitentiary, for example, exceed \$46,000 (Correctional Service of Canada, 1990a). Once incarcerated, some offender subgroups are particularly costly to maintain because they utilize more institutional resources (Hart & Hemphill, 1989). As well, the physical and psychological lives of many individuals may be irrevocably affected as a result of being victims of crimes, particularly crimes of a violent nature.

Only a small proportion of criminal offenders are characterized as extremely recidivistic, but this small fraction accounts for the majority of criminal offences committed. Mednick (1977), for example, estimates that around one percent of the general male population commits more than half of the offences. One subgroup of offender who commits disproportionately more crimes than other inmates is the psychopath (Hare & Jutai, 1983; Hare & McPherson, 1984b). They also violate institutional rules more frequently than nonpsychopaths, creating security concerns (Wong, 1984). As a result, ascertaining the rehabilitative efforts for psychopaths has great practical

significance: treatment evaluation of offenders in general and psychopaths in particular will help clinicians determine and promote more effective treatment strategies, thereby reducing the considerable social and financial costs associated with crime.

1.1 Thesis Foci

This thesis has two major foci. First, recidivism rates for psychopathic and nonpsychopathic offenders following a Therapeutic Community treatment program will be assessed by examining official reconviction rates. Second, because clinicians in forensic settings may be consulted to predict recidivism or assist in release decisions, the predictive efficiencies of Hare's (1985a; 1991) Revised Psychopathy Checklist (PCL-R) and two standardized actuarial scales, the Statistical Information On Recidivism (SIR; Nuffield, 1982) scale, and Salient Factor Score (SFS; Hoffman, 1983), will be examined and compared.

2. LITERATURE REVIEW PART I:

**THE NATURE AND ASSESSMENT OF CRIMINAL PSYCHOPATHY AND THE
EFFICACY OF THE THERAPEUTIC COMMUNITY PROGRAM
FOR TREATING CRIMINAL PSYCHOPATHS**

2.1 Organization of the Literature Review

Investigators have used diverse psychopathy assessment criteria in the past, so a brief overview will be provided on the construct of psychopathy, the comparability between psychopathy diagnoses, and the validity of Hare's PCL-R. An overview on the treatment of psychopathy, and correctional applications of the Therapeutic Community will be reviewed next, followed by a discussion on the importance of delineating asocial personality traits from antisocial behaviours, and violent from nonviolent behaviours. Finally, accuracies of the PCL-R, SIR, and SFS for predicting recidivism after treatment will be contrasted, followed by reasons for potential recidivism prediction difficulties.

2.2 The Assessment of Psychopathy, Psychometric Properties of Hare's Revised Psychopathy Checklist (PCL-R), and PCL-R Validity Studies

2.2.1 Characteristics of the Psychopath

Cleckley's (1976) classic book, Mask of Sanity, best exemplifies prototypic psychopathic characteristics with rich clinical descriptions and theoretical formulations. The Clecklian psychopath is an interpersonally charming and skilled manipulator who experiences little guilt or remorse after exploiting others for personal gain. Because of impoverished affective experiences, the psychopath is incapable of forming genuine caring relationships, and is able to exploit others for personal gain while maintaining a facade of concern.

McCord and McCord (1964) described the psychopath as a selfish, loveless individual who feels no guilt or remorse, while Buss (1966) viewed the psychopath as an impulsive and unreliable thrill-seeker who lacks the fundamental capacity to experience love and form true friendships. Canadian (Gray & Hutchison, 1964) and British (Davies & Feldman, 1981) psychiatrists agree the above features are important for the diagnosis of psychopathy, as well as the inability to profit from experience, chronically antisocial

behaviour, emotional immaturity, and egocentricity. The psychopaths' impulsive, unreliable, irresponsible behaviour is first apparent in early childhood (American Psychiatric Association, 1987), and their behaviour may result in numerous contacts with the criminal justice system.

2.2.2 Assessments of Psychopathy

Although the construct of psychopathy is well accepted, investigators have failed to reach an agreement on appropriate assessment procedures (Goodwin & Guze, 1989; see Weiss, 1987, for a review). Many different research and clinical assessment techniques have been used to identify psychopaths (see Hare & Cox, 1978), including the Minnesota Multiphasic Personality Inventory (MMPI; Dahlstrom & Welsh, 1960), the Socialization scale from the California Psychological Inventory (Gough, 1969), and the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980, 1987). However, these different procedures are not interchangeable, making comparisons between assessment methods problematic (Hare, 1985b). Most assessments tend to focus on antisocial behaviours of the psychopath (Harpur, Hare, & Hakstian, 1989) while largely excluding the personality characteristics considered important to classic clinical

descriptions of the psychopath (Cleckley, 1976; McCord & McCord, 1964). This is the major deficiency of traditional instruments for assessing psychopathy. The Psychopathy Checklist (PCL; Hare, 1980), and PCL-R (Hare, 1985a, 1991), on the other hand, are assessment instruments which address both the personality traits and antisocial behaviours of psychopathy.

Briefly, the PCL-R is a 20-item assessment instrument based on the clinical conception of psychopathy best exemplified by Cleckley (1976). Each item describes personality traits or behaviours, and is scored on a three point scale: 2 indicates the item definitely applies to the subject, 1 that it may or may not apply, and 0 that it definitely does not apply.

A good deal of psychometric information has been amassed on the PCL-R, suggesting it is both a reliable and valid measure of psychopathy in white male criminal populations (Forth, Hart, & Hare, 1990; Hare, 1985b; Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990; Harpur, Hakstian, & Hare, 1988; Harpur et al., 1989; Hart & Hare, 1989; Kosson, Smith, & Newman, 1990; Newman & Kosson, 1986; Raine, 1985; Schroeder, Schroeder, & Hare, 1983; Wong, 1984; see also reviews by Widiger & Frances, 1987, and Green, 1988). Classical reliability indices typically exceed 0.85 (alpha coefficients, inter- and intrarater

reliability), while generalizability coefficients are in the 0.85 to 0.90 range (Schroeder et al., 1983). In addition, the PCL-R is related in theoretically important ways to laboratory experiments investigating the behavioural, psychophysiological, neuropsychological, and linguistic characteristics of psychopathy (Forth & Hare, 1989; Gillstrom & Hare, 1988; Hare & Jutai, 1988; Hare & McPherson, 1984a; Hare, Williamson, & Harpur, 1988; Hemphill, Hart, & Hare, 1991; Jutai & Hare, 1983; Jutai, Hare, & Connolly, 1987; Kosson & Newman, 1986; Newman & Kosson, 1986; Newman, Patterson, & Kosson, 1987; Raine & Venables, 1988; Smith & Newman, 1991; Williamson, Harpur, & Hare, 1991). The relationship between the PCL-R and criminal behaviours are reviewed in more detail below.

Because the PCL-R is a reliable and valid measure of criminal psychopathy, it will be used for psychopathy assessments in the present study. (Further details on the psychometric properties and validity of the PCL-R are presented below).

Psychopathy may be conceptualized as a continuum, or as a qualitatively distinct syndrome. Because at present it is unclear whether psychopathy is best viewed as a continuum or a dichotomy, analyses based on both conceptualizations of psychopathy will be conducted in the present study. For brevity, the terms "psychopathic" and

"nonpsychopathic" will be used throughout this paper, but these terms could just as easily be replaced by the phrases "offenders possessing a high number of prototypically 'psychopathic' characteristics" and "offenders possessing a low number of prototypically 'psychopathic' characteristics," respectively.

2.2.3 Factor Structure of Hare's Revised Psychopathy Checklist

Although the PCL-R was designed to measure a monolithic construct, it contains two stable and replicable factors (Hare et al. 1990; Harpur et al., 1988; Templeman & Wong, in press). PCL-R Factor One measures affective/interpersonal personality traits of the psychopath such as superficiality, egocentricity, pathological lying, lack of affect and emotional depth, and callousness. PCL-R Factor Two measures chronically unstable and antisocial lifestyle items such as parasitic lifestyle, poor behavioural controls, impulsivity, lack of long-term plans, and criminal versatility (refer to Appendix A for a list of the individual items comprising the two PCL-R Factors). Each PCL-R factor has its own correlates: PCL-R Factor One is most strongly associated with the classic clinical descriptions of the psychopathic personality,

while PCL-R Factor Two is more strongly correlated with self-report personality scales, quality of family background, criminal behaviour, scales related to socialization, and to diagnoses of antisocial personality disorder (e.g., DSM-III-R, American Psychiatric Association, 1987; Harpur et al., 1989).

The need for clinicians and researchers to incorporate both personality and behavioural characteristics into psychopathy diagnoses is reflected by the DSM-IV Task Force's proposal to revamp antisocial personality disorder diagnostic criteria by the inclusion of a number of Factor One items (American Psychiatric Association, 1990; Hare, Hart, & Harpur, 1991). In the current study, PCL-R Factor scores will be examined in addition to PCL-R Total scores.

2.2.4 Psychopathy and Criminal Behaviours

Although psychopathy is not clearly associated with cognitive differences, such as intelligence measured by the Comprehensive Ability Battery (Hare, Frazelle, Bus, & Jutai, 1980; see a review of intelligence studies by Hare, 1991) or attributions for criminal behaviour (Hemphill, Hemphill, & Hare, manuscript in preparation), psychopathy is associated with criminal behaviour. Psychopaths, for example, commit more violent and nonviolent crimes than

nonpsychopaths, both in and outside of prison (Hare, 1986a, 1986b; Hare & Jutai, 1983; Hare & McPherson, 1984b; Wong, 1984). Interestingly, psychopaths are less likely to murder than nonpsychopaths, but their non-lethal violence is more brutal and tends to be directed towards strangers (Williamson, Hare, & Wong, 1987). Between the ages of thirty-five to forty, however, psychopaths commit fewer nonviolent offences than nonpsychopaths (Hare, McPherson, & Forth, 1988).

Despite their extensive criminal histories, psychopaths and nonpsychopaths are equally likely to secure conditional releases (Wong, 1984). Once released, however, psychopaths violate parole or mandatory supervision at a much greater rate (Hart, Kropp, & Hare, 1988a; Serin, Dev. Peters, & Barbaree, 1990), and differences in recidivism rates are more accentuated the longer the follow-up period (Serin, 1990).

Taken together, these findings indicate the PCL-R is related to criminal behaviours that should theoretically be associated with psychopathy. In the current study, prior to treatment, criminal history is expected to be more extensive among psychopaths compared with nonpsychopaths.

2.3 Treating Criminal Psychopaths

Some investigators are optimistic treatment can be effective with psychopaths (McCord, 1982), while others are much more pessimistic (Cleckley, 1976; Guze, 1976; Harris, Rice, & Cormier, 1991; Rice, Harris, & Cormier, 1989; Suedfeld & Landon, 1978). Clinical descriptions of the psychopath, empirical literature on affect and psychopathy, and the theoretical rationale for violent behaviour all suggest the psychopaths' criminal activities should be very difficult to ameliorate. Literature on these three areas, and the empirical evaluation of psychopathic treatment programs, are presented below.

2.3.1 Clinical Descriptions

As alluded to earlier, clinical descriptions of the psychopath have emphasized deficient affective, interpersonal, and behavioural processes. As Hare (1991) concisely put it, the psychopaths' "persistent disregard for social norms and conventions; impulsivity, unreliability, and irresponsibility; lack of empathy, remorse and emotional depth; and failure to maintain enduring attachments to people, principles, or goals" suggest "there theoretically should be a strong association

between psychopathy and crime" (p. 45).

2.3.2 Empirical Literature on Affect and Psychopathy

Psychophysiological studies indicate psychopaths have a relatively steep temporal gradient of fear arousal and response inhibition (Hare, 1965a, 1965b, 1965c; Hare, Frazelle, & Cox, 1978; Hare & Quinn, 1971; see Hare, 1978, and 1986b, for a review of the this literature). Thus, anxiety (if it is experienced) may be more short-lived for the psychopath, commencing almost immediately before and dissipating shortly after an aversive stimulus. In some situations, the psychopaths' pattern of electrodermal and cardiovascular activity in anticipation of an aversive event may be an effective coping mechanism to attenuate aversive stimuli (Ogloff & Wong, 1990). These studies, taken together with new lines of research on connotative language (Hare, Williamson, & Harpur, 1988; Williamson et al., 1991) and clinical observations (Cleckley, 1976) suggest the psychopath experiences more attenuated and ephemeral affect than others.

If factors such as empathy, concern for others, and fear of punishment inhibit antisocial and aggressive behaviour in most people (Mednick & Volavka, 1980), then individuals lacking these emotional experiences (such as

the psychopath) might satisfy their needs aggressively or otherwise. Following the transgression the psychopath would presumably experience little guilt and, as a result, the emotional deterrents of committing future criminal and violent acts would be limited.

Similarly, if the psychopath experiences attenuated and ephemeral affect without affectively appreciating the consequences of his behaviour, treatment success may be limited. The psychopath could intellectually go through the motions of treatment, but " . . . without suffering or enjoying in significant degree the integrated emotional consequences of experience, the psychopath will not learn from it to modify and direct his activities . . . " (Cleckley, 1976, p. 230).

2.3.3 Violence and Personality Stability

The psychopaths' violent offending should remain stable, if "repetitive violence is more likely to stem from relatively enduring personality traits, rather than from unpredictable chance occurrences or crises" (Litwack & Schlesinger, 1987, p. 211). Consistent with this postulation of the stability of violent behaviour is the finding that psychopaths' violence convictions tend to remain stable, even though their nonviolent behaviours

diminish considerably after thirty-five to forty years of age (Hare, McPherson, & Forth, 1988). Similarly, scores on the behavioural deviance component of psychopathy may decrease with age while the affective component may be much more stable (Harpur & Hare, 1991b).

In sum, if central personality traits mediate many of the psychopath's enduring behavioural predispositions, psychopaths should be very resistant to treatment, and should display higher recidivism rates following treatment than nonpsychopaths. Compared to nonpsychopaths, violent recidivism should be especially high for psychopaths, because repetitive violence is believed to be most strongly associated with enduring personality characteristics.

2.3.4 Empirical Evaluations of Psychopathy Treatment Programs

Certain types of correctional rehabilitation programs are clearly effective for offenders (Cullen & Gendreau, 1989; Gendreau & Ross, 1987; Izzo & Ross, 1990), particularly if criminogenic needs are targeted (Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990; Andrews, Bonta, & Hoge, 1990). However, the evidence is less clear for psychopaths because the empirical literature examining treatment efficacy and psychopathy is extremely weak.

Two extensive literature reviews were conducted by Levine and Bornstein (1972) and Suedfeld and Landon (1978), with 295 and 160 citations, respectively. However, the lack of reliable and valid psychopathic assessment procedures, appropriate control groups, sufficient follow-up periods, clearly stated treatment procedures, and outcome evaluations prevented any firm conclusions. Wong and Elek (unpublished manuscript), for example, assert "the contention that psychopaths are difficult to treat and generally show limited positive response to psychotherapy . . . seems to be based on single case studies and anecdotal accounts rather than a body of controlled empirical research" (p. 9).

One of the major problems of most psychopathy treatment evaluation studies is the poor or nonexistent criteria for the selection of psychopathic subjects. For example, although McCord (1982) presents data that group therapy is effective in treating criminal "psychopaths," the psychopathy assessment procedures were not clearly specified. Almost certainly the diagnostic criterion relied heavily upon criminal behaviours, ignoring important personality characteristics central to most clinical descriptions of the psychopath (Cleckley, 1976; Hare, 1980, 1985a, 1991; McCord & McCord, 1964).

To date, two studies have examined the efficacy of

treating a clearly delineated group of criminal psychopaths, as assessed by Hare's (1985a) PCL-R (Rice et al., 1989; Ogloff, Wong, & Greenwood, 1990). Because both studies employed "Therapeutic Community" treatment programs, a general description of the Therapeutic Community and rationale will be provided, followed by unique features of the two treatment programs and outcome evaluations.

2.3.5 Description and Rationale of Therapeutic Community Treatment

Jones' seminal descriptive accounts of the Therapeutic Community (1953, 1962), and his later theoretical formulations (Jones, 1968), laid the foundation for a new branch of group psychotherapy where the social environment is posited to be highly relevant therapeutically. Jones (1968) believes social structure can be a catalyst for change; open communication and decision-making at all levels culminate in cohesiveness among patients and staff, leading to prosocial attitude changes. Unilateral decisions are avoided whenever possible, and staff aim for consensus in a democratic, egalitarian structure. The Therapeutic Community capitalizes on the skills of both staff and patients. Patients are encouraged to take an active role in

their own and others treatment; indeed, some clinicians believe the Therapeutic Community runs more effectively when patient input is high, and staff input is low (Toch, 1980). Participation by staff may be greater under periods of stress, or when there are new members in the group.

Patients develop an awareness of how others see them, the self-defeating nature of their behaviours, and how their own and others problems can be dealt with. Group identity and cohesiveness is achieved by constructive feedback and sharing feelings with other patients, especially on personal and sensitive topics. Participation in treatment groups give patients real-life opportunities to play a responsible role, gain more confidence and social skills, examine values and group attitudes, and further enhance their identity in a prosocial group. In addition, personal crises are regarded as challenging, practical learning opportunities rather than as problems to be avoided. Patients are taught to be aware of and constantly examine their thoughts, feelings, and behaviours, and to be flexible enough to modify inappropriate strategies. Antisocial attitudes and behaviours are confronted by staff and other patients, whereas prosocial attitudes and behaviours are strongly reinforced.

Although the Therapeutic Community is still a relatively novel treatment procedure, it has been applied

to correctional settings (Toch, 1980). The two Therapeutic Community programs for treating PCL-assessed criminal psychopaths, conducted at Penetanguishene in the mid 1970's and the Regional Psychiatric Centre (RPC; Prairies) in the mid to late 1980's, are described below, as well as the study limitations.

2.3.6 Treating Psychopaths in a Therapeutic Community: Rice, Harris, and Cormier

Rice et al. (1989) followed-up 176 male offenders who had participated in an intensive eighty hour per week, minimum two-year treatment program at the now defunct Social Therapy Unit in Penetanguishene, Ontario. Approaches designed to foster responsibility and empathy among patients included "defense disrupting techniques including drugs (scopolomine, L.S.D., sodium pentothol, alcohol), marathon group therapy and nude encounter groups" (p. 8, Harris et al., 1989).

All offenders were considered "mentally disordered," including psychotic inmates on medication and individuals found not guilty by reason of insanity. In theory, patients who performed well in the treatment program and demonstrated organizational skills were promoted as group leaders. Release and transfer decisions were based upon

subjective assessments of "improvement," and patients and staff participated in the decision making. Subsequent to release, each inmate was rated on the PCL-R (Hare, 1985a) from file information. On average, the 53 psychopathic and 116 nonpsychopathic inmates were followed-up for ten years. Overall recidivism rates for the psychopathic and nonpsychopathic groups were 87% and 44%, respectively. For violent recidivism, 77% of the psychopaths and only 22% of the nonpsychopaths recidivated following release from prison. Thus, psychopaths were more likely to recidivate than nonpsychopaths, especially for violent crimes.

Rice et al. (1989) also compared treated and untreated offenders. The latter group was assessed but not assigned to the Penetanguishene program, and were matched with the former group on PCL-R scores. Treatment was associated with reduced violent and overall recidivism for the nonpsychopathic group, but increased violent recidivism for the psychopathic group! These results suggest psychopaths did not benefit from the type of Therapeutic Community interventions employed, and became "worse" in terms of violent recidivism, than untreated psychopaths. Rice et al. (1989) offered the interpretation that psychopaths use the knowledge they obtained in the Therapeutic Community to become more skillful criminals.

While the Rice et al. (1989) study is methodologically

superior to most psychopathy research, PCL-R ratings were retrospective and from file information alone. The PCL-R was developed on the basis of both file information and interviews (Hare, 1980, 1985a, 1991), and there is presently little validity data available for file-only PCL or PCL-R scores (but, see Wong, 1984). Although reliable PCL ratings may be made on the basis of file information alone, scores are not identical to augmented interview ratings (Wong, 1988).

A second limitation of the Rice et al. (1989) study was the absence of staff participation in the treatment program. Staff should contribute to the Therapeutic Community by facilitating discussions (Jones, 1968), discouraging antisocial attitudes, and steering offenders to behave in a more positive prosocial direction. Monitoring of inmate discussions is not possible without staff involvement, and certain inmates may come to dominate the group in a detrimental manner by encouraging or even pressuring fellow inmates to behave antisocially.

A third limitation of the Penetanguishene program was that, in addition to the unique treatment interventions, there was a lack of structured programs to augment group therapy. Forth, inmates did not volunteer for treatment, and uncooperative patients were sent to a punitive program until they complied with the Therapeutic Community

requirements. Offenders could only be discharged once staff or an independent review board were convinced clinical progress had been made. There was the potential for mandated patients, therefore, to develop strong animosities towards "the system," discourage more motivated and sincere offenders, and promulgate antisocial attitudes.

2.3.7 Treating Psychopaths in a Therapeutic Community: Ogloff, Wong, and Greenwood

The second study examining Therapeutic Community treatment efficacy for criminal psychopaths was a prospective study conducted by Ogloff et al. (1990). A description of the RPC (Prairies) program, used in the Ogloff et al. study (1990), is provided below.

The twenty-four bed McKenzie Unit Therapeutic Community treatment program at RPC houses male inmates who volunteer for treatment. Many of the inmates have difficulties managing anger and violence, or are personality disordered. An average inmate's stay on McKenzie Unit is between six and seven months, although considerable variation exists. Once the inmate is perceived to have received maximum benefit from treatment, requests to be discharged, or is too disruptive on the unit, he is discharged from the program.

The McKenzie Unit Therapeutic Community is best described as an integrated program, since many components often make up treatment, including "large groups," voluntary one-on-one counselling, and "small groups." The McKenzie Unit "large group" component, patterned after Jones' (1968) formulations, is mandatory for all inmates on the unit. Ideally, participants foster an open, safe, confidential environment in group sessions, and provide constructive feedback to help the inmate gain better insight into his behaviour. A strong emphasis is placed on exploring and better understanding the antecedents and contributing factors of the offender's past and present criminal activities.

Patients' diverse interactions and progress may be constantly monitored by other patients and staff, allowing important observation opportunities to ascertain how effective the inmate is at applying knowledge learned in group. Inmates who have made significant progress in treatment act as role models for prosocial behaviours, and provide feedback and confront neophyte participants on their antisocial behaviours.

One-on-one counselling may help an inmate prepare to take an upcoming large group, or discuss issues he does not currently feel comfortable disclosing in large group. Information and skills training are presented in small

groups (e.g., interpersonal and communication skills, money management, Alcoholics Anonymous, and Narcotic Anonymous).

In the Ogloff et al. (1990) study, PCL-R scores were used to divide patients into high (scores of 27 or more; $N = 21$), medium (18-26; $N = 47$), and low (17 and below; $N = 12$) psychopathy groups. Institutional files and discharge summaries were coded to yield motivation/effort, improvement, and days in treatment indices. Compared to the medium and low psychopathy groups, the high psychopathy group remained in treatment for a significantly shorter period of time, and displayed less motivation/effort and improvement during treatment, suggesting psychopaths benefited less from this Therapeutic Community program relative to other offenders. Institutional information for a subsample of twenty-eight patients were examined in more detail from admission to discharge. From this subsample, all four patients that were discharged from treatment for security reasons were from the high psychopathy group.

Although the Therapeutic Community treatment program in the Ogloff et al. (1990) study was more structured and could therefore be implemented with greater control and precision than the Rice et al. (1989) study, the former study has significant limitations. Because global ratings of motivation/effort and improvement were made from institutional discharge summaries, these global ratings may

not have been independent from each other or the number of days in treatment. Objective behaviours such as reconviction rates following treatment would circumvent this "halo effect," and may yield more accurate estimates of treatment efficacy. Even if the global ratings accurately reflected the psychopath's more limited benefit during treatment compared to nonpsychopaths, we cannot be sure the poorer performance during treatment would persist or generalize to post-treatment behaviours. To circumvent these limitations, and because the ultimate success or failure of correctional treatment lies in reduced recidivism rates subsequent to treatment, official reconviction rates following the McKenzie Unit Therapeutic Community treatment program were examined in the current study.

2.4 Additional Considerations When Evaluating Treatment Efficacy

In addition to investigating the relationship between the Total PCL-R score and recidivism following release from Therapeutic Community treatment, the two PCL-R Factors and various measures of recidivism should be examined.

2.4.1 Importance of Examining the PCL-R Factors Separately

Research suggests the importance of assessing psychopathy by both the personality and behavioural Factors of the PCL-R, because the Factors measure different aspects of psychopathy. Clinicians, for example, have long recognized a reduction in criminal behaviour around forty years of age. However, apparently only the behavioural, not the personality component of psychopathy, decreases with time. In a cross-sectional analysis, Harpur and Hare (1991b) found PCL-R Factor Two scores diminish, while PCL-R Factor One scores remain relatively stable over time.

General recidivism is associated strongest with PCL-R Factor Two (Harpur et al., 1989; Serin, 1990), while violent recidivism may be correlated most strongly with PCL-R Factor One (Serin, 1990). Therefore, the psychopathic personality traits measured by PCL-R Factor One may increase the PCL-R's predictive utility for violent recidivism above and beyond the contribution of behavioural instability and deviance, measured by PCL-R Factor Two. For many violence variables, both PCL-R Factors yield stronger correlations than either factor alone (Harpur & Hare, 1991a). Taken together, these studies suggest core psychopathic personality traits and social deviance

contribute to recidivism prediction in different ways. For the present study, the contributions of the PCL-R Factors One and Two to various recidivism indices (e.g., violent and nonviolent) will be examined.

2.4.2 Measures of Criminal Behaviour

Research findings affirm the importance of examining different criminal behavioural indices of recidivism such as violent and nonviolent convictions, because conclusions from one study may not generalize to another if disparate recidivism indices are used. For example, although psychopaths commit fewer nonviolent offences around the age of forty, their commission of violent offences remains relatively stable (Hare, McPherson, & Forth, 1988).

Because violent and nonviolent recidivism are the major dependent variables in the current study, the few studies that have separated violent from nonviolent offences when ascertaining recidivism rates of psychopaths assessed using the PCL-R will now be presented.

Serin (1990) followed 81 offenders for thirty months after their release from incarceration (all of whom had previously been released on Unescorted Temporary Absences several years prior), and found psychopaths to be more violently recidivistic. High psychopathy inmates tended to

fail sooner than nonpsychopaths, and at a higher rate, for both general and violent recidivism. The PCL-R was more efficient in terms of predicting violent recidivism than standard actuarial scales. That is, the PCL-R yielded many more "hits" (i.e., valid positives and valid negatives) and fewer "misses" (i.e., false positives and false negatives) than the Base Expectancy Score, SIR, and SFS (Serin, 1990). When the PCL-R and three actuarial scales were entered into a stepwise multiple regression, only the PCL-R predicted violent recidivism. However, for general recidivism, the PCL-R and three actuarial scales performed very similarly (Serin, 1990).

A ten-year follow-up of offenders released from the Therapeutic Community treatment program conducted by Harris et al. (1991) found the PCL-R to be almost as efficient a predictor of violent recidivism as a battery of 16 criminal-history variables. The PCL-R also significantly increased a multiple correlation (R) from .31 to .45 ($p < .0001$) in an hierarchical multiple regression analysis, after the four best criminal-history variables were forced-in first.

Finally, Rice, Harris, & Quinsey (1990) found the PCL-R to be significantly correlated with violent and sexual recidivism for a group of 54 rapists released from a maximum security psychiatric hospital. Because these

studies suggest the utility of examining various categories of criminal behaviours, violent and nonviolent recidivism rates will be analyzed separately for the current study.

From the above sections on the two PCL-R Factors and violent and nonviolent criminal behaviour, it is predicted violent recidivism will be more strongly related to PCL-R Factor One than PCL-R Factor Two, and all other types of recidivism will be more strongly related to PCL-R Factor Two than PCL-R Factor One.

3. LITERATURE REVIEW PART II:

THE PREDICTIVE EFFICIENCIES OF HARE'S REVISED PSYCHOPATHY CHECKLIST, THE STATISTICAL INFORMATION ON RECIDIVISM SCALE, AND THE SALIENT FACTOR SCORE FOR PREDICTING RECIDIVISM

3.1 Comparisons Between the PCL-R and Actuarial Risk Scales for Predicting Recidivism

Even if a relationship between the PCL-R and recidivism following treatment is demonstrated, thereby affirming the validity of the PCL-R, the predictive efficiency of the PCL-R compared with other measures is of interest. If the PCL-R is not able to make predictive contributions of recidivism following treatment over-and-above other more easily scored actuarial measures, then actuarial scales may be preferred over the PCL-R for practical application (e.g., assisting in pre-release decision making).

3.2 Actuarial Risk Scales and Predicting Recidivism

Actuarial scales are based on the assumption that the more risk variables present, the more likely the individual is to recidivate. Research supports this conclusion for both delinquents and adult offenders. Andrews (1989) asserts "research with practical risk assessment instruments has established now, beyond question, that systematic risk assessment allows the identification of lower and higher risk groups, and that the higher risk categories may be selected so that they include a majority of the cases who will recidivate" (p. 13).

3.3 Accounting for Base Rates of Reoffending

Even though actuarial scales can accurately predict recidivism in the region of sixty to eighty percent (Andrews, 1989), it is not enough for scales that predict recidivism just to be accurate; base rates of recidivism must be taken into account before an instrument's predictive utility can be assessed (Meehl & Rosen, 1955). In order to justify implementing a test instrument to aid in prediction, the instrument must be able to predict significantly better than the base rate. Otherwise, random base rate predictions may yield more accurate results.

For example, if the recidivism rate is seventy percent, and a test instrument predicts recidivism correctly less than seventy percent of the time, then one would be more accurate to predict everyone in the study would recidivate (and be seventy percent accurate) rather than to use the test instrument (which would be less than seventy percent accurate). Because the Relative Improvement Over Chance statistic (RIOC; Loeber & Dishion, 1983; described in more detail in Part Two of the Recidivism Results section) takes into account chance predictions for a corresponding selection ratio and base rate, the RIOC will be employed in the current study for predicting recidivism following the McKenzie Unit Therapeutic Community treatment program.

3.4 Actuarial Risk Scales: Statistical Information On Recidivism Scale and the Salient Factor Score

Two actuarial scales that are used to assist in recidivism prediction are the SIR and SFS; they are routinely utilized in pre-release decisions by the National Parole Board of Canada (Government of Canada, 1988; Nuffield, 1982, 1989), and the United States Parole Commission (Hoffman, 1983; Hoffman & Beck, 1984, 1985), respectively. Because the SIR and SFS were standardized on

large samples and are widely accepted actuarial scales, they were completed for each offender in the current study. Predictive efficiencies of the SIR, SFS, and PCL-R were compared using the RIOC statistic.

3.5 Theoretical Rationale for Predicting Recidivism

If stability of offending is related to core personality characteristics and past behaviour, then scales that measure both personality and behavioural characteristics should be better predictors of reoffending than scales that measure only personality traits or only behaviours. Because the PCL-R taps both aspects, while the SIR and SFS measure only behaviours, the PCL-R is expected to be a better predictor of recidivism than either the SIR or SFS, particularly violent recidivism. Moreover, because the objective, easy-to-score behaviours measured by the SIR and SFS scales are more similar to the behavioural-deviance items in the PCL-R than the interpersonal affective items, these two actuarial scales should be more strongly related to PCL-R Factor Two, and less strongly related to PCL-R Factor One. A more detailed review of the SIR and SFS is given in the Methods section.

3.6 Hypotheses

Based on the preceding literature review, the hypotheses for the present study are as follows:¹

1. Prior to treatment, criminal history will be more extensive among psychopaths compared with nonpsychopaths.
2. All categories of recidivism (i.e., any Reincarceration, new Convictions, Nonviolent recidivism, and Violent recidivism) following treatment will be higher for psychopaths than nonpsychopaths.
3. Violent recidivism will be more strongly related to PCL-R Factor One than PCL-R Factor Two, while any Reincarceration, new Convictions, and Nonviolent recidivism will be more strongly related to PCL-R Factor Two than PCL-R Factor One.

¹ To avert confusion, whenever "Reincarceration," "Convictions," "Nonviolent," and "Violent" are capitalized, these terms will refer to specific offence categories used in this thesis (described in more detail in section 4.2.5 of the Method section). "Convictions," for example, only refers to nonviolent and violent convictions, but does not include convictions for technical revocations.

4. The PCL-R is expected to be more strongly related to recidivism than the SIR or SFS scales, particularly Violent Recidivism.
5. The SIR and SFS scales should be more strongly correlated with PCL-R Factor Two than PCL-R Factor One.

4. METHOD

4.1 Subjects

One hundred eighty-six consecutive admissions to McKenzie Unit, a Therapeutic Community treatment program at the RPC (Prairies) between September 16th, 1985, and May 10th, 1990, made up the original sample for the current study; all subjects were male. Although offenders volunteered to participate in the treatment program, they may have felt obligated take part to improve chances of conditional release.²

Inmates were included in the analyses if their computerized criminal offence histories sheets (i.e., Fingerprint Services Sheets) could be obtained, PCL-R (Hare, 1985a) assessments were available, the offender had not been pardoned or died in the interim between discharge and follow-up, and they were discharged into the community for at least four months prior to the May 8th, 1991 study

² Originally, offenders who had been assessed for psychopathy prior to the September 16th, 1985 study date with the twenty-two item version of the PCL (Hare, 1980) were to be included in the current study. However, all inmates with twenty-two item PCL assessments were excluded because little confidence could be given to the accuracy of these Regional Psychiatric Centre PCL ratings. Most studies have found the two PCL Factors, for example, to correlate about .50 with each other, but in the excluded sample of twenty-five subjects, the correlation was $r = .07$.

cut-off date. This latter restriction was included to provide the inmate with at least a minimal opportunity of four months to recidivate, and for official reconviction rates to appear in the Correction Services of Canada computer system.

4.2 Procedure

4.2.1 Assessment of Psychopathy for the Included Sample.

Psychopathy assessments were made by PCL-R ratings (Hare, 1985a), and one hundred sixty, or 86.02% of the total sample, had at least one PCL-R rating. Eighty offenders were excluded from data analyses, as described in section 5.2, to yield an analyzed sample of 106 offenders. Discrete psychopathy groups were formed by designating inmates with a PCL-R score of thirty and above as psychopathic, twenty-two and below as nonpsychopathic, and the remaining inmates as a "mixed" or medium psychopathic group. Fifteen, 47, and 44 offenders fell in the high, medium, and low psychopathy groups, respectively.

Averaged PCL-R ratings, when available, were used for analyses. PCL-R Factors One and Two were calculated by

summing the averaged raw item scores (when available) across items loading on each factor, as suggested by Hare et al. (1990).

Hare (1991) notes that, when there is insufficient information to adequately score an item, up to five items may be omitted from the Total PCL-R score, and up to two items may be omitted on each PCL-R Factor, without invalidating the scores. From the 120 ratings in the current sample (i.e., 106 PCL-R scores for the first rating and 14 PCL-R scores for the second rating), one item, two items, and three items were missing from five offenders, four offenders, and three offenders, respectively. Six offenders were missing one item for PCL-R Factor Two, and one offender was missing two items for PCL-R Factor One. Similar to the findings by Hare (1991), prorating PCL-R scores resulted in essentially identical scores as replacing missing values with one (all r 's between prorated and missing = 1 scores were in excess of $r = .99$). Thus, because it was the simplest method of dealing with missing PCL-R item scores, missing values were replaced with a one in the current study.

4.2.2 Actuarial Risk Scales

Two standard actuarial scales, the SIR and SFS, were completed from Fingerprint Services Sheets augmented with Release Information Sheets (described in more detail in Appendix F), and patients' clinical files, up to and including the period of McKenzie Unit treatment. Both actuarial scales consist of criminal history and demographic items. Every eighth admission in the included sample, sorted by the date of admission to McKenzie Unit, was rated independently, blind to the first ratings. These fourteen second ratings were completed for interrater reliability purposes only.

4.2.2.1 Statistical Information On Recidivism Scale

The National Parole Board of Canada (Government of Canada, 1988) uses this fifteen item scale routinely as an aid in parole decision-making. After aggregating the SIR items to form a single score, risk to reoffend is assessed. Scores can range from -27 to +30, with lower scores representing better risk and higher scores representing poorer risk to reoffend. For example, inmates with SIR scores between -27 to -6 are considered at least risk to

reoffend, with approximately twenty percent of the group committing an indictable offence. On the other hand, inmates with the greatest likelihood to recidivate obtain SIR scores between +9 to +30, and fail about sixty-seven percent of the time. Please refer to Appendices B and C for a copy of the SIR scale, and additional coding details, respectively.

4.2.2.2 Salient Factor Score

The SFS is a six-item scale used by the United States Parole Commission to assist in early-release decisions. The items are summed together, and total scores can range from 0 to 10, with 0-3 representing poor risk and 6-10 representing good to very good risk. Please refer to Appendices D and E for a copy of the SFS scale and additional coding details, respectively.

4.2.3 Data Coding and Entry: Criminal Convictions

Official conviction rates were coded from Fingerprint Services (FPS) Sheets obtained on March 18th, 1991, and augmented with Release Information Sheets, Transfer Sheets, and in some cases National Parole Board of Canada Files. Convictions prior to, during, and after the McKenzie Unit

treatment block were coded as past conviction history (Study Period 1 from Appendix H, described in section 4.2.3), current convictions (Study Period 2 from Appendix H), and recidivism (Study Period 3 from Appendix H), respectively. Detailed criminal conviction coding is provided in Appendix F.

4.2.4 Data Entry

Once the FPS Sheets had been prepared for data entry, each line on the FPS Sheet was entered into the SPSS Data Entry computer program shown in Appendix H, using the offence categories provided in Appendix I.

The excluded subjects, described in more detail in section 5.2, were removed from the 4,732 line, 3,379,536 byte data file, and the number of offences and sentence lengths prior to McKenzie Unit treatment were aggregated so the data file was in a more manageable size for statistical analyses.

4.2.5 Recidivism Categories

Once the offender returned to the community following McKenzie Unit treatment, recidivism (yes/no) was defined as a new conviction or supervision violation on the FPS Sheet.

According to this definition, offenders escaping from prison would be considered recidivists only after being reincarcerated for a new offence, receiving a supervision violation, or receiving an unlawfully at large conviction.³ Days to recidivism were defined as the number of days in the community (counting day parole as time in the community) it took the inmate to reoffend.

Dichotomous measures of recidivism (yes/no), and days to recidivism were calculated for four offence categories.

4.2.5.1 Any Reincarceration

Convictions for technical revocations, nonviolent offences, or violent offences in Appendix I made up the any Reincarceration category. If the offender was reincarcerated several times, the difference between the earliest reconviction date and date of returning to the community was used for days-to-recidivism calculations.

³ If the escape date had been used as the recidivism date, then the offender would have recidivated before he was even released. To correct this problem, it would have been possible to set the release and escape dates the same, so the offender would be considered to have recidivated 0 days after release. However, actual offence dates were not recorded for any of the other categories: FPS Sheets only indicate conviction dates, and not the actual offence date. Therefore, in terms of consistency, it would be inappropriate to use offence dates for escapes, but conviction dates for every other offence category.

4.2.5.2 New Convictions

Convictions for violent or nonviolent offences, listed in the Detailed Criminal Offence Coding Sheet in Appendix I, made up the new Convictions category. Technical revocations for past offences (e.g., violating conditional release or breach of parole), and failing to appear, were excluded from this category. Because days to recidivism was defined as the number of days in the community it took the inmate to acquire a new Conviction, in some cases days-to-new-Conviction calculations were adjusted by removing days incarcerated for prior non-new Convictions. For example, the offender may have been incarcerated for a mandatory supervision violation (the first recidivism failure) before committing a property offence (the second recidivism failure). The number of days spent in prison for this mandatory supervision violation would be subtracted from the number of days from release into the community (after McKenzie Unit treatment) until the property offence conviction. Both new Convictions and non-new Convictions on the same date were counted as new Convictions.

4.2.5.3 Nonviolent Recidivism

Convictions for nonviolent offences, listed in the Detailed Criminal Offence Coding Sheet in Appendix I, made up the Nonviolent recidivism category. Adjustments for the number of days to Nonviolent recidivism were made in the manner discussed above, with previous non-Nonviolent recidivism removed. Multiple convictions on a single date for both violent and nonviolent offences were treated as Nonviolent recidivism.

4.2.5.4 Violent Recidivism

Recidivism convictions for violent offences, listed in the Detailed Criminal Offence Coding Sheet in Appendix I, made up the Violent recidivism category. Adjustments for the number of days to Violent recidivism were consistent with new Convictions adjustments discussed above; days incarcerated for previous non-Violent recidivism were removed. Multiple convictions on a single date for both Violent recidivism and non-Violent recidivism were considered Violent recidivism.

4.2.6 Prior Criminal History Coding

Criminal histories for the three psychopathy groups were compared to determine if the low, medium, and high PCL-R groups differed in pre-treatment criminality. The number of convictions per year free up to and including the treatment period, since fifteen years-old, was calculated by dividing the numerator by the denominator, and multiplying by 365.25 days:

Numerator

The number of convictions for the offence category of interest (i.e., technical revocations, nonviolent and violent convictions) for Study Periods 1 and 2 from Appendix H (described in section 4.2.3).

Denominator

The total time spent in prison for Study Periods 1 and 2 from Appendix H (described in section 4.2.3) subtracted from the offenders' fifteenth birthday, which was then subtracted from the discharge date from prison, following McKenzie Unit treatment.

The above description translates into the following formula:

(the number of convictions for the offence category of interest, for Study Periods 1 and 2 in Appendix H)

(discharge date from prison, following McKenzie treatment -
date of fifteen birthday -
total time spent in prison for Study Periods 1 and 2 in
Appendix H),

multiplied by 365.25 days.

4.2.7 Conviction Data Analyzed

Only convictions and incarcerations for technical revocations, nonviolent offences, and violent offences were used in the subsequent statistical analyses, because less confidence can be given to data based on charges. The criminal justice system deems the offender to have committed the offence only after a conviction has been levied; there is less certainty of guilt for offences not culminating in a conviction. Moreover, analyses conducted with convictions or charges as the dependent variable yield essentially identical results (Hare, McPherson, & Forth, 1988), so only conviction data were analyzed in the current study.

5. PRE-RELEASE RESULTS

5.1 Psychometric Characteristics of the Revised Psychopathy Checklist

Because psychometric information for the total ($N = 186$) and "included" ($N = 106$) samples (described in more detail below) were essentially identical, and recidivism analyses were conducted on only the included sample, psychometric information for the included sample is presented below.

PCL-R interrater reliability for a subsample of fourteen offenders was $r = .92$, $p < .001$. Typically, the two PCL-R Factors correlate about .5 with one another (Hare, 1991). PCL-R Factors One and Two were correlated $r = .47$ ($p < .001$, $N = 106$) in the present sample. The mean PCL-R score was 22.68 ($S.D. = 6.34$), the mean PCL-R Factor One score was 8.09 ($S.D. = 3.24$), and the mean PCL-R Factor Two score was 11.69 ($S.D. = 3.18$); these PCL-R scores are very similar to those found in other male prison inmate samples (Hare, 1991). Cronbach's alpha coefficient for the first and second ratings were .82 ($N = 106$) and .83 ($N = 14$), respectively.

5.2 Comparability Between the Included and Excluded Samples On Demographic Characteristics, Time Spent in McKenzie Unit Treatment, and Revised Psychopathy Checklist Scores

Of the original one hundred eighty-six subjects that spent time on McKenzie Unit for treatment between September 16th, 1985, and May 10th, 1990, eighty subjects comprised the "excluded sample" (i.e., offenders eliminated from further data analysis for reasons discussed below). The "included sample," on the other hand, was comprised of one hundred six offenders that were extensively analyzed for recidivism rates and predictive efficiency.

As can be seen from Table 5.1, most subjects were excluded because they had not yet been discharged from incarceration following treatment, or PCL-R assessments were unavailable. Thirty-eight of the unreleased forty-nine⁴ subjects were serving life sentences, and "lifers" were much less likely to be released than "non-lifers," χ^2

⁴ Subjects were excluded from the total sample in an hierarchical manner: subjects without PCL-R scores were excluded first, followed by deceased offenders, those not discharged for the minimal four month follow-up period, those not released from incarceration as of the May 8th, 1991 study date, and those purged from the Correction Service of Canada computer system. Several offenders fell into two of the exclusionary categories: four offenders without PCL-R scores had also not been released, and one inmate died before release. Therefore, the total number of subjects not yet released from incarceration as of the May 8th, 1991 study date was 49.

(1, $N = 185$) = 110.05, $p < .0000$ (note: release information was unavailable for one offender).

Table 5.1. Reasons for excluding subjects from the included sample.

Reasons for excluding subjects from the included sample		% of Total Sample	
	<u>N</u>		
No PCL-R assessment was available	26	13.98	
Deceased - confirmed by FPS Sheets	4	2.15	
Not discharged for the minimal four month follow-up period	4	2.15	
Not yet released from incarceration	44	23.66	
Purged from the Correctional Service Of Canada computer system (perhaps pardoned or deceased)	2	2.15	
Subjects excluded from the included sample	80	43.01	

Note: PCL-R = Revised Psychopathy Checklist (Hare, 1985a); FPS = Fingerprint Services.

5.2.1 Age, Race, and Education Level

On average, the included sample was 4.39 years younger during admission to McKenzie Unit than the eighty excluded subjects, as can be seen in Table 5.2. Similarly, offenders serving life sentences were an average of 4.69 years older than "nonlifers," as presented in Table 5.3.

The ethnic compositions of the included and excluded samples were very similar, as presented in Table 5.2. Race was recoded as Caucasian/not Caucasian, and frequency counts of the racial composition for the included sample were compared with the eighty subjects excluded from the total sample. A nonsignificant χ^2 suggests subjects included for analyses were similar in racial composition from subjects excluded from the total sample.

Institutional medical files from the RPC (Prairies) were examined for average years of education. As can be seen from Table 5.2, the included sample and eighty excluded offenders did not differ from one another on educational level (note: years of education was unavailable from two institutional files).

Table 5.2. Average ages and years of education, and race category frequencies, for subjects included and excluded from subsequent criminal behaviour analyses.

	Excluded	Included		
Demographic	sample	sample		
characteristics	(<u>N</u> =80)	(<u>N</u> =106)	<u>F</u> or <u>X</u> ²	<u>p</u>

Mean age at admission				
to McKenzie Unit ^a	32.04	27.65	17.98 ^b	.0001
	(6.97)	(7.00)		
Race				
Caucasian	64.15%	57.50%	.85 ^c	n.s.
Native	21.70%	22.50%		
Metis	11.32%	15.00%		
Inuit	.94%	2.50%		
Asian	.94%	.00%		
Black	.00%	1.25%		
Other	.94%	1.25%		
Mean years of				
education ^{a,d}	9.59	9.68	.06 ^e	.80
	(2.72)	(2.10)		

^a Standard deviations are presented in brackets below the means.

^b F (1, 184).

^c X² (d.f. = 1).

^d Two offenders were missing years of education, so N = 78 for the excluded sample.

^e F (1, 182).

Table 5.3. Average ages upon admission to treatment for offenders serving life sentences, and offenders not serving life sentences.

Sentenced to life or not	<u>N</u>	Age	<u>t</u> (184)	<u>p</u>
Not serving a life sentence	144	28.48 (6.95)	-3.79	.000
Serving a life sentence	42	33.17 (7.39)		

Note: Standard deviations are presented in brackets below the means.

5.2.2 Time Spent In McKenzie Unit Treatment

On average, the excluded sample spent 36.57 more days on McKenzie Unit than the included sample, as presented in Table 5.4. This greater length of time in treatment for the excluded sample may reflect the disproportionately high number offenders serving life sentences, who spent more time in treatment than "nonlifers," $F(1, 184) = 15.96$, $p = .0001$. The mean stay for "lifers" was 240.83 days (S.D. = 106.55; N = 42), and 176.67 days (S.D. = 86.81, N = 144) for "non-lifers." (Interestingly, the two "lifers" who were released spent almost twice as long on McKenzie Unit as the

released "non-lifers," with mean stays of 332.00 days (S.D. = 125.87) and 172.42 days (S.D. = 82.41), respectively, a significant difference ($F(1, 104) = 7.27, p = .008$)).

Table 5.4. Number of days spent in treatment for the included and excluded samples.

	Excluded sample (N=80)	Included sample (N=106)	F(1, 184)	p
Descriptive statistics				
Days spent on McKenzie				
Unit for Treatment:				
Mean	212.00	175.43	6.94	.009
Standard deviation	103.78	85.37		

In sum, one hundred six offenders, or 56.99% of the total sample, were included in the current study. In terms of ethnic composition and years of education, the subsample was similar to the larger sample from which it was drawn. However, the included sample was younger, and spent significantly less time in treatment than the excluded sample, perhaps because the excluded sample was comprised of a large number of unreleased offenders serving life sentences.

5.2.3 Revised Psychopathy Checklist Scores

The one hundred six subjects in the included sample were compared on PCL-R ratings with the fifty-four excluded subjects that had PCL-R ratings. The mean Total PCL-R values for the included and excluded samples did not differ from one another, as presented in Table 5.5.

Unless otherwise specified, all subsequent analyses were conducted on only the included sample.

Table 5.5. Revised Psychopathy Checklist means and standard deviations for the included and excluded samples.

Descriptive statistics	Excluded sample (<u>N</u> =54)	Included sample (<u>N</u> =106)	<u>F</u> (1, 158)	<u>p</u>
Mean PCL-R score	21.33	22.67	1.43	.23
Standard deviation	7.36	6.36		

Note: PCL-R = Revised Psychopathy Checklist (Hare, 1985a).

5.3 Relationship Between Age, Race, and Educational Level for Offenders Assessed on the Revised Psychopathy Checklist

Two measures of age were calculated. The low, medium, and high PCL-R groups did not differ from one another on either the age upon admission to McKenzie Unit, or for age upon release to the community following treatment, as is summarized in Table 5.6.

Age at admission to McKenzie Unit was not correlated with PCL-R Factor One ($r = -.11$, $p = .24$), but it was significantly negatively correlated with the Total PCL-R score ($r = -.23$, $p = .02$) and PCL-R Factor Two ($r = -.38$, $p < .001$). Similarly, age at release was not significantly correlated with PCL-R Factor One ($r = -.12$, $p = .20$), but it was with the Total PCL-R score ($r = -.25$, $p = .01$) and PCL-R Factor Two ($r = -.41$, $p = .000$).

Table 5.6. Average age and years of education for the low, medium, and high Revised Psychopathy Checklist groups.

	Psychopathy Group				F	p
	Low	Medium	High			
Demographic characteristics	(N=44)	(N=47)	(N=15)	(2,103)		
Average age at McKenzie Unit admittance	28.94 (8.95)	26.53 (5.30)	27.40 (4.48)	1.37	.26	
Average age at discharge from incarceration	30.10 (8.91)	27.49 (5.40)	28.24 (4.32)	1.62	.20	
Average years of education	9.59 (2.31)	9.77 (1.97)	9.67 (2.02)	.08	.93	

Note: standard deviations are presented in brackets below the means.

A significant point-biserial correlation between the PCL-R score and race (Caucasian=1; not Caucasian=2) was found for PCL-R Factor Two ($r_{pb} = .22$, $p = .02$), but not PCL-R Factor One ($r_{pb} = .01$, $p = .88$) or the Total PCL-R score ($r_{pb} = .18$, $p = .06$), suggesting non-Caucasian offenders score higher on the social deviance aspect of psychopathy than Caucasian offenders. A psychopathy group (high, medium, low) by race (Caucasian, non-Caucasian) log-

linear analysis was not significant, χ^2 (2, N = 106) = 4.79, p = .09 (BMDP 4F; Dixon, 1990), suggesting the distribution of Caucasians and non-Caucasians were equally frequent among the three psychopathy groups. Sixty-seven percent (10 / 15) of the high PCL-R group, 53.19% (25 / 47) of the medium group, and seventy-five percent (33 / 44) of the low group were Caucasian.

The low, medium, and high PCL-R groups did not differ from one another on educational level, as shown in Table 5.6. Similarly, years of education was not correlated with the Total PCL-R score (r = .00, p = .99), PCL-R Factor One (r = .12, p = .21), or PCL-R Factor Two (r = -.12, p = .20; N 's = 106).

5.4 Institutional Transfers, Release Details, and Length of Follow-up for the Included Sample

5.4.1 Institutional Transfers

Before coming to the RPC (Prairies) for treatment, the included sample spent an average of 695.67 days (S.D. = 730.11) in prison for their current offence. Once at RPC, 38.12 days (S.D. = 44.33, N = 106) elapsed before being admitted onto McKenzie Unit, and the average treatment stay on McKenzie Unit was 175.43 days (S.D. = 85.37; range = 28

to 446 days).

5.4.2 Institutional Transfers for the Psychopathy Groups

In terms of admission and discharge information, the low, medium, and high PCL-R groups did not differ from one another on the number of days spent in prison for the current offence before admission to McKenzie Unit, the number of days spent in RPC before transfer to McKenzie Unit, and the number of days between RPC release and release from incarceration (for those offenders not discharged directly from RPC to the community). However, there was a tendency for psychopaths to spend less time on McKenzie Unit for treatment than nonpsychopaths. Only the high and low PCL-R groups differed significantly from one another on days in treatment ($p < .05$), using Student-Newman-Keuls multiple comparisons (SPSS, 1988). Correlational analyses, however, failed to yield significant relationships between days on McKenzie Unit and Total PCL-R score ($r = -.04$, $p = .68$), PCL-R Factor One ($r = .00$, $p = .98$), and PCL-R Factor Two ($r = -.07$, $p = .46$). Means and standard deviations for the number of days before institutional transfers for the low, medium, and high PCL-R groups are presented in Table 5.7.

Table 5.7. Mean number of days before institutional transfers for the low, medium, and high Revised Psychopathy Checklist groups.^a

Psychopathy Group					

Transfer and	Low	Medium	High	F (2,	
release variables	(N=44)	(N=47)	(N=15)	103)	p

Days in prison before	726.32	625.32	826.20	.49	.61
transfer to RPC ^b	(883.62)	(525.22)	(809.73)		
Days in RPC before	44.18	36.45	25.60	1.04	.36
transfer to McKenzie ^c	(59.06)	(32.05)	(18.79)		
Days on McKenzie Unit	179.34	186.70	128.67	2.80	.07
for treatment ^d	(90.22)	(79.46)	(78.08)		
Days incarcerated after	336.16	285.63	269.80	.39 ^f	.68
leaving RPC ^e	(283.71)	(215.31)	(291.03)		

(Table continues)

(. . . continued)

^a Standard deviations are presented in brackets below the means.

^b Means and standard deviations are for days spent in prison for Study Period 2 (described in section 4.2.3), prior to RPC transfer.

^c Means and standard deviations are for days spent in RPC (for the treatment period) before being transferred to McKenzie Unit.

^d If the offender was treated on McKenzie Unit several times, the longest treatment period was used; if both treatment periods were approximately equal in length, then the most recent treatment period was used.

^e Means and standard deviations are for days in prison following RPC treatment for Study Period 2 (described in section 4.2.3); \bar{N} = 10 for the high group, \bar{N} = 27 for the medium group, and \bar{N} = 31 for the low psychopathy group (the latter three groups include only those subjects not released directly from RPC to the community).

^f $F(2, 65)$.

5.4.3 Release Details

Thirty eight out of one hundred six offenders (35.85%) were released directly from RPC into the community, and the remaining 64.15% (68 / 106) were transferred from RPC to another institution for an average of 306.34 days (S.D. = 257.28; \bar{N} = 68) before being released. Most offenders were released on mandatory supervision or parole, while few escaped or reached their Warrant Expiry Date before being released, as listed in Table 5.8.

Table 5.8. Types of releases into the community following treatment.

Release type	<u>N</u>	% of Included
		Sample
Mandatory Supervision	55	51.89
Day parole	40	37.74
Full parole	8	7.55
Escaped	2	1.88
Warrant Expiry Date	1	.94
Total offenders released	106	100.00

5.4.4 Release Details for the Psychopathy Groups

After recoding release type as granted early release (day and full parole) or not granted early release (Mandatory Supervision, escape, Warrant Expiry Date), there was no relationship between the three PCL-R groups and release type, χ^2 (2, $N = 106$) = 2.46, $p = .29$. Similarly, early/not early release was uncorrelated with the Total PCL-R score ($r_{pb} = .14$, $N = 106$, $p = .16$), PCL-R Factor One ($r_{pb} = .16$, $p = .10$), and PCL-R Factor Two ($r_{pb} = .09$, $p = .34$).

5.4.5 Length of Follow-up

On average, the included sample was followed-up for 879.15 days (S.D. = 471.35, N = 106), with the follow-up period calculated by subtracting the discharge date from incarceration (following McKenzie Unit treatment) from the May 8th, 1991, study cutoff date.

5.4.6 Length of Follow-up for the Psychopathy Groups

There was no difference between length of follow-up for the PCL-R groups, as presented in Table 5.9. Length of follow-up was uncorrelated with Total PCL-R score ($r = -.16$, $p = .11$), PCL-R Factor One ($r = -.05$, $p = .58$), and PCL-R Factor Two ($r = -.13$, $p = .19$).

Table 5.9. Length of follow-up for the low, medium, and high Revised Psychopathy Checklist groups.

	Psychopathy Group				

Descriptive	Low	Medium	High	F (2,	
statistics	(N=44)	(N=47)	(N=15)	103)	p

Length of follow-up in days					
Mean	895.50	871.26	855.93	.05	.95
Standard deviation	499.32	486.10	350.04		

5.6 Prior Criminal History

5.6.1 Psychopathy Group Analyses

The offence distributions for criminal history prior to McKenzie Unit treatment, coded into categories of technical revocations, nonviolent convictions, and violent convictions from Appendix I, had positive kurtoses, were positively skewed, and violated the assumptions of homogeneity of variance required for analysis of variance. Therefore, an inverse transformation was calculated to normalize the distributions ($1 / \text{number of offences committed per year free} + 1$). Subsequent to

transformations, Cochran's χ^2 and Bartlett-Box F 's indicated the homogeneity of variance assumptions were no longer violated (SPSS, 1988; p 's ranged from .11 to .62).

All ANOVA's were significant, indicating criminal histories among psychopathy groups were different from one another. Student-Newman-Keuls multiple comparisons were conducted, with $\alpha = .05$. For all offence categories inversely transformed, the high PCL-R group committed more offences than the low PCL-R group, and the medium and low groups differed from each another. These findings suggest psychopaths had more extensive criminal histories than nonpsychopaths prior to treatment. Mean values for the transformed and untransformed scores are shown in Table 5.10, along with the transformed F statistics.

Table 5.10. Mean number of convictions committed per year free for the low, medium, and high Revised Psychopathy Checklist groups, prior to treatment.

Psychopathy Group					

	Low	Medium	High		
Offence category	(N=44)	(N=47)	(N=15)	F(2,103)	p

<u>Technical revocations</u>					
Before transformations ^a	.20	.45	.59		
After transformations ^b	.86	.74	.68	8.68	.000
<u>Nonviolent convictions</u>					
Before transformations	1.79	3.05	5.35		
After transformations ^b	.53	.38	.28	6.35	.002
<u>Violent convictions</u>					
Before transformations	.50	1.01	1.46		
After transformations ^b	.72	.59	.54	8.50	.000

Note: Homogeneity of variance assumptions required for Analysis of Variance were violated for the untransformed, but not the transformed, scores.

^aBecause of the homogeneity of variance violations, means and standard deviations are reported for comparative purposes only, and *F* and *p* values have been omitted.

^bInverse transformations were calculated as $(1 / (\text{number of offences per year free} + 1))$.

The family-wise Type I error rate for each major offence category (technical revocations, nonviolent convictions, violent convictions) was held at $\alpha_{FW} = .01$ by setting the test-wise error rate at $\alpha_{TW} = .01 / 3 = .003$.

5.6.2 Psychopathy Correlational Analyses

Correlations between past criminal history and Total PCL-R score, PCL-R Factor One, and PCL-R Factor Two are listed in Table 5.11. To determine if the PCL-R Factors differed in their intercorrelations with prior criminal history, the T statistic representing the difference between two dependent correlations was calculated (Steiger, 1980, p. 249); PCL-R Factor Two was more strongly correlated with technical revocations than PCL-R Factor One, but no difference between the two PCL-R Factors was noted for violent or nonviolent convictions.

Table 5.11. Correlations between the Revised Psychopathy Checklist Factors and number of criminal offences committed per year free, prior to treatment.

Offence category	PCL-R Factor		PCL-R	
	1	2	total score	T (103) ^a
Technical revocations	.15	.49**	.37**	-3.84 ⁺
Nonviolent convictions	.24*	.39**	.32**	-1.60
Violent convictions	.16	.27*	.29*	-1.12

Note: PCL-R = Revised Psychopathy Checklist (Hare, 1985a). All correlations are based on $N = 106$.

^a The difference between PCL-R Factor One and PCL-R Factor Two correlations with recidivism were calculated using the formula presented by Steiger (1980, p. 249); T is distributed as Student's t with $df = N - 3$.

The family-wise Type I error rate for each PCL-R score (Total, Factor 1, Factor 2) was held at $\alpha_{FW} = .05$ by setting the test-wise error rate at $\alpha_{TW} = .05 / 3 = .02$.

* $p_{FW} < .05$, $p_{TW} < .02$.

** $p_{FW} < .01$, $p_{TW} < .003$.

+ $p < .001$ (two-tailed).

6. RECIDIVISM RESULTS, PART ONE:

RECIDIVISM OF CRIMINAL PSYCHOPATHS AFTER TREATMENT IN THE RPC THERAPEUTIC COMMUNITY PROGRAM

The relationship between psychopathy and recidivism will be presented in this section, while comparisons of the predictive efficiencies of the PCL-R, SIR, and SFS will be presented in the following section. The four recidivism categories described in section 4.2.5 were analyzed separately.

6.1 Group Analyses: Proportion of Failures

6.1.1 Any Reincarceration

The proportion of the three PCL-R groups Reincarcerated following McKenzie Unit treatment are presented in Figure 6.1. The base rate for any Reincarceration for the total sample was 77.4% (82 / 106). Bartholomew's test for qualitatively ordered proportions (Fleiss, 1981) was not significant ($\chi^2 = 1.79$, $df = 3$), indicating the high, medium, and low PCL-R groups were Reincarcerated at a similar rate.

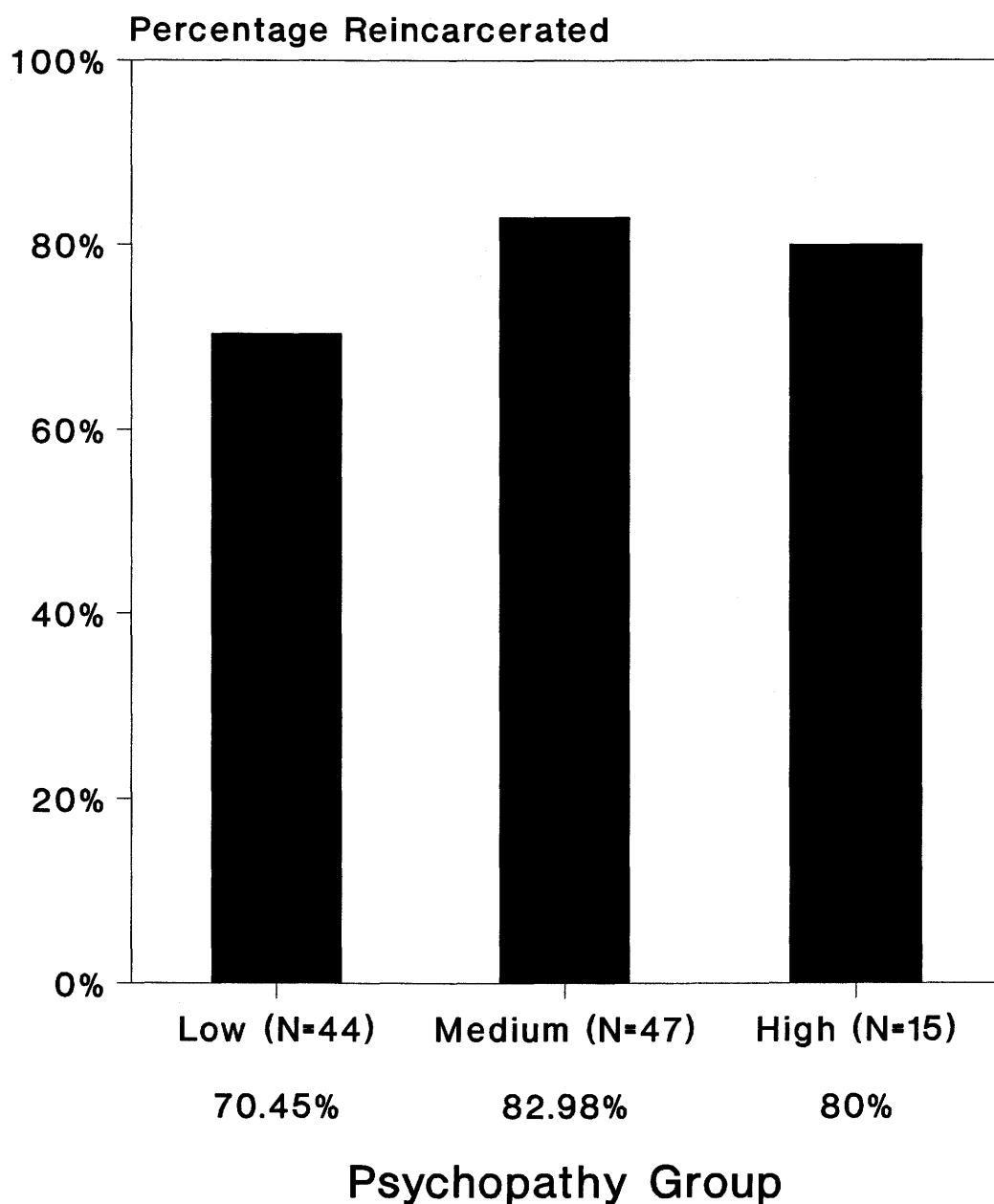


Figure 6.1. Proportion of offenders in the low, medium, and high Revised Psychopathy Checklist groups that were Reincarcerated, following treatment.

None of the second-order or third-order effects of a three-way (psychopathy group by early/not early release by recidivism/no recidivism) log-linear analysis (BMDP 4F; Dixon, 1990) were significant, but the one-way effect for Reincarceration was significant χ^2 (1 = 33.55, $p = .000$), indicating more offenders were likely to be reincarcerated following McKenzie Unit treatment than not. Reincarceration rates for the PCL-R groups by release type are presented in Table 6.1.

Table 6.1. Reincarceration rates for the low, medium, and high Revised Psychopathy Checklist groups by release type, following treatment.

	Psychopathy Group		
	Low	Medium	High
Release type	(N=44)	(N=47)	(N=15)
<u>Granted early release</u>			
Number of releases			
resulting in Reincarc.	14 / 21	19 / 23	3 / 4
Reincarc. percentages	66.67%	82.61%	75.00%
<u>Not granted early release</u>			
Number of releases			
resulting in Reincarc.	17 / 23	20 / 24	9 / 11
Reincarc. percentages	73.91%	83.33%	81.82%

Note. Returning to the community on full or day parole following McKenzie Unit treatment were recoded as granted early release; returning to the community on Mandatory Supervision, Warrant Expiry Date, or by escaping were recoded as not granted early release. PCL-R = Revised Psychopathy Checklist (Hare, 1985a); Reincarc. = Reincarceration.

6.1.2 New Convictions

The proportion of the PCL-R groups receiving a new Conviction following McKenzie Unit treatment are shown in Figure 6.2. The base rate of new Convictions for the total sample was 52.83% (56 / 106). Bartholomew's test for qualitatively ordered proportions (Fleiss, 1981) was significant ($\chi^2 = 4.27$, $m = 3$, $p < .05$), with the high PCL-R group reoffending at the highest rate, and the low PCL-R group reoffending at the lowest rate.

A two-way (release type by recidivism) log-linear analysis (BMDP 4F; Dixon, 1990) was significant, χ^2 (8 = 27.17, $p = .000$); this second-order effect was analyzed separately, following significant marginal and partial associations for release type by recidivism, derived from the third-order model of release type by recidivism by psychopathy group, as suggested by Dixon (1990). Offenders granted early release were less likely to be Convicted following McKenzie Unit treatment than offenders not granted early release, with failure rates of 39.58% and 63.79%, respectively. The number and proportion of new Convictions for the PCL-R groups by release type are shown in Table 6.2.

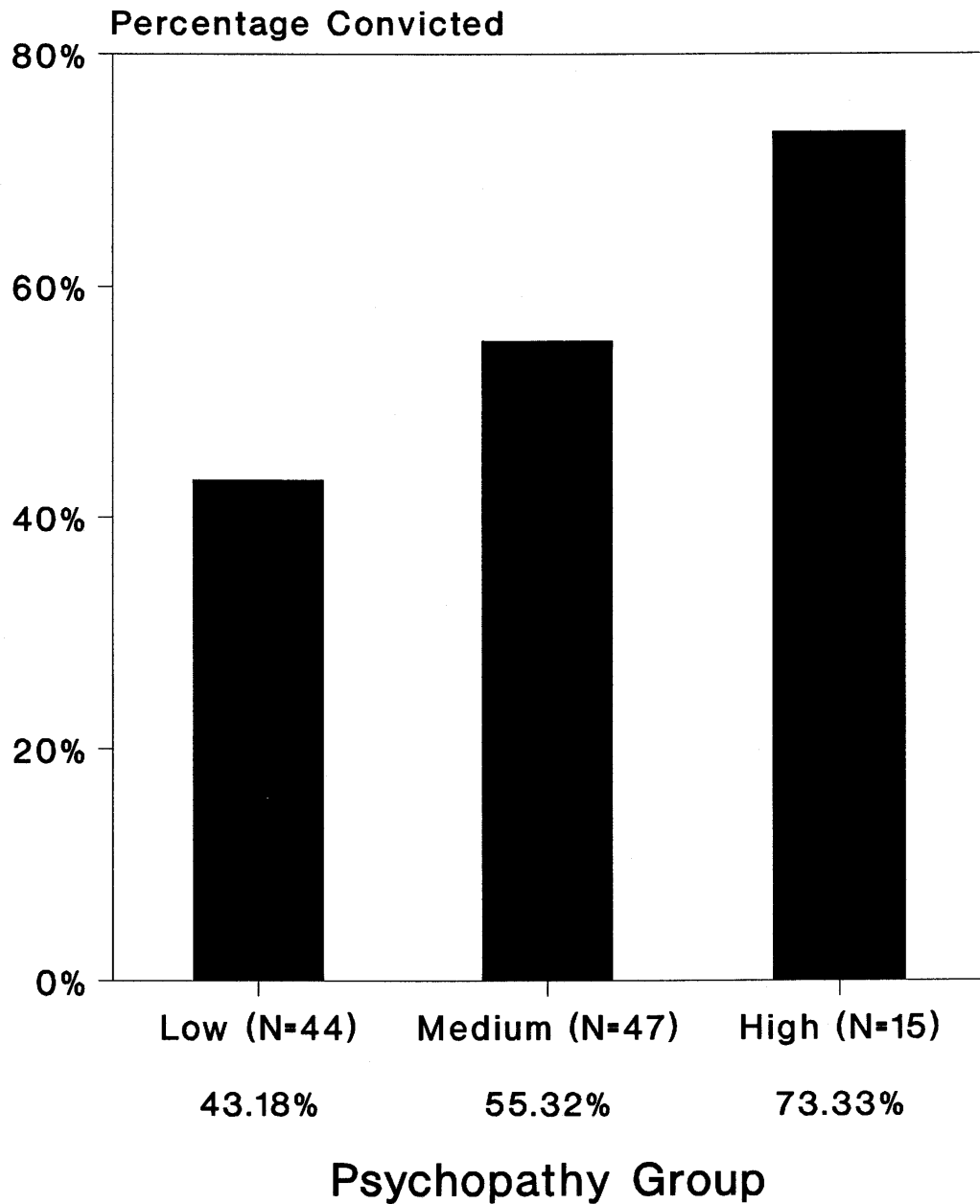


Figure 6.2. Proportion of offenders in the low, medium, and high Revised Psychopathy Checklist groups Convicted of a new offence following treatment.

Table 6.2. New Conviction rates for the low, medium, and high Revised Psychopathy Checklist groups by release type, following treatment.

	Psychopathy Group		
	Low	Medium	High
Release type	(N=44)	(N=47)	(N=15)
<u>Granted early release</u>			
Number of releases			
resulting in Convictions	6 / 21	11 / 23	2 / 4
Conviction percentages	28.57%	47.83%	50.00%
<u>Not granted early release</u>			
Number of releases			
resulting in Convictions	13 / 23	15 / 24	9 / 11
Conviction percentages	56.52%	62.50%	81.82%

Note. Returning to the community on full or day parole following McKenzie Unit treatment were recoded as granted early release; returning to the community on Mandatory Supervision, Warrant Expiry Date, or by escaping were recoded as not granted early release.

6.1.3 Nonviolent Recidivism

The proportion of the PCL-R groups convicted of a Nonviolent offence following McKenzie Unit treatment is listed in Figure 6.3, and the Nonviolent recidivism base rate for the total sample was 42.45% (45 / 106). Bartholomew's test for qualitatively ordered proportions (Fleiss, 1981) was significant ($\chi^2 = 4.35$, $df = 3$, $p < .05$), with the high PCL-R group recidivating Nonviolently at the highest rate, and the low PCL-R group reoffending at the lowest rate.

A two-way (release type by recidivism) log-linear analysis (BMDP 4F; Dixon, 1990) was significant, χ^2 (8 = 26.19, $p = .001$), for the second-order effect analyzed separately; this second-order effect was analyzed separately, following significant marginal and partial associations for release type by recidivism, derived from the third-order model of release type by recidivism by psychopathy group, as suggested by Dixon (1990). Offenders granted early release following McKenzie Unit treatment were less likely to recidivate Nonviolently than offenders not granted early release, with failure rates of 29.17% and 53.45%, respectively. Nonviolent recidivism rates for the psychopathy groups by release type are summarized in Table 6.3.

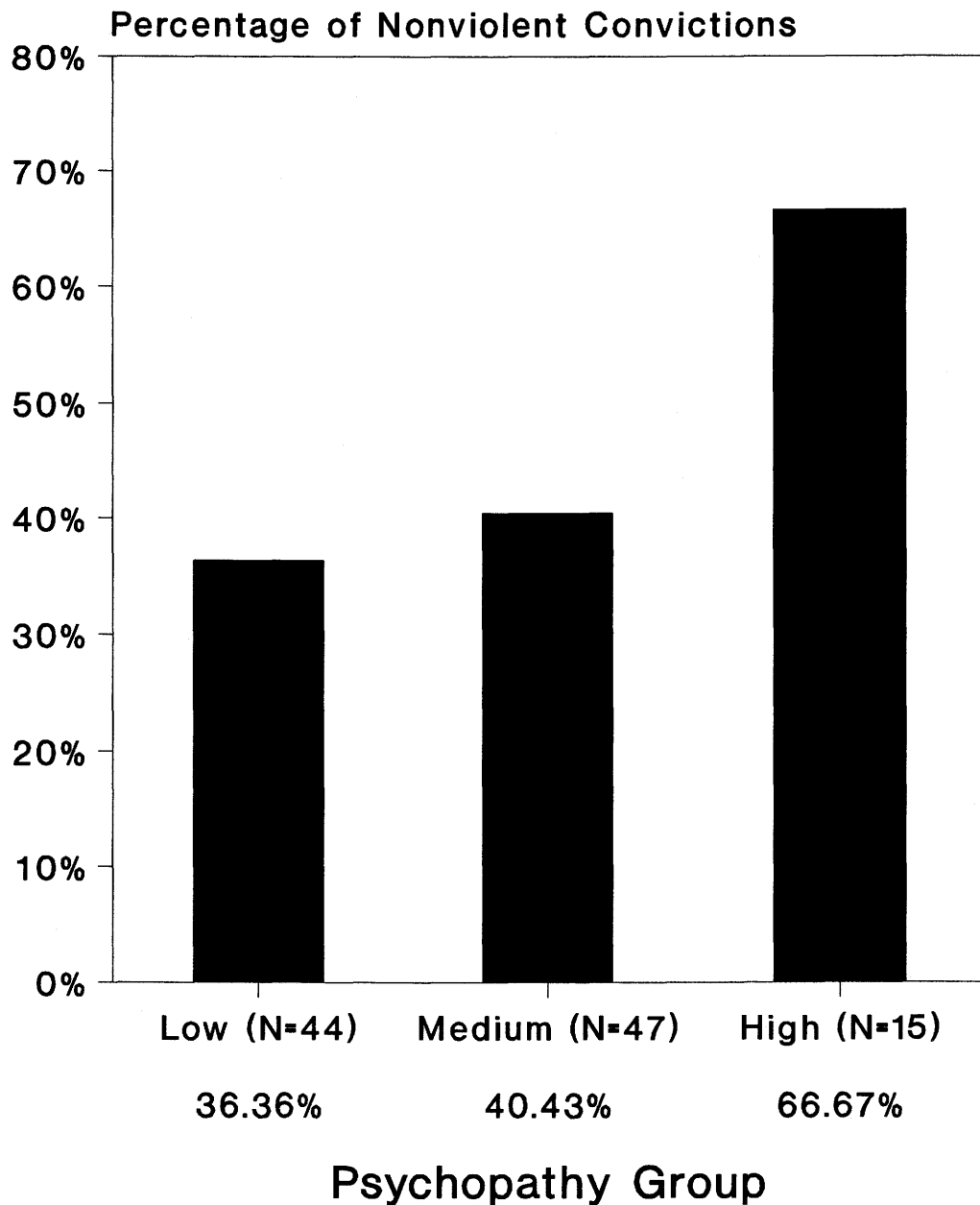


Figure 6.3. Proportion of offenders in the low, medium, and high Revised Psychopathy Checklist groups convicted of a Nonviolent offence, following treatment.

Table 6.3. Nonviolent recidivism rates for the low, medium, and high Revised Psychopathy Checklist groups by release type, following treatment.

	Psychopathy Groups		
	Low	Medium	High
Release type	(N=44)	(N=47)	(N=15)
<u>Granted early release</u>			
Number of releases			
resulting in NV recid.	5 / 21	7 / 23	2 / 4
NV recidivism percentages	23.81%	30.43%	50.00%
<u>Not granted early release</u>			
Number of releases			
resulting in NV recid.	11 / 23	12 / 24	8 / 11
NV recidivism percentages	47.83%	50.00%	72.73%

Note. Returning to the community on full or day parole following McKenzie Unit treatment were recoded as granted early release; returning to the community on Mandatory Supervision, Warrant Expiry Date, or by escaping were recoded as not granted early release. NV = Nonviolent; recid. = recidivism.

6.1.4 Violent Recidivism

The proportion of the PCL-R groups convicted of a Violent offence are presented in Figure 6.4, and the Violent base rate for the total sample was 27.36% (29 / 106). Bartholomew's test for qualitatively ordered proportions (Fleiss, 1981) was not significant, although there was a tendency for the high and medium PCL-R groups to commit Violent offences at a higher rate than the low PCL-R group ($\chi^2 = 3.11$, $df = 3$, $.05 < p < .10$).

None of the second or third-order effects of a three-way log-linear analysis were significant (psychopathy by release type by recidivism; BMDP 4F; Dixon, 1990), but the first-order effect of recidivism was significant (χ^2 , 1, = 22.55, $p = .000$); offenders were not likely to recidivate Violently. The number and proportion of Violent recidivism for the PCL-R groups by release type are presented in Table 6.4.

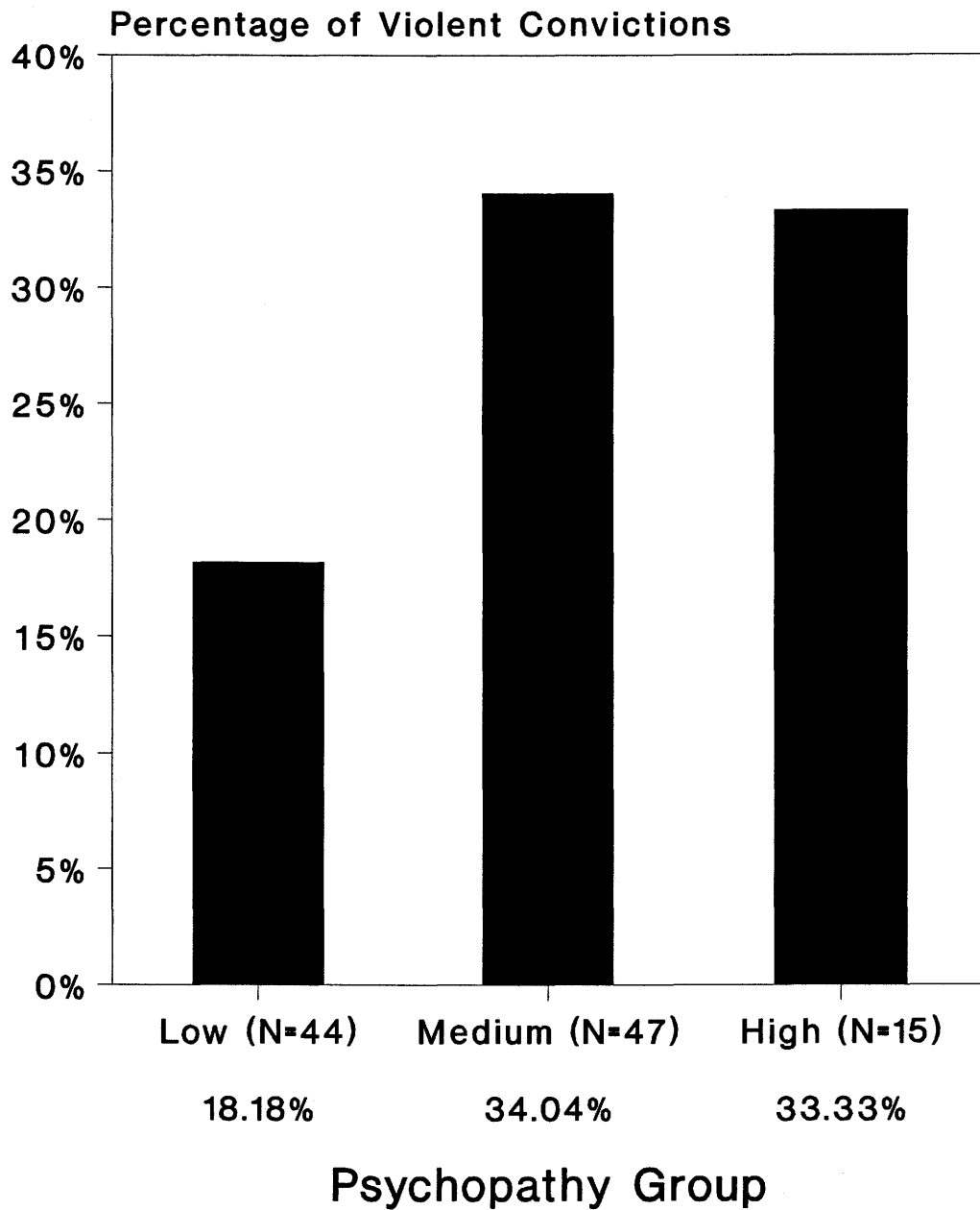


Figure 6.4. Proportion of offenders in the low, medium, and high Revised Psychopathy Checklist groups convicted of a Violent offence, following treatment.

Table 6.4. Violent conviction rates for the low, medium, and high Revised Psychopathy Checklist groups by release type, following treatment.

	Psychopathy Groups		
	Low	Medium	High
Release type	(N=44)	(N=47)	(N=15)
<u>Granted early release</u>			
Number of releases			
resulting in VI recid.	2 / 21	7 / 23	1 / 4
VI recidivism percentages	9.52%	30.43%	25.00%
<u>Not granted early release</u>			
Number of releases			
resulting in VI recid.	6 / 23	9 / 24	4 / 11
VI recidivism percentages	26.09%	37.50%	36.36%

Note. Returning to the community on full or day parole following McKenzie Unit treatment were recoded as granted early release; returning to the community on Mandatory Supervision, Warrant Expiry Date, or by escaping were recoded as not granted early release. VI = Violent; recid. = recidivism.

6.2 Correlational Analyses:

Relationship Between the PCL-R and Recidivism

Correlations between the PCL-R, PCL-R Factors, and recidivism are listed in Table 6.5. To determine if the PCL-R Factors differed in their intercorrelations with recidivism following McKenzie Unit treatment, the T statistic representing the difference between two dependent correlations was calculated (Steiger, 1980, p. 249). Although PCL-R Factor Two scores were more strongly correlated with all categories of recidivism compared with PCL-R Factor One scores, only the difference between the two correlations for new Convictions reached significance, as indicated in Table 6.5.

Table 6.5. Point-biserial correlations between the Total PCL-R score, PCL-R Factors and recidivism (yes/no).

Recidivism categories	PCL-R Factors		PCL-R	
	1	2	Total score	<u>T</u> ^a
Any Reincarceration	.00	.07	.02	-.69
New Conviction	.03	.23	.10	-2.03 ⁺
Nonviolent recidivism	.02	.21	.08	-1.92
Violent recidivism	.05	.14	.06	-.90

Note: PCL-R = Revised Psychopathy Checklist (Hare, 1985a). All correlations between psychopathy and recidivism (no = 0; 1 = yes) are based on N = 106. No correlations were significantly different from zero when the family-wise Type I error rate for each PCL-R score (Total, Factor 1, Factor 2) was held at $\alpha_{FW} = .05$ by setting the test-wise error rate at $\alpha_{TW} = .05 / 4 = .01$.

⁺ p < .05 (two-tailed).

^a The difference between PCL-R Factor One and PCL-R Factor Two correlations with recidivism were calculated using the formula presented by Steiger (1980, p. 249); T is distributed as Student's t with df = N - 3.

6.3 Survival Analyses

Survival analysis is a technique for analyzing the length of time to a response (Brown, 1982). This statistical technique distinguishes itself from other methodologies in that all data are incorporated into the analyses, regardless of whether the subject has reached the criterion response, dropped out of the study for non event-related reasons, or the study period has ended (Dixon, 1990).

Survival analysis is well-suited for recidivism studies because offenders are not all released at the same time; these differing follow-up periods are taken into account when estimating survival curves. In addition, because survival analysis considers all subjects, those offenders that have not recidivated before the end of the study period are still included in the analyses.

For the current study, survival curves were estimated for the low, medium, and high PCL-R groups following release from prison after McKenzie Unit treatment. As mentioned previously, because days to recidivism was defined as the number of days in the community it took the inmate to acquire a conviction for the offence category of interest, days incarcerated for previous non-category recidivism were removed from days-to-recidivism estimates.

The survival functions were estimated using the product-limit Kaplan-Meier method, and equality between survival functions was tested by the Mantel-Cox statistic (BMDP 1L; Dixon, 1990).

To rule out potential cultural or racial differences between psychopathy groups, analyses were re-run stratifying subjects on race (Caucasian or non-Caucasian; BMDP 1L; Dixon, 1990). Because relatively few non-Caucasian offenders were in the included sample (high, medium, and low PCL-R groups had 5, 22, and 11 subjects in them, respectively), survival curves of just the non-Caucasian subjects were not plotted. However, survival curves for the entire included sample ($N = 106$) and the Caucasian-only included sample ($N = 68$) were plotted.

A clearer monotonic trend for the recidivism survival curves of the low, medium, and high PCL-R groups after eliminating the thirty-eight non-Caucasian offenders would suggest the PCL-R is more predictive of recidivism for Caucasian offenders than non-Caucasian offenders. If, on the other hand, the Caucasian-only recidivism survival curves for the PCL-R groups are not more monotonically clear than the entire included sample ($N = 106$), the conclusions are less straightforward. The analyses may suggest either the PCL-R is equally predictive of recidivism for non-Caucasian and Caucasian offenders, or

the smaller number of subjects may have reduced the power of the survival analyses.

6.3.1 Any Reincarceration

Survival curves for any Reincarceration following McKenzie Unit treatment are plotted in Figure 6.5. The generalized Savage (Mantel-Cox) statistic indicated there was a tendency for the survival curves to be different from one another, $\chi^2 (2, N = 106) = 4.68, p = .10$; the low psychopathy group was estimated to remain out of prison longer than the medium and high PCL-R groups. (The Mantel-Cox trend statistic, a more powerful test for detecting ordered survival curve effects, was significant, $\chi^2 (1, N = 106) = 4.44, p = .04$, denoting differences between the three monotonically-ordered PCL-R groups).

From Figure 6.5, the estimated probability of remaining out of prison after one year was about .41 for the low psychopathy group, .33 for the medium group, and .15 for the high psychopathy group. The estimated probability of not being Reincarcerated beyond two and a half years was about .23 for the low group, .09 for the medium group, and .15 for the high group.

Race-stratified survival functions were not significantly different from one another, $\chi^2 (2, N = 106) =$

3.59, $p = .17$, indicating Reincarceration survival functions combined from each race stratum reduce differences between psychopathy groups. From inspecting Figures 6.5 and 6.6, survival curves for Caucasian-only offenders were slightly more distinct and less overlapping than survival curves for all offenders.

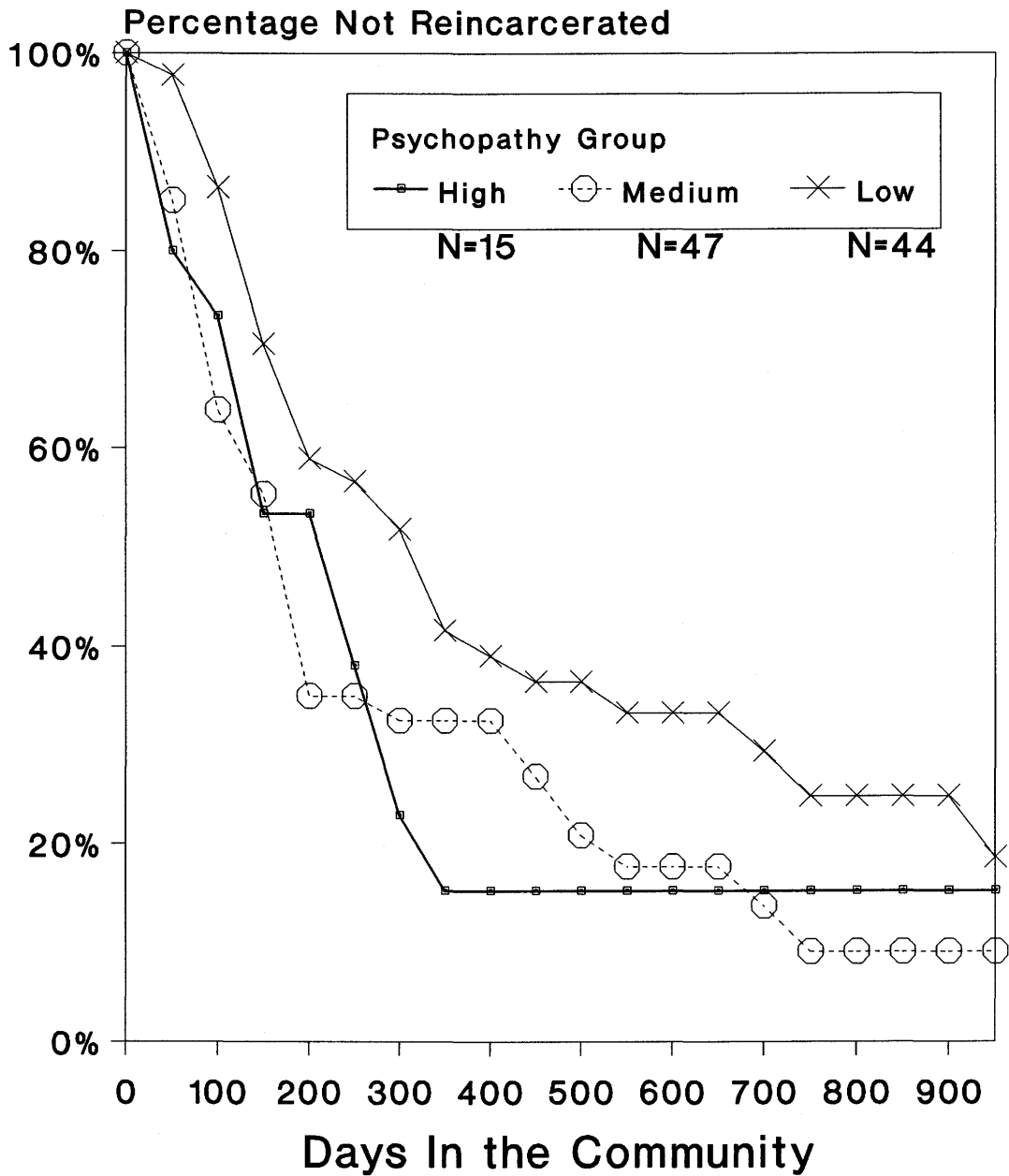


Figure 6.5. Estimated survival curves indicating the percentage of offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not be Reincarcerated as a function of days released into the community, following treatment.

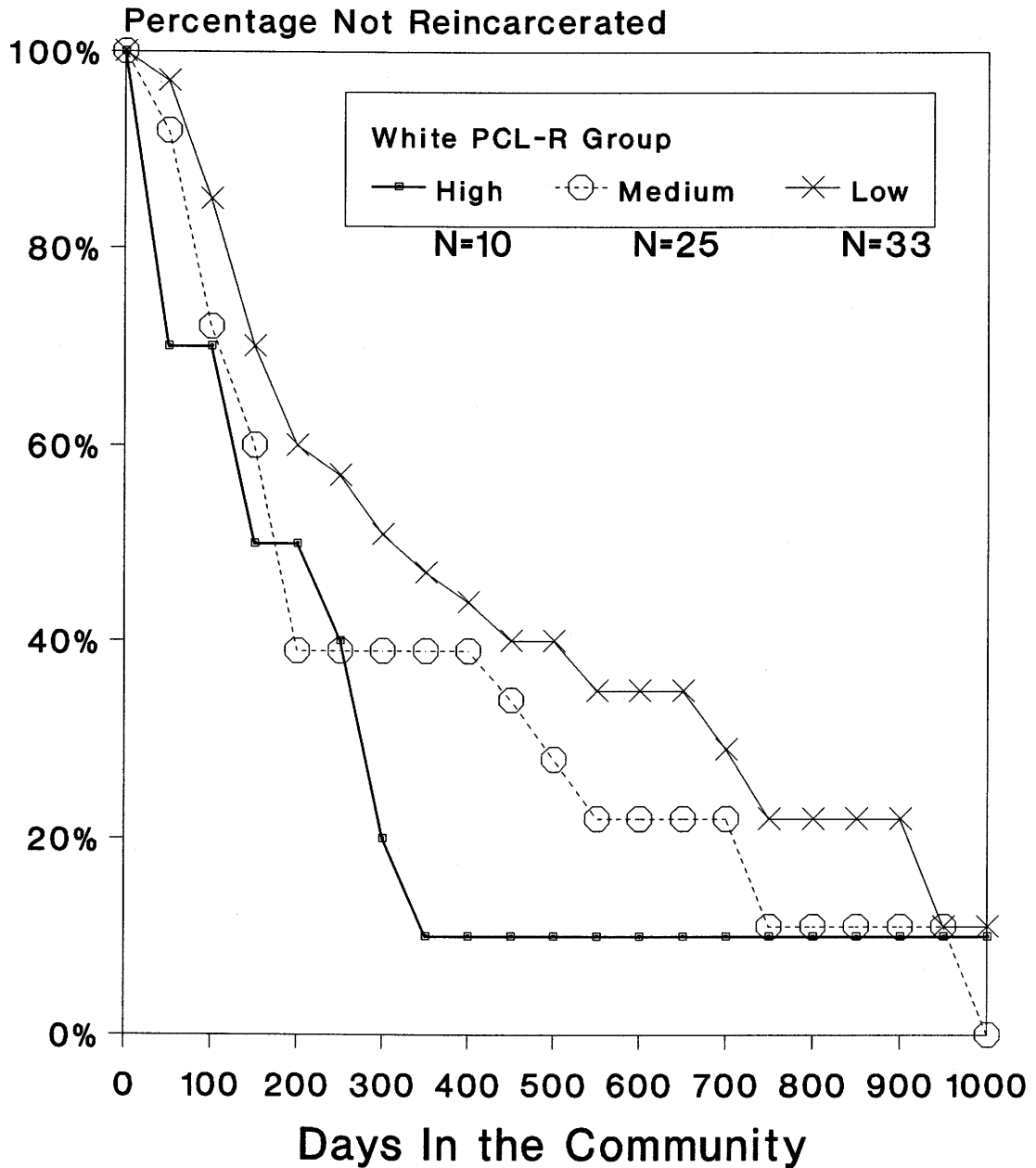


Figure 6.6. Estimated survival curves indicating the percentage of Caucasian offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not be Reincarcerated as a function of days released into the community, following treatment.

6.3.2 New Convictions

Survival curves for new Convictions following McKenzie Unit treatment are shown in Figure 6.7. The generalized Savage (Mantel-Cox) statistic indicated the three survival curves were significantly different from one another, χ^2 (2, $N = 106$) = 8.12, $p = .02$. After one year, the estimated probability of remaining out of prison for a new Conviction was about .62 for the low psychopathy group, .54 for the medium group, and .17 for the high group. The estimated probability of not receiving a new Conviction after two and a half years was about .47 for the low PCL-R group, .26 for the medium group, and .17 for the high group.

The generalized Savage (Mantel-Cox) statistic stratified for race (Caucasian/not Caucasian) was significant, χ^2 (2, $N = 106$) = 7.18, $p = .03$, indicating the new Conviction survival curves for the three psychopathy groups were different from one another, even after taking race into account. From Figures 6.7 and 6.8 we can see the survival functions for Caucasians are clearer than the survival functions for all offenders. The high PCL-R group generally recidivated at the highest rate, and the low PCL-R group recidivated at the lowest rate.

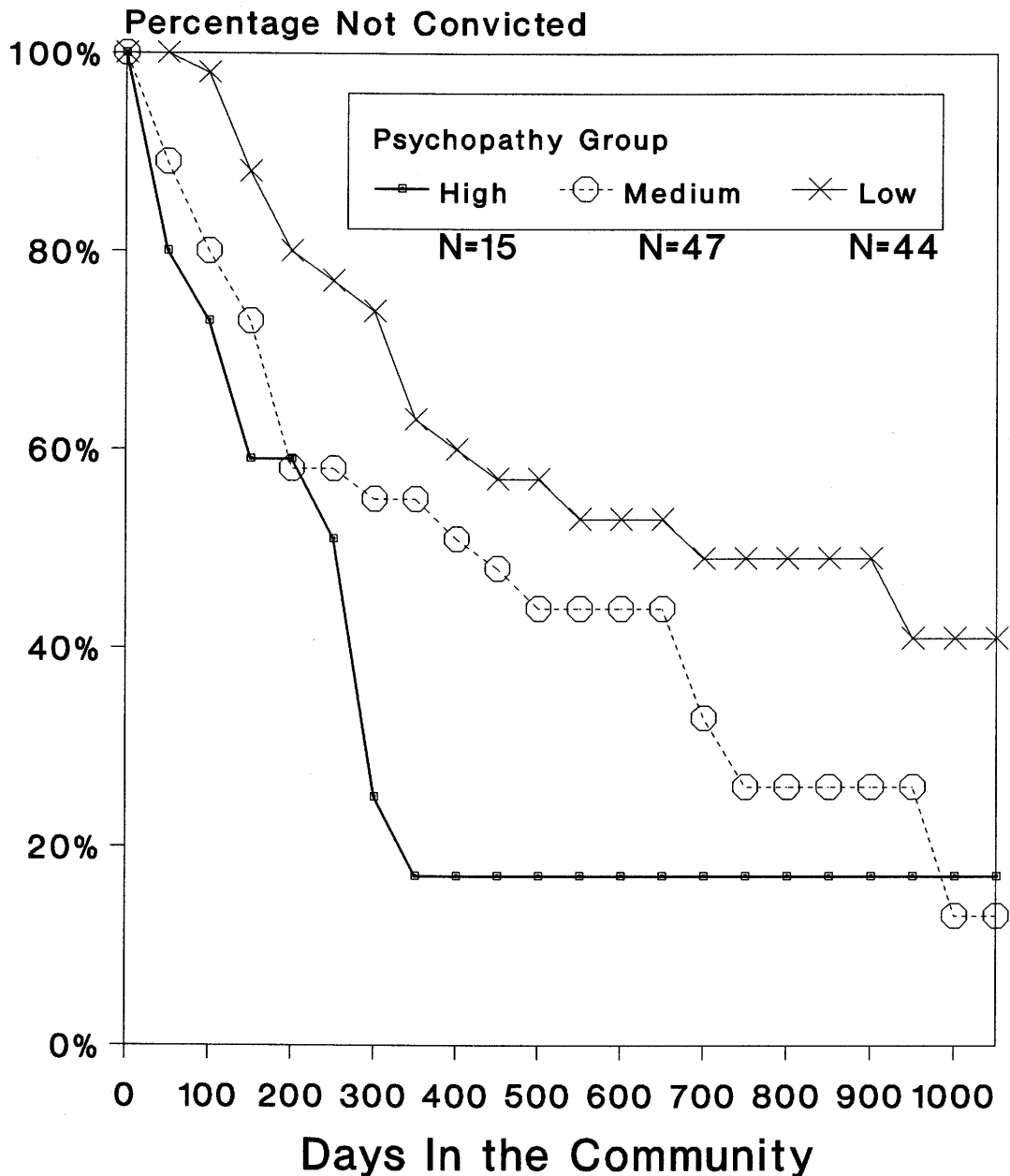


Figure 6.7. Estimated survival curves indicating the percentage of offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not receive a new Conviction as a function of days released into the community, following treatment.

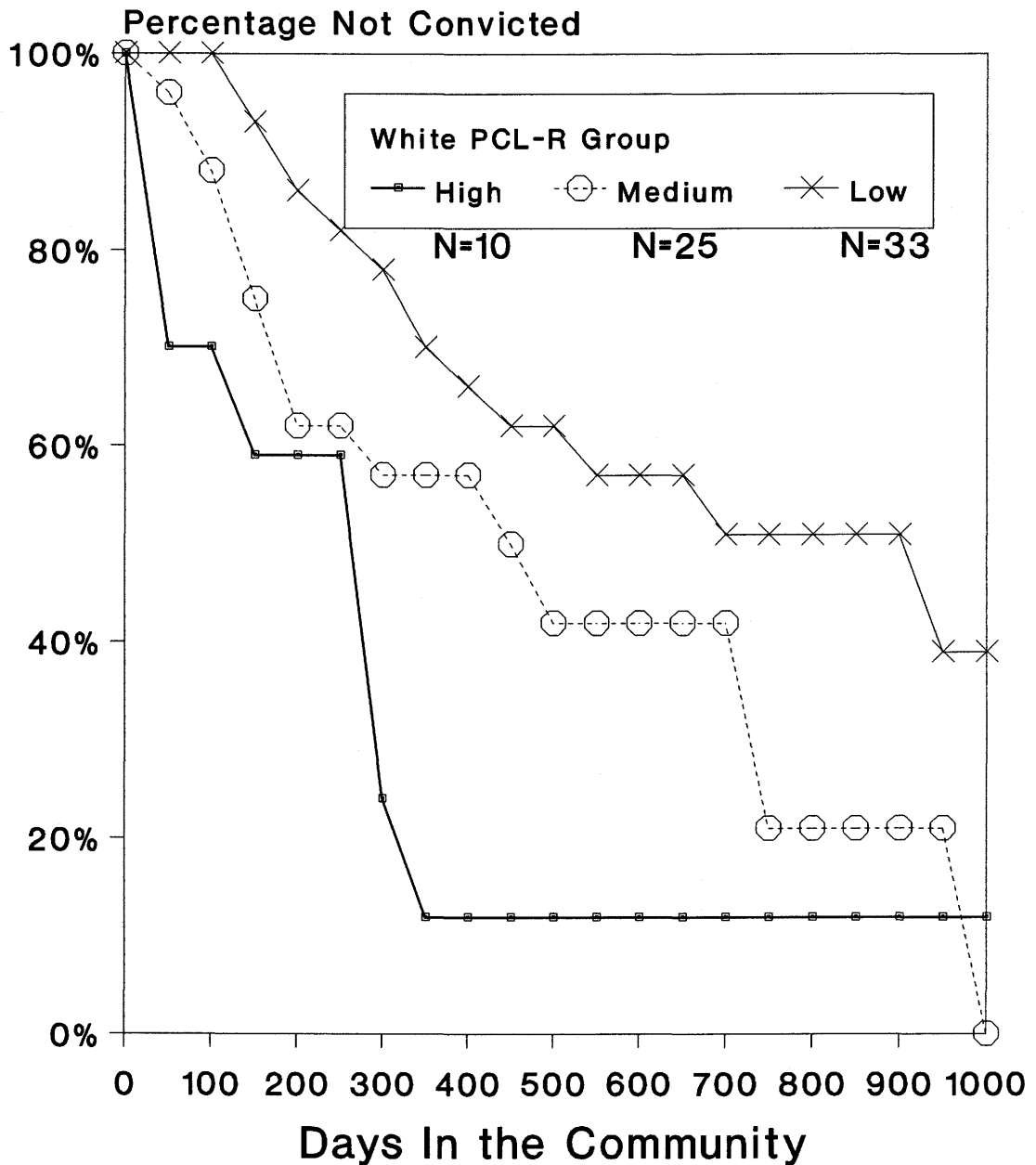


Figure 6.8. Estimated survival curves indicating the percentage of Caucasian offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not receive a new Conviction as a function of days released into the community, following treatment.

6.3.3 Nonviolent Recidivism

The generalized Savage (Mantel-Cox) statistic for Nonviolent recidivism was significant, $\chi^2 (2, N = 106) = 6.87, p = .03$, indicating the survival curves for the three PCL-R groups in Figure 6.9 were significantly different from one another. After being released from prison for one year following McKenzie Unit treatment, the estimated probability of not receiving a Nonviolent conviction was about .67 for the low psychopathy group, .62 for the medium group, and .25 for the high group, and the estimated probability of remaining out of prison for a Nonviolent conviction after two and a half years was about .56 for the low PCL-R group, .40 for the medium PCL-R group, and .25 for the high group.

The tendency for the high psychopathy group to be reconvicted for a Nonviolent offence following release from treatment is present even after the effects of race have been stratified, $\chi^2 (2, N = 106) = 6.69, p = .04$. From Figures 6.9 and 6.10, we can see the survival curves for Caucasian-only offenders are more distinct and non-overlapping than the survival curves for all offenders.

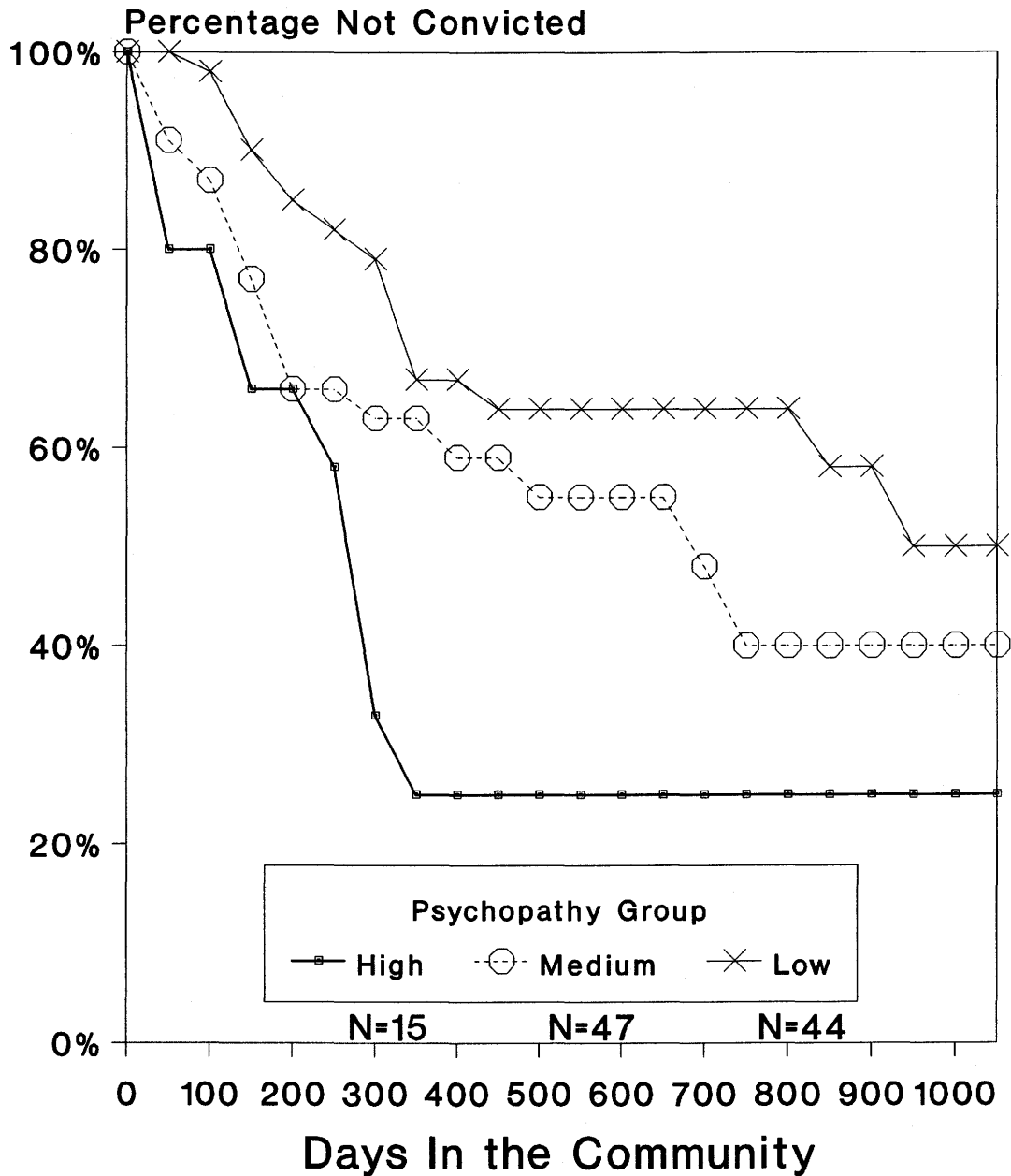


Figure 6.9. Estimated survival curves indicating the percentage of offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not be reconvicted for a Nonviolent offence as a function of days released into the community, following treatment.

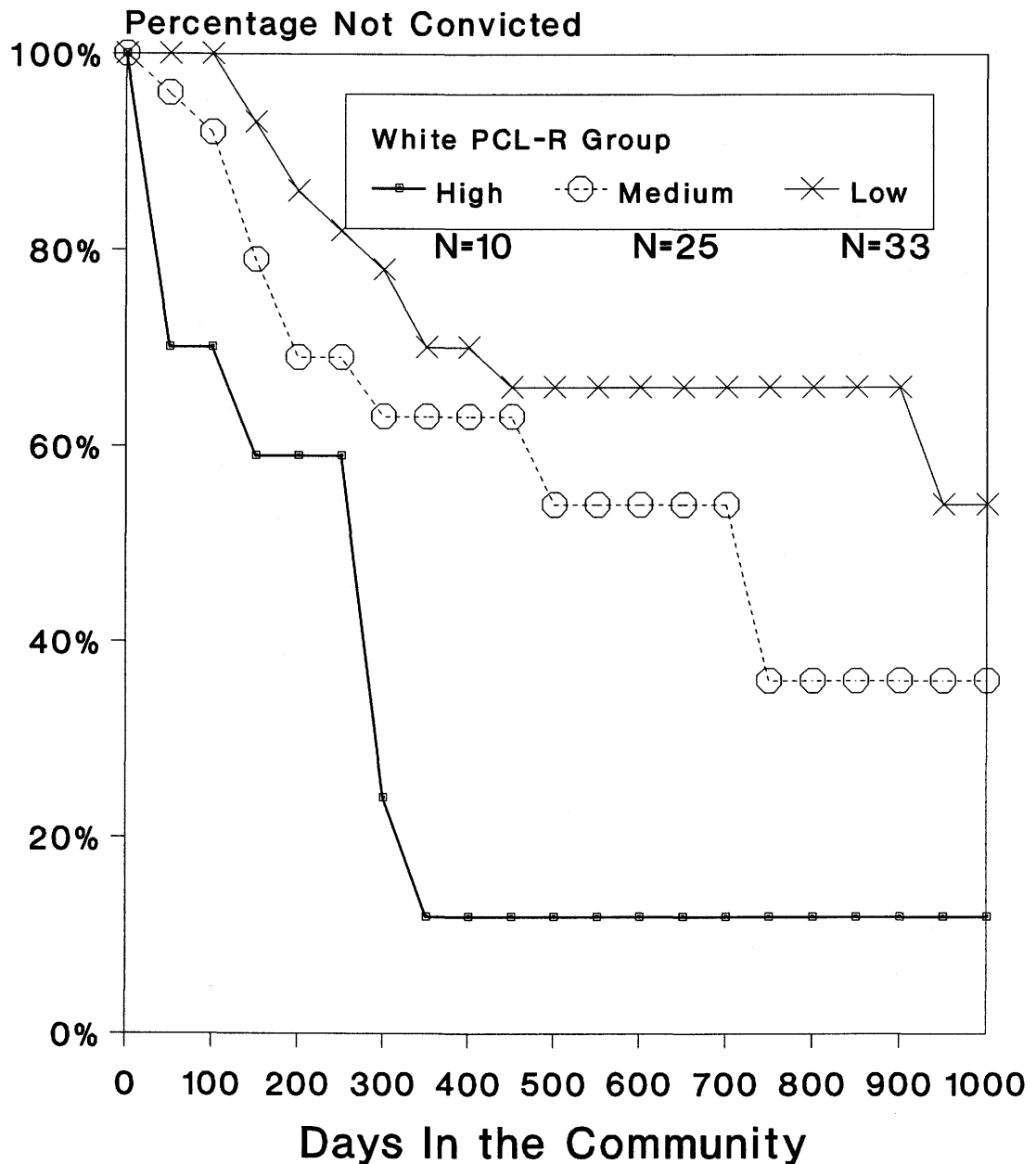


Figure 6.10. Estimated survival curves indicating the percentage of Caucasian offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not be reconvicted for a Nonviolent offence as a function of days released into the community, following treatment.

6.3.4 Violent Recidivism

Although not significant, there was a tendency for the Violent recidivism survival curves for the three psychopathy groups in Figure 6.11 to be different from one another, χ^2 (2, N = 106) = 4.81, p = .09, with the low PCL-R group remaining out of prison longer than the medium and high groups. The estimated probability of not receiving a Violent conviction at one year following treatment was about .86 for the low PCL-R group, .68 for the medium group, and .63 for the high group. The estimated probability of remaining out of prison for a Violent conviction beyond two and a half years was about .75 for the low psychopathy group, .57 for the medium group, and .55 for the high group.

After stratifying for race, the generalized Savage (Mantel-Cox) statistic was not significant, χ^2 (2, N = 106) = 3.53, p = .17, indicating that survival functions combined from each race stratum reduce differences between PCL-R groups. As shown in Figures 6.11 and 6.12, the Violent recidivism survival functions for the high and medium psychopathy groups overlap a good deal, but the curves overlap less for Caucasian-only compared with all offenders.

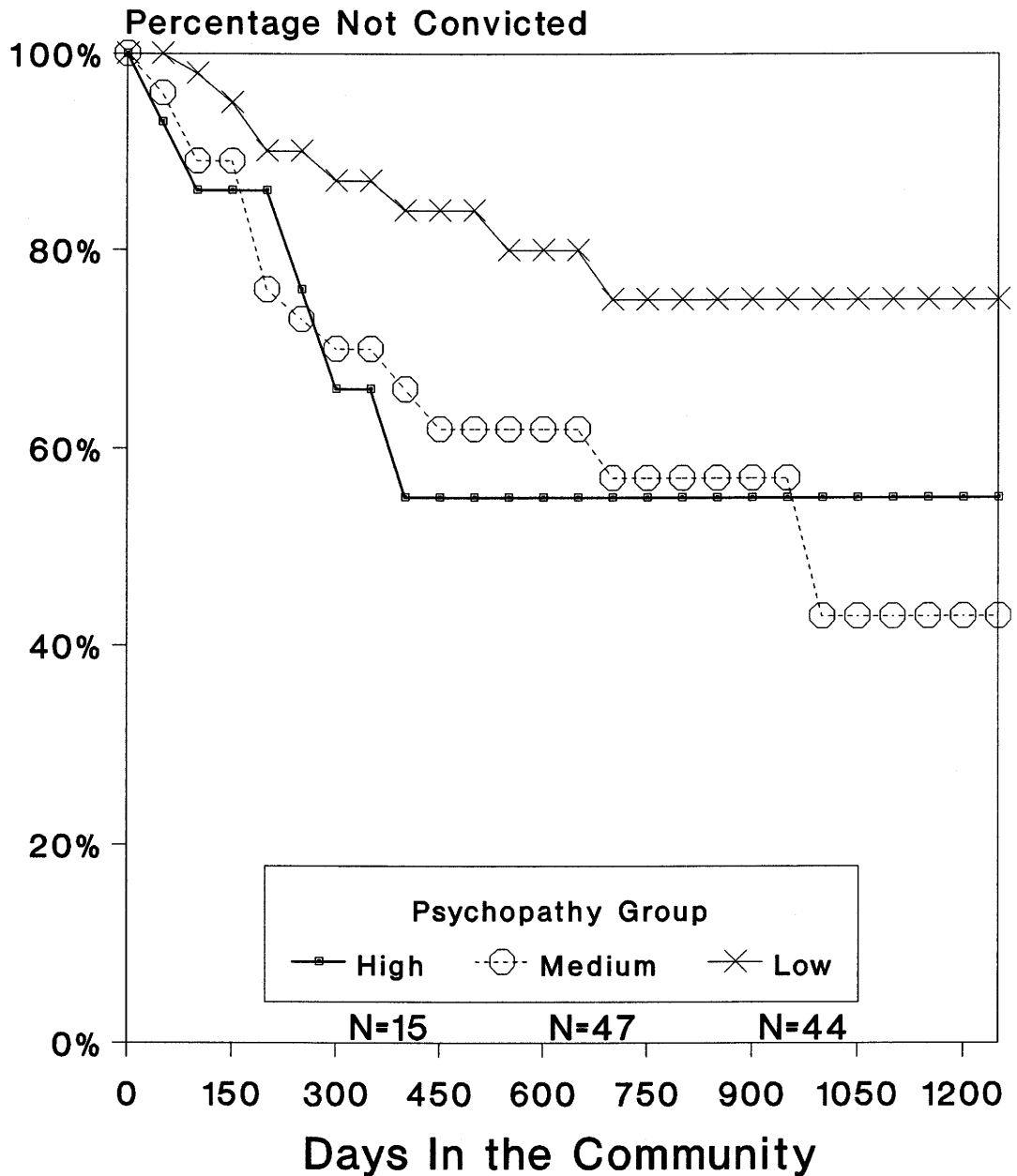


Figure 6.11. Estimated survival curves indicating the percentage of offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not be reconvicted for a Violent offence as a function of days released into the community, following treatment.

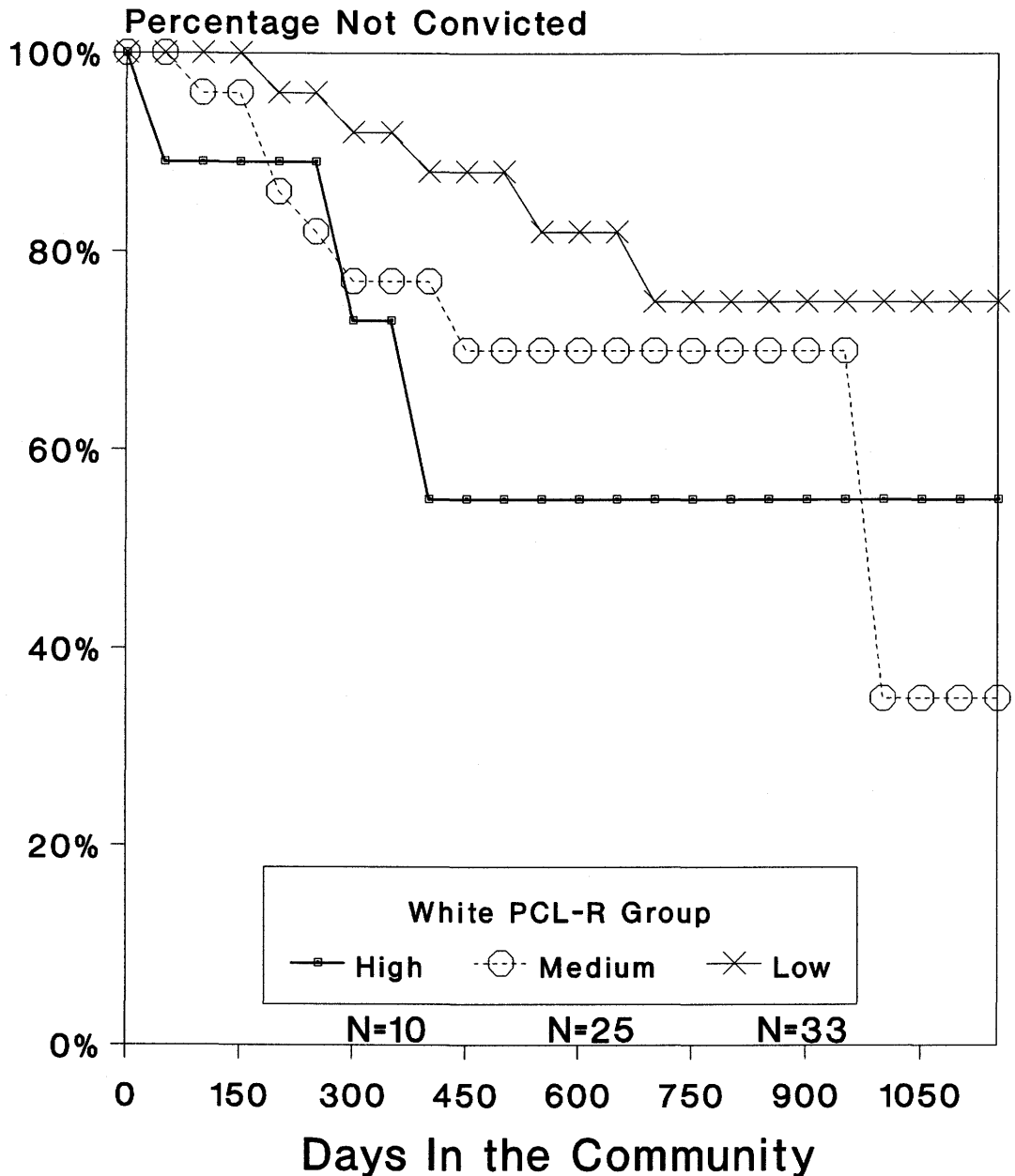


Figure 6.12. Estimated survival curves indicating the percentage of Caucasian offenders in the low, medium, and high Revised Psychopathy Checklist groups who will not be reconvicted for a Violent offence as a function of days released into the community, following treatment.

7. RECIDIVISM RESULTS, PART TWO:

PREDICTIVE EFFICIENCIES OF THE REVISED PSYCHOPATHY CHECKLIST, STATISTICAL INFORMATION ON RECIDIVISM SCALE, AND SALIENT FACTOR SCORE

7.1 Psychometric Characteristics of the Actuarial Risk Scales

7.1.1 Statistical Information On Recidivism

Three raters completed six, twenty-three, and seventy-seven SIR ratings used in the analyses, and there was no difference across raters ($F(2, 103) = .53, p = .59$). The mean SIR score was 6.09 ($S.D. = 7.72$; median = 7). The present sample had much higher scores than the SIR construction or validation samples (Nuffield, 1982, p. 45), indicating greater risk to recidivate, as defined by the SIR. Cronbach's alpha coefficient was .56, and interrater reliability for the subsample of fourteen offenders was $r = .90, p = .000$.

7.1.2 Salient Factor Score

Three raters completed six, twenty-three, and seventy-seven SFS ratings used in the analyses, and there was no difference across raters ($F(2, 103) = .88, p = .42$). The mean SFS score of 2.75 ($S.D. = 2.21, N = 106$) is lower than the construction and validation sample means of 5.03 and 5.78, respectively (Hoffman, 1983), but is more similar to a Canadian federal medium security prison mean of 3.96 ($S.D. = 2.46$; Hart, Kropp, & Hare, 1988b). The median SFS scores for the present and Hart et al. (1988b) studies were 2 and 3, respectively; offenders in the current study were poorer release risks, as defined by the SFS, than would be expected from general inmate samples. Cronbach's alpha coefficient was .66, and interrater reliability for the subsample of fourteen offenders was $r = .91, p = .000$.

7.2 Evaluating Predictive Efficiency

At least two methods may be used to evaluate the predictive efficiency of the PCL-R compared to the SIR and SFS scales. First, regression analyses permit the predictive contribution of the scales singly and in combination to be assessed. Stepwise regression allows the

researcher to determine which are the best predictors for the sample, while hierarchical regression is useful in ascertaining the relative contribution of the scales above-and-beyond those already entered into the regression equation.

Second, and more relevant for binary decision-making (e.g., to deny or grant early release) are contingency tables; high- and low-risk groups may be defined according to the PCL-R, SIR, and SFS scales, and the accuracy of recidivism prediction (yes/no) may be appraised. Ideally, a test instrument should maximize the number of correct predictions (i.e., valid positives and valid negatives) while minimizing the number of incorrect predictions (i.e., false positives and false negatives).

Before presenting the predictive efficiencies of the PCL-R, SIR, and SFS, the intercorrelations between the three scales, and the relationship between recidivism and the three scales and prior criminal history are presented.

7.3 PCL-R, SIR, and SFS Intercorrelations

The correlations between the Total PCL-R score, PCL-R Factor One, and PCL-R Factor Two with the SIR and SFS are presented in Table 7.1. Differences between independent correlations (Steiger, 1980, p.249), also shown in Table 7.1, indicate PCL-R Factor Two was more strongly correlated with the SIR and SFS compared with PCL-R Factor One. The two actuarial scales were correlated $-.74$ ($p = .000$) with each other.

Table 7.1. Intercorrelations between the Total PCL-R score, PCL-R Factors, and the two actuarial risk scales.

	PCL-R Factors		PCL-R	
	-----		total	
Actuarial risk scale	1	2	score	<u>T</u> (103) ^a

Statistical Information				
On Recidivism Scale	.20	.50**	.41**	-3.39 ⁺⁺
Salient Factor Score	-.25*	-.50**	-.49**	-2.82 ⁺

Note: PCL-R = Revised Psychopathy Checklist (Hare, 1985a). All correlations between psychopathy and the actuarial scales are based on N = 106. The family-wise Type I error rate for each PCL-R score (Total, Factor 1, Factor 2) was held at $\alpha_{FW} = .05$ by setting the test-wise error rate at $\alpha_{TW} = .05 / 2 = .03$.

* $p_{FW} < .05$, $p_{TW} < .03$.

** $p_{FW} < .01$, $p_{TW} < .005$.

+ $p < .01$ (two-tailed).

++ $p < .001$ (two-tailed).

^a The difference between PCL-R Factor One and PCL-R Factor Two correlations with the actuarial scales were calculated using the formula presented by Steiger (1980, p. 249); T is distributed as Student's t with df = N - 3.

7.4 Correlational Analyses Between Prior Criminal History, Actuarial Scales, and Recidivism⁵

Correlations between the SIR, SFS, and four recidivism indices, upon which the subsequent regression analyses were performed, are listed in Table 7.2. (PCL-R recidivism correlations, also entered in the regression analyses, were previously presented in Table 6.5). The magnitude of the correlation coefficients between past criminal history, as measured by number of convictions committed per year free, and recidivism, are also shown in Table 7.2. The actuarial scales are equally good at predicting recidivism following McKenzie Unit treatment as the criminal history variables, but only Nonviolent Recidivism was predicted with any real success.

⁵ Space limitations in this thesis do not permit an adequate presentation of all the variables examined. However, treatment motivation/effort and improvement ratings (Ogloff et al., 1990) were coded from Institutional files. Interestingly, motivation/effort proved to be among the single best predictors of all categories of recidivism, and both variables were the only significant predictors of violent recidivism, with correlations of $r = .28$ ($p = .003$) for motivation/effort and $r = .18$ ($p = .06$) for improvement coded from discharge summaries; the two variables were correlated $r = .82$ with one another, so motivation/effort and improvement may not be considered independent ratings.

Table 7.2. Point-biserial correlations between recidivism (yes/no), convictions per year free prior to treatment, and actuarial recidivism risk scales.

Predictor measures	Recidivism categories			
	RE	NEW	NV	VI
<u>Previous convictions per year free^a</u>				
Technical revocations	.06	.12	.22	-.05
Nonviolent convictions	.10	.22	.33**	-.07
Violent convictions	-.07	-.14	-.10	-.12
<u>Actuarial risk scales</u>				
SIR	.18	.21	.27**	.00
SFS	-.09	-.17	-.33**	.10
<u>Revised Psychopathy Checklist^b</u>				
Total	.02	.10	.08	.06
Factor One	.00	.03	.02	.05
Factor Two	.07	.23	.21	.14

(Table continues)

(. . . continued)

Note: RE = Reincarcerations following McKenzie Unit treatment; NEW = new Convictions; NV = Nonviolent recidivism; VI = Violent recidivism; SIR = Statistical Information On Recidivism scale (Nuffield, 1982); SFS = Salient Factor Score (Hoffman, 1983). All correlations between previous criminal history and recidivism (no = 0; yes = 1) are based on $N = 106$. The family-wise Type I error rate for each previous conviction category (technical revocations, nonviolent convictions, violent convictions) was held at $\alpha_{FW} = .05$ by setting the test-wise error rate at $\alpha_{TW} = .05 / 3 = .02$; The family-wise Type I error rate for each actuarial risk scale (SIR, SFS) was held at $\alpha_{FW} = .05$ by setting the test-wise error rate at $\alpha_{TW} = .05 / 2 = .03$.

* $p_{FW} < .05$, $p_{TW} < .02$ (two-tailed).

** $p_{FW} < .05$, $p_{TW} < .03$ (two-tailed).

^a Previous convictions per year free are the average number of convictions received per year that the inmate was not incarcerated.

^b These PCL-R scores were reported in Table 6.5, and are reproduced here for ease of comparison between the SIR and SFS recidivism correlations.

7.5 Logistic Regression Analyses

Logistic regression analyses were run on BMDP LR (Dixon, 1990), with continuous independent variables (PCL-R Factor One, PCL-R Factor Two, SIR, and SFS scores), and categorical dependent variables (recidivism/no recidivism). If Factors One or Two of the PCL-R contributed significantly to the prediction of recidivism, an hierarchical logistic regression was performed to determine if the PCL-R Factors would still be able to significantly improve upon the prediction of outcome after the SIR and SFS were forced into the regression equation.

7.5.1 Any Reincarceration

The SIR score entered the any Reincarceration stepwise regression model at step one, and was the only variable to enter the prediction of Reincarceration $\chi^2 (1, N = 106) = 3.29, p = .07$.

7.5.2 New Convictions

The PCL-R Factor Two entered the stepwise logistic model at step one, and was the only variable to enter the new Conviction regression equation, $\chi^2 (1, N = 106) = 5.65, p = .02$. However, if the SIR and SFS were forced into an hierarchical logistic model first, neither the PCL-R Factor One nor PCL-R Factor Two was able to significantly improve upon the prediction of outcome.

7.5.3 Nonviolent Recidivism

After the SFS entered the Nonviolent recidivism logistic model, $\chi^2 (1, N = 106) = 12.76, p = .000$, no other variables were able to significantly improve upon the prediction of outcome.

7.5.4 Violent Recidivism

None of the variables entered the logistic model (all p 's $> .16$), indicating that neither the PCL-R Factor One, PCL-R Factor Two, SIR, or SFS were significant predictors of Violent recidivism.

7.6 Forming High- and Low-Recidivism-Risk Groups by Matching the Selection Ratio with the Base Rate, Prior to RIOC and Kappa Coefficient Analyses

In addition to continuous predictor variables (PCL-R, SIR, SFS) presented in the above logistic regression analyses, dichotomous groups may be formed. For example, based on a certain cutpoint, predictor variables may be divided into high- and low-risk groups to predict success or failure of the McKenzie Unit Therapeutic Community treatment program, following release from incarceration. Contingency table analyses, such as the RIOC and kappa coefficient, could then be calculated to indicate predictive efficiency.

It is important to recognize that RIOC measures and kappa coefficients may be misleading if base rates and selection ratios are highly discrepant, because both

statistics make adjustments based on cell marginals. This means the RIOC index or kappa coefficient may appear to be excellent or marginal recidivism predictors, respectively, when base rate responding may be more accurate. Put another way, more correct predictions could be made by random base rate responding than by using the recidivism predictor, yet the statistics may appear to make predictions better than chance. By setting the selection ratio equal to the base rate, the RIOC or kappa coefficient values may be more useful in suggesting how well the predictive instrument improves upon base rate predictions. Clearly, to justify using a predictive instrument, predictive accuracy should be better than base rate predictions.

To illustrate the effect discrepant base rates and selection ratios may have on predictive efficiency, a numerical example is provided. The base rate of any Reincarceration was around 80% for the current study; because the "high-risk" psychopathy group is traditionally defined as offenders with PCL-R scores equal to or greater than 30, or roughly one standard deviation above the mean, the selection ratio would be around sixteen percent. Given the cell marginals, the maximum number of valid positives and negatives would be 16% and 20%, respectively, for a maximum of 36% possible correct decisions. Because the RIOC is a measure of agreement after adjusting for the maximum

number of predictions possible (given the cell marginals), 36% correct predictions yield a RIOCI value of 100. The maximum predictive agreement between the predictor measure and recidivism, taking chance into account (again, given the cell marginals), is $k = .09$. The absolute RIOCI measure and kappa coefficient suggest predictions are substantially accurate or marginally accurate, respectively, when in actuality 44% more (80% - 36%) correct predictions could have been made by random base rate predictions.

To get around the sometimes misleading values resulting from RIOCI statistics and kappa coefficients, the selection ratios and base rates of recidivism were equated as closely as possible in subsequent analyses.

7.7 Relative Improvement Over Chance Analyses

The RIOCI is a statistical index of predictive efficiency. In addition to assessing correct predictions (i.e., valid positives and valid negatives) beyond expected or chance levels, the RIOCI takes into account the maximum limits in decision-making (Loeber & Dishion, 1983). The base rate, calculated from the sample, is the percentage of occurrences of the criterion variable (i.e., the sum of the false negatives and valid positives), whereas the selection ratio is the percentage of occurrences of the predictor

variable (i.e., the sum of the false positives and valid positives).

7.7.1 RIOC for the PCL-R, SIR, and SFS

As indicated by Table 7.3, the predictive efficiencies of the PCL-R, SIR, and SFS for identifying high- and low-risk offenders vary depending on the criterion variables. The SFS, for example, was more accurate than either the PCL-R or SIR for predicting any Reincarceration and Nonviolent recidivism. New Conviction predictive efficiencies, on the other hand, were best predicted by the SIR. Only the PCL-R was able to predict Violent recidivism beyond chance; both the SIR and SFS scales yielded more errors than random base rate Violence predictions.

7.7.2 RIOC for PCL-R Factors One and Two

Because the relative contribution of the PCL-R Factors in predicting recidivism was of interest, RIOC statistics for each of the two PCL-R Factors were calculated separately. As shown in Table 7.4, while both PCL-R Factors improved upon chance predictions for new Convictions and Nonviolent recidivism, Factor Two made a larger contribution than Factor One. Any Reincarceration was only

predicted by Factor Two, with marginal success.

Interestingly, PCL-R Factors One and Two contributed roughly equally to the prediction of Violent recidivism.

Table 7.3. PCL-R, SIR, and SFS high- and low-risk groups compared on correct and incorrect predictions of recidivism, and the Relative Improvement Over Chance index, after matching the base rates and selection ratios as closely as possible.

	Correct Predictions		Prediction Errors		
Predictor	-----		-----		
measure	Valid -	Valid +	False -	False +	RIOC

<u>Any Reincarceration</u>					
PCL-R	5.66%	61.32%	16.04%	16.98%	4.45
SIR	4.72%	59.43%	17.92%	17.92%	-2.34
SFS	8.49%	59.43%	17.92%	14.15%	15.06
<u>New Convictions</u>					
PCL-R	26.42%	26.42%	26.42%	20.75%	6.72
SIR	24.53%	33.02%	19.81%	22.64%	15.43
SFS	20.75%	32.08%	20.75%	26.42%	5.36
<u>Nonviolent Recidivism</u>					
PCL-R	35.85%	19.81%	22.64%	21.70%	9.17
SIR	37.74%	21.70%	20.75%	19.81%	17.06
SFS	46.23%	19.81%	22.64%	11.32%	36.81
<u>Violent Recidivism</u>					
PCL-R	54.72%	8.49%	18.87%	17.92%	6.59
SIR	51.89%	7.55%	19.81%	20.75%	-1.00
SFS	46.23%	4.72%	22.64%	26.42%	-20.17

(Table continues)

(. . . continued)

Note: N's in the high-risk group were:

Recidivism categories	Selection Ratios			base rates
	PCL-R	SIR	SFS	
Any Reincarceration	83	82	78	82
New Convictions	50	59	62	56
Nonviolent recidivism	44	44	33	45
Violent recidivism	28	30	33	29

N's in the low-risk group can be calculated by subtracting the N's in the high-risk group from 106.

RIOC = Relative Improvement Over Chance (Loeber & Dishion, 1983); PCL-R = Revised Psychopathy Checklist (Hare, 1985a); SIR = Statistical Information On Recidivism (Nuffield, 1982); SFS = Salient Factor Score (Hoffman, 1983).

Table 7.4. PCL-R Factor One and PCL-R Factor Two high- and low-risk groups compared on correct and incorrect predictions of recidivism, and the Relative Improvement Over Chance index, after matching the base rates and the selection ratios as closely as possible.

	Correct Predictions		Prediction Errors		
Recidivism	-----		-----		
Category	Valid -	Valid +	False -	False +	RIOC

<u>Any Reincarceration</u>					
Factor One	3.77%	60.38%	16.98%	18.87%	-5.76
Factor Two	5.66%	63.21%	14.15%	16.98%	7.67
<u>New Convictions</u>					
Factor One	22.64%	30.19%	22.64%	24.53%	5.36
Factor Two	30.19%	31.13%	21.70%	16.98%	25.18
<u>Nonviolent Recidivism</u>					
Factor One	32.08%	21.70%	20.75%	25.47%	7.46
Factor Two	36.79%	25.47%	16.98%	20.75%	25.61
<u>Violent Recidivism</u>					
Factor One	56.60%	7.55%	19.81%	16.04%	6.39
Factor Two	50.94%	10.38%	16.98%	21.70%	8.62

(Table continues)

(. . . continued)

Note: N's in the high-risk group were:

Recidivism categories	Selection Ratios		base rates
	Factor 1	Factor 2	
Any Reincarceration	84	85	82
New Convictions	58	51	56
Nonviolent Recidivism	50	49	45
Violent Recidivism	25	34	29

N's in the low-risk group can be calculated by subtracting the N's in the high-risk group from 106.

RIOC = Relative Improvement Over Chance (Loeber & Dishion, 1983); PCL-R = Revised Psychopathy Checklist (Hare, 1985a); SIR = Statistical Information On Recidivism (Nuffield, 1982); SFS = Salient Factor Score (Hoffman, 1983).

7.8 Kappa Coefficients

The RIOC statistic is a relative indication of how efficient a predictor measure can predict a criterion measure, after adjusting for the maximum number of predictions possible given the cell marginals. Although similar to the RIOC, the kappa coefficient can be interpreted as the proportion of agreement between the predictor and criterion measures after chance agreement is excluded (Cohen, 1960; Spitzer & Fleiss, 1974), given the cell marginals. Because the RIOC and kappa coefficient (k) are interpreted differently, kappa coefficients were computed on the same contingency tables as the RIOC indices above.

7.8.1 Kappa Coefficients Between Recidivism and the PCL-R, SIR, and SFS

The proportion of agreement between the three predictor scales (PCL-R, SIR, and SFS) and recidivism categories (yes/no) are presented in Table 7.5. Similar to the conclusions based on the RIOC analyses, the proportion of agreement between the PCL-R, SIR, and SFS and recidivism varies depending on the recidivism category of interest and the predictor measure. Once again, the SFS was the best predictor of any Reincarceration and Nonviolent recidivism, the SIR was the best predictor of new Convictions, and the PCL-R was the only measure able to predict Violent recidivism above base rate predictions.

7.8.2 Kappa Coefficients Between Recidivism and PCL-R Factors One and Two

Kappa coefficients were calculated separately for the two PCL-R Factors; as indicated in Table 7.6, PCL-R Factor Two recidivism predictions tended to be more accurate than PCL-R Factor One recidivism predictions. Although weak, the two PCL-R Factors predicted Violent recidivism with equal success; PCL-R Factor One and Factor Two were six and eight percent more accurate than chance, respectively.

Table 7.5. Kappa coefficients between recidivism and PCL-R, SIR, and SFS high- and low-risk groups, after matching the recidivism base rate with the selection ratio as closely as possible.

Type of recidivism following McKenzie	Predictor measures		
	PCL-R	SIR	SFS
Unit treatment			
Any Reincarceration	.04	-.02	.14
New Convictions	.06	.15	.05
Nonviolent recidivism	.09	.17	.28
Violent recidivism	.06	.00	-.18

Note: N's in the high-risk group were:

Recidivism categories	Selection Ratios			base rates
	PCL-R	SIR	SFS	
Any Reincarceration	83	82	78	82
New Convictions	50	59	62	56
Nonviolent recidivism	44	44	33	45
Violent recidivism	28	30	33	29

N's in the low-risk group can be calculated by subtracting the N's in the high-risk group from 106.

RIOC = Relative Improvement Over Chance (Loeber & Dishion, 1983); PCL-R = Revised Psychopathy Checklist (Hare, 1985a); SIR = Statistical Information On Recidivism (Nuffield, 1982); SFS = Salient Factor Score (Hoffman, 1983).

Table 7.6. Kappa coefficients between recidivism and PCL-R Factor One and PCL-R Factor Two high- and low-risk groups, after matching recidivism base rates with the selection ratios as closely as possible.

Recidivism category	PCL-R Factors	
	Factor One	Factor Two
Any Reincarceration	-.05	.07
New Convictions	.05	.23
Nonviolent recidivism	.07	.24
Violent recidivism	.06	.08

Note: N's in the high-risk group were:

Recidivism categories	Selection Ratios		base rates
	Factor 1	Factor 2	
Any Reincarceration	84	85	82
New Convictions	58	51	56
Nonviolent recidivism	50	49	45
Violent recidivism	25	34	29

N's in the low-risk group can be calculated by subtracting the N's in the high-risk group from 106.

RIOC = Relative Improvement Over Chance (Loeber & Dishion, 1983); PCL-R = Revised Psychopathy Checklist (Hare, 1985a); SIR = Statistical Information On Recidivism (Nuffield, 1982); SFS = Salient Factor Score (Hoffman, 1983).

8. DISCUSSION

8.1 Sample Characteristics

Of the one hundred eighty six consecutive admissions to McKenzie Unit between September 16th, 1985, and May 10th, 1990, eighty subjects were eliminated from the recidivism analyses. Most of these offenders were excluded either because they had not yet been released from incarceration and therefore did not have an opportunity to reoffend, or Revised Psychopathy Checklist assessments were unavailable. Although the included and excluded samples were similar in racial composition, years of education, and PCL-R scores, there was evidence to suggest the excluded subjects were older, and spent more time in treatment, than the one hundred six offenders that were extensively analyzed. A large proportion of those excluded were serving life sentences, so the older "lifers" may have chosen to spend more time in treatment to increase their prospects for parole. Because the included subjects differed from the excluded subjects, analyses based on the included sample may not generalize to all offenders that have gone through McKenzie Unit treatment, particularly lifers.

The three psychopathy groups did not differ on years of education, length of follow-up, age at admission to

McKenzie Unit, or age at discharge from incarceration, so any PCL-R group recidivism differences cannot be accounted for by these variables. However, both age indices were significantly correlated with the PCL-R Total and PCL-R Factor Two scores, but uncorrelated with the PCL-R Factor One score. This tendency for older offenders to have lower scores on the Total PCL-R, and the unstable, antisocial, social deviance component of the PCL-R, is consistent with the concept of "burnout," or a decrease in criminal activity with age (Blumstein, Cohen, Roth, & Visher, 1986; Hare, McPherson, & Forth, 1988; Petersilia, 1980). Similarly, even though core personality traits of the psychopath may remain stable, social deviance and antisocial behaviour may be expected to decline with age (Harpur & Hare, 1991b).

Most offenders were released on mandatory supervision, but a very large proportion of offenders were also released on parole. Despite their more extensive criminal histories, psychopaths were granted early release as often as nonpsychopaths. Perhaps loquacious psychopaths are able to persuade the parole board that they would be good release risks, even though their extensive criminal histories would suggest otherwise. SIR and SFS scores correlated $r_{pb} = .29$ ($p = .29$) and $r = -.23$ ($p = .02$) with early release, respectively (1=granted early release, 2 = not granted

early release), indicating the National Parole Board of Canada incorporates actuarial information into their early-release decision-making.

Although there was no association between early release and Reincarceration following treatment, or being convicted of a Violent offence, offenders granted early release were less likely to be convicted of a New offence or Nonviolent offence than those not granted early release. These findings suggest the National Parole Board of Canada is more adept at selecting good-risk nonviolent offenders than good-risk violent offenders for early release.

8.2 Psychopathy and Criminal History Prior to Treatment

Consistent with past research (e.g., Hare & Jutai, 1983; Hare & McPherson, 1984b; Wong, 1984), psychopaths had a higher incidence of nonviolent and violent convictions compared with nonpsychopaths, prior to McKenzie Unit treatment. Similarly, the PCL-R was significantly correlated with number of convictions per year free, prior to RPC Therapeutic Community treatment. In general, past criminality was most strongly associated with social deviance and less strongly related to the interpersonal-affective characteristics of the PCL-R. As suggested by their more extensive criminal histories compared with

nonpsychopaths, psychopaths were more committed to criminality prior to McKenzie Unit treatment.

8.3 Psychopathy and Recidivism Following Treatment

Predicting recidivism from psychopathy assessments assumes PCL-R scores are stable over time. Although longitudinal studies have not yet been conducted to address the stability of the PCL-R, a cross-sectional study is relevant. Harpur and Hare (1991b) found mean scores on PCL-R Factor One to be similar across all age groups, whereas PCL-R Factor Two scores decreased as the age of the subject increased ($N = 889$). Despite this decrease in PCL-R Factor Two scores, prevalence rates for psychopathy remained relatively stable across age periods. Although these cross-sectional analyses suggest psychopathy diagnoses may be stable, longitudinal research is needed to clarify the relationship between age and PCL-R scores within individual offenders. Although follow-up length for offenders ranged from several months to years, there was no difference between length of follow-up and psychopathy group. Therefore, if PCL-R scores were systematically affected by time (e.g., gradually decreased), each psychopathy group would have been similarly affected.

Group analyses indicated there was a linear trend for

psychopaths to recidivate at a higher rate than nonpsychopaths, for new Convictions and Nonviolent recidivism. Although psychopaths also tended to recidivate more for Violent offences and were Reincarcerated at a greater rate than nonpsychopaths, the pattern between the three groups was less clear and nonsignificant for these latter measures; reasons for this possible discrepancy between psychopathy and the recidivism measures are discussed in more detail below.

As predicted, survival analyses indicated there was a tendency for psychopaths to recidivate at a faster rate than nonpsychopaths following release from Therapeutic Community treatment at the RPC (Prairies), and this poorer performance was particularly marked for new Convictions and Nonviolent recidivism. Because offenders may be reincarcerated for relatively minor infractions during the community-supervised portion of their sentence, Reincarceration may not be a particularly valuable indicator of treatment efficacy, as suggested by the uniformly high base rate of Reincarcerations by the high, medium, and low psychopathy groups at the end of the follow-up period. Lack of differentiation between psychopathy groups for Violent recidivism may have been due to the effectiveness of treatment, but another plausible explanation is the length of the current follow-up. A

longer follow-up period may be required to effect an increase in the violent reoffending base rate from 27.36% to about 50%, in order to statistically differentiate the PCL-R groups from each other. Indeed, by increasing the follow-up period from 10.2 months to 29.7 months, and the corresponding base rates from about 27% to 56%, Serin (1990) found a clear monotonic, linear pattern for overall recidivism rates for the low, medium, and high PCL-R groups that were not apparent during the shorter follow-up period.

The PCL-R was developed on White male offenders (Hare, 1991), and the psychometric characteristics of the PCL-R have been shown to differ slightly in non-Caucasian populations (e.g., Kosson et al., 1990). As such, it is not all that surprising the recidivism survival curves between the PCL-R groups were more accentuated after eliminating non-Caucasian offenders from the analyses. PCL-R group differences for recidivism cannot be accounted for by race, however, as the proportion of Caucasian offenders in the high and low psychopathy groups were roughly equal (with sixty-seven percent Caucasians in the psychopathic group and seventy-five percent Caucasians in the nonpsychopathic group). The mixed-race group analyses should provide a conservative estimate of the association between post-treatment recidivism and the PCL-R among Caucasian offenders. Because race was not the focus of this thesis,

racial differences will not be discussed further.⁶

Correlational analyses, the RIOC statistic, and kappa coefficients indicated Factor Two of the PCL-R was consistently more strongly associated with Reincarcerations, new Convictions, and Nonviolent recidivism following treatment, compared to PCL-R Factor One. The relationship between the PCL-R Factors and Violent recidivism, however, was less clear. Correlational analyses suggested PCL-R Factor Two was more strongly predictive of Violent recidivism compared to Factor One. The RIOC statistics and kappa coefficients, however, suggested Violent recidivism was predicted equally well, albeit only marginally better than chance, by both PCL-R Factors. Inconsistencies between the various statistical methodologies suggest the relationship between the PCL-R Factors and Violent recidivism is unclear at present, and future research is needed to elucidate the relationship. In any case, none of the results supported the prediction that PCL-R Factor One is more strongly correlated with Violent recidivism compared with PCL-R Factor Two.

Violence box score tallies may not be sufficiently

⁶ Although not reported in the body of the thesis, point-biserial correlations between the PCL-R Total, PCL-R Factor One, and PCL-R Factor Two and recidivism (yes/no) were essentially identical before and after partially out the effects of race (1=Caucasian, 2=non-Caucasian), again suggesting the relationship between the PCL-R and recidivism was independent of race.

sensitive to detect the types of cold, callous, calculated crimes posited to be associated with Factor One of the PCL-R. That is, offence categories in official FPS records may be too crude a measure of violent recidivism. Perhaps a more qualitative analysis of police reports is required to accurately classify the nature and degree of violence of the offence. For example, threatening others during the commission of a robbery while brandishing weapons would be coded in the present study as a violent offence, as would an assault committed during an intoxicated state with the perpetrator showing a lot of remorse afterwards. The former offence is considered more prototypical of the cold, callous crime committed by the psychopath, whereas the second offence may be attributable more to situational influences. If the theoretical position is correct that violence stems from enduring personality characteristics such as the psychopaths' shallow affect, then a stronger relationship between the PCL-R Factor One and Violent recidivism coded from police reports should be apparent. However, in order to detect PCL-R group differences for this circumscribed definition of violence, a greater number of offenders in the high PCL-R group may be required, as well as a longer follow-up period to compensate for the lower violence base rate.

The limited utility of violent/nonviolent box score

offence categorization is highlighted by Williamson et al. (1987). Because psychopaths commit murder less frequently than nonpsychopaths, psychopaths may ostensibly be viewed as less violent. However, the greater proportion of psychopaths' offences committed for material gain, and revenge or retribution, is consistent with the position that psychopaths' violence is cold and calculated. Conversely, nonpsychopaths' violence were usually perpetrated under strong emotional arousal against a family member or acquaintance, sometimes culminating in death. Taken together, these findings suggest simple categorizations of offences as violent or nonviolent may be misleading, and that PCL-R Factor One may be related to circumscribed cold, calculated, callous, violent offences.

Even if psychopaths are committing violent offences at a greater rate than nonpsychopaths, official reconviction rates may asymmetrically underestimate the psychopaths' violence. Correct identification and location of the perpetrator may be facilitated by the type of relationship between the nonpsychopath and victim. Nonpsychopaths' victims are most likely to be family members or acquaintances, while psychopaths' victims are more likely to be strangers (Williamson et al., 1987). As a result, it may be easier for the psychopath to successfully avoid apprehension, identification, and subsequent prosecution

and incarceration.

Harpur and Hare (1991a) found an interaction between PCL Factors One and Two scores and institutional violence, suggesting high scores on both PCL-R Factors are important for predicting violence. However, consistent with the current study, after PCL Factor Two scores were entered into an hierarchical regression analysis to postdict official conviction rates, PCL Factor One and the interaction between PCL Factors One and Two failed to significantly contribute to predictions of the number of violent crimes committed per year free (Harpur & Hare, 1991a). Harpur and Hare's (1991a) findings suggest institutional violence following treatment, rather than official reconviction rates, may yield a stronger relationship between violence and PCL-R Factor One, perhaps because offences committed outside of prison may go undetected, or may not lead to arrest or conviction.

In sum, findings from the current study are consistent with the prediction that psychopaths, because of persistent asocial attitudes and antisocial behaviour, would demonstrate greater recidivism following treatment than nonpsychopaths. While the social deviance Factor may have made the strongest predictive contribution for the PCL-R for Reincarceration, new Convictions, and Nonviolent recidivism following treatment, the relationship between

Violent recidivism and the social deviance or interpersonal-affective aspects of psychopathy was less clear.

Although it is possible that the greater recidivism among psychopaths relative to nonpsychopaths following treatment may have been confounded by the shorter time spent in treatment, this is unlikely to be the case. First, psychopaths in the current study were more committed to criminality prior to treatment, as evidenced by more extensive criminal histories than nonpsychopaths, so psychopaths may have continued to engage in criminal activities at a higher rate following treatment even after similar treatment lengths. Second, psychopaths tended to be discharged earlier because of their disruptive influence on the unit, lack of motivation, and lack of commitment to the program (Ogloff et al., 1990). Maintaining the disruptive psychopath in treatment until he had been on the unit for an equivalent period of time as other offenders would likely jeopardize others' treatment, and may potentially exacerbate the psychopaths' disruptive influence if he felt he was being coercively kept in treatment. In sum, quantity of treatment should not be confused with quality; equal treatment periods for disruptive and nondisruptive offenders will not necessarily translate into similar recidivism rates.

Before the PCL-R is used in pre-release decision-making following treatment, several important factors should be addressed. The relationship between the PCL-R and recidivism, for example, should be determined for non-Caucasian offenders and other offender populations (e.g., female offenders or low-risk groups). Offenders in the current study tended to be in the higher release risk category, as suggested by elevated SIR and SFS scores compared with standardization samples (Hoffman, 1983; Nuffield, 1982). Therefore, results from this study may only generalize to high-risk offenders. This is not a limitation, however, since high-risk inmates are probably the most likely to seek out treatment or to be referred for treatment by institutional staff or the National Parole Board of Canada. High-risk offenders are the very offenders this study should generalize to. As a final caution, although the PCL-R was useful in making recidivism predictions following RPC (Prairies) Therapeutic Community treatment, the PCL-R's predictive utility may vary for other treatment programs and interventions.

Despite generally monotonic trends between low, medium, and high PCL-R groups for criminal activity (e.g., past criminal behaviour and recidivism), there are not enough subjects in the current study, particularly in the high PCL-R group ($N = 15$), to conclude that the high rather

than the low PCL-R group is distinct from other offenders. Results may be interpreted as either increased "psychopathic" criminal activity, or decreased "nonpsychopathic" activity, relative to other offenders. Crucial comparisons between the medium PCL-R group, after adding more subjects, would suggest the more plausible interpretation. Failing to find differences between the medium and high PCL-R groups would suggest a small proportion of criminals, perhaps those less committed to criminality in the first place, may account for the differences in criminal activity between PCL-R groups. Alternatively, clear differences between the medium and high PCL-R groups would suggest psychopaths are distinct in their patterns of criminal activity relative to other offenders.

8.4 Predictive Efficiencies of the PCL-R, SIR, and SFS

As predicted, PCL-R Factor Two was more strongly associated with the SIR and SFS measures relative to PCL-R Factor One. However, contrary to expectations, regression analyses suggested the PCL-R did not significantly contribute to the prediction of recidivism over-and-above the SIR and SFS. Since Factor Two of the PCL-R made the primary contribution for predicting recidivism, as

discussed above, and PCL-R Factor Two was more strongly correlated with the SIR and SFS compared to PCL-R Factor One, it is not surprising that the PCL-R Factors were not able to improve upon recidivism predictions over the two standard actuarial scales. Similarly, because heterogeneous scales often yield higher correlations with criterion variables (Ghiselli, Campbell, & Zedeck, 1981; Nunnally, 1978), it should not be entirely unexpected that the heterogeneous SIR and SFS were more strongly correlated with most categories of recidivism, compared with the more internally consistent PCL-R.

Depending on the recidivism category of interest, the PCL-R, SIR, and SFS were differentially efficient at making categorical recidivism (yes/no) predictions, as indicated by the RIOC analyses and kappa coefficients. Generally, all measures were much better at predicting nonviolent recidivism compared to Violent recidivism, and all measures had limited utility for predicting Violent recidivism following treatment; the PCL-R was the only measure able to (marginally) predict Violent recidivism above the base rate.

Results across correlational analyses, logistic regression analyses, RIOC statistics, and kappa coefficients were examined to determine which scale or scales would be the most appropriate for various recidivism

predictions. Analyses inconsistently favored one measure over another for predicting Reincarceration, and no measure was significantly related to Violent recidivism. Predictive accuracy was no better than random base rate responding, suggesting that the PCL-R, SIR, or SFS should not be used to make Reincarceration and Violent recidivism predictions following release from RPC (Prairies) Therapeutic Community treatment. It is likely the Reincarceration rate is too high and the Violent recidivism rate too low to permit improvements above random base rate predictions.

From the overall pattern of results, the SFS was slightly (although probably not reliably) more accurate than the SIR or PCL-R Factors for making Nonviolent recidivism predictions following release from RPC (Prairies) treatment. Finally, it seemed to make little difference whether the PCL-R (particularly Factor Two), SIR, or SFS were employed for predicting new Convictions; each measure performed roughly equally. Because the PCL-R is time-consuming to administer and requires access to a considerable amount of collateral information, the quicker and easier-to-score actuarial scores may be preferred over the PCL-R for pre-release applications.

It should be emphasized that the actuarial scales were designed specifically to predict recidivism, whereas the PCL-R was designed to measure the construct of psychopathy.

In addition to making useful criminal predictions, the PCL-R is related in theoretically meaningful ways to language processes (e.g., Gillstrom & Hare, 1988; Hare & Jutai, 1988; Hare & McPherson, 1984; Hare, Williamson, & Harpur, 1988; Williamson et al., 1991), and attention (see Harpur & Hare, 1990, for a review; Ogloff & Wong, 1990). Because of the way they were constructed, the SIR and SFS are expected to be associated only with criminal behaviours. In sum, the PCL-R should be preferred over the SIR and SFS for advancing theory, and for explaining the relationship between criminality and the scales.

It is important to recognize several limitations of fixed diagnostic systems in general (Finn, 1982), and the current study in particular. The superiority of one scale over another is based on specific cutpoints, and RIOC analyses and kappa coefficients should only be considered as comparative based on the specific cutpoints used in the present analyses. If different high- and low-risk groups were formed, the relative superiority of the scales may change. In other words, predictive accuracy of one instrument over another may reflect more optimal selection ratio cutpoints for the particular scale; if the PCL, SIR, and SFS have different optimal cutpoints, then altering the number of high- and low-risk offenders may concomitantly

affect predictive efficiency.⁷

When comparing the PCL-R, SIR, and SFS on predictive efficiency, emphasis was on predictive accuracy, not the specific errors or correct decisions associated with the predictions. Costs associated with decision errors of false positives and false negatives were presumed to be equal in the current study. However, if the costs associated with prediction error were not equal, the costs must be carefully weighed before setting the cutpoint (Finn, 1982). For example, if identifying high-risk, violently recidivistic offenders is extremely important and the costs associated with false positives is minimal, the cutpoint could be lowered. Once the costs of incorrect classifications have been weighed, a measure most closely corresponding to the desired utility could then be chosen. If, for example, the PCL-R rarely fails to identify offenders who would recidivate if released, but incorrectly classifies high proportions of innocent offenders, then the PCL-R may have limited utility in settings where these false positives are highly undesirable.

⁷ Because large base rate-selection ratio discrepancies may result in misleading interpretations, reflect an optimal cutpoint, or a true difference, only the equated base rate and selection ratio RIOC statistics and kappa coefficients were presented. However, other selection ratio cutpoints and predictive efficiencies were examined in the current study. Modifying selection ratio cutpoints also altered the ordinal rankings of the PCL-R, SIR, and SFS prediction superiority.

In any case, violence prediction will likely remain poor. Violence is a relatively rare event, and behaviours that deviate from the 0.50 incidence rate are difficult to predict (Dutile & Foust, 1987; Ennis & Litwack, 1974; Hall, 1982; Monahan, 1981, 1982; Steadman, 1987; Steadman & Cocozza, 1980).

8.5 Limitations of the Current Study, and Areas for Future Research

In the current study, selection ratios and base rates were equated for the RIOC and kappa coefficient analyses in order to evaluate the relative efficiency of the various recidivism prediction scales beyond base rate predictions. In reality, recidivism base rates are often not known in advance, and base rates vary proportionate to the follow-up period and offender population. Indeed, an "optimal system of fixed diagnostic rules would require collecting much information regarding diagnostic error, base rates, and utilities that is presently not available" (p. 297, Finn, 1982). Moreover, actuarial scales are not used in isolation, but should be used as an aid in recidivism prediction, because clinical approaches can augment rare, salient, idiographic features not captured by actuarial scales (Gottfredson, 1987; Monahan, 1981; but, Meehl, 1973,

argues that considerable caution should be exercised when superseding statistical, actuarial information with clinical data).

Because of the limitations of the current study, several areas of future research are warranted. To further evaluate the contention that psychopaths benefit from treatment less than nonpsychopaths, as suggested by higher recidivism rates following treatment, future researchers must include a non-treatment control group. Because of the research design employed in the current study, it is impossible to detect any changes within a group. Indeed, if all psychopathy groups benefitted equally from treatment, psychopaths would still be expected to display greater recidivism rates than the other two groups; the relative survival curve positions of the PCL-R groups would not change. Similarly, because a decrease in criminality would be expected as a function of age, a comparison group matched for age is required. Evidence of the ineffectiveness of treatment for psychopaths would be stronger if treated psychopaths committed criminal offences at an equal or greater rate than untreated psychopaths, while treated nonpsychopaths demonstrated reduced criminality compared to their untreated nonpsychopathic counterparts.

Unfortunately, without an untreated control group,

statistical methodologies cannot compensate for the deficiencies of the current research design for determining treatment efficacy. For example, the lower correlations between the PCL-R and recidivism, compared with the PCL-R and pre-treatment criminality, may reflect treatment efficacy for psychopaths, in terms of reduced recidivism rates. However, point-biserial correlations, which were calculated for recidivism, are less powerful than Pearson product-moment correlations, which were calculated for pre-treatment measures. As a result, post-treatment correlations would be expected to be lower, because a less powerful statistic was used.

Repeated measures analyses could not be employed to determine if rates of offending were lower subsequent to treatment, because the current follow-up period was too short to permit stable, reliable, continuous estimates of offending such as the number of offences committed per year free. Moreover, statistical methodologies cannot disentangle complex relationships between PCL-R groups and recidivism, such as increased rates of offending by psychopathic subjects but decreased rates of offending for nonpsychopathic subjects (Rice et al., 1989). Therefore, it is essential future researchers include a matched, untreated control group.

Treatment outcome in the current study is useful in

evaluating the Correctional Service of Canada's mandate to encourage and assist offenders to become "law-abiding citizens" (p. 5, Correctional Service of Canada, 1990b).⁸ However, treatment process research could illuminate important factors to consider when treating psychopaths, and suggest more efficacious treatment interventions. For example, the finding that psychopaths become more violently recidivistic following treatment (Rice et al., 1989) may be investigated within a process-oriented approach. If important therapeutic components of the Therapeutic Community are thought to include empathy training and intense affect fostered by peer pressure, then Therapeutic Community treatment may be ineffective because of the psychopaths' deficient affective experiences (Cleckley, 1976; Williamson et al., 1991).

Characteristics of the psychopath, including superficiality, pathological lying, deceptive skills, lack of sincerity, shallow affect, callousness, and lack of remorse and empathy, might be expected to facilitate the elicitation of affect from others. If intense emotions do not impede the psychopaths' resources, they may be more

⁸ If the goal of Correctional Service of Canada treatment, however, is to reduce recidivism, then the number of offenders serving life sentences accepted to the Regional Psychiatric Centre (Prairies) Therapeutic Community treatment program should be reevaluated, since so few "lifers" are released following treatment, even though they consume a disproportionately high number of institutional resources in terms of days in treatment.

attuned to other's affective and interpersonal cues. Instead of helping the psychopath to "get in touch" with feelings he does not fully experience, the Therapeutic Community may teach psychopaths that others may experience intense emotions, and the way in which others weaknesses could be exploited. With this information, psychopaths may become more instrumentally violent because they now recognize and understand how violence could be used to gratify their egocentric needs. Unfortunately, Jones (1968) theoretical formulations of the mobilizing aspects of Therapeutic Community treatment are broad, extrapersonal descriptions. Before process-oriented research could be undertaken, more specific, intrapersonal characteristics of posited change during treatment would need to be delineated.

In conclusion, the results indicate recidivism rates of psychopaths are generally higher than nonpsychopaths following RPC (Prairies) Therapeutic Community treatment. Because an untreated control group was not included, it is not altogether clear if psychopaths did or did not benefit from treatment. The actuarial recidivism risk instruments were able to improve upon chance predictions for nonviolent but not violent recidivism, after treatment in a Therapeutic Community program of the type being offered at the RPC (Prairies).

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APPENDICES

APPENDIX A

Factor Structure of the Revised Psychopathy Checklist

From Hare, R.D., Harpur, T.J., Hakstian, A.R., Forth, A.E., Hart, S.D., & Newman, J.P. (1990). The Revised Psychopathy Checklist: Reliability and factor structure. Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2, 338-341.

FACTOR ONE:

- 1 Glibness/superficial charm
- 2 Grandiose sense of self-worth
- 4 Pathological lying
- 5 Conning/manipulative
- 6 Lack of remorse or guilt
- 7 Shallow affect
- 8 Callous/lack of empathy
- 16 Failure to accept responsibility

FACTOR TWO:

- 3 Need for stimulation
- 9 Parasitic lifestyle
- 10 Poor behavioural controls
- 12 Early behaviour problems
- 13 Lack of realistic goals
- 14 Impulsivity
- 15 Irresponsibility
- 18 Juvenile delinquency
- 19 Revocation of conditional release

APPENDIX B

General Statistical Information on Recidivism (SIR Scale)

FPS _____
NAME _____
DATE COMPLETED _____
 D / M / Y
JURISDICTION: Federal _____
 Provincial _____

=====

CURRENT OFFENCE..... _____
(If more than one offence, use highest score)

- +4 Escape
- +2 Break and Enter, Theft, Illegal Possession of firearm,
Carrying concealed weapon
- +1 Receiving or possession of stolen goods
- 2 Unarmed robbery, arson, kidnapping, hijacking,
abduction, criminal negligence in operation of vehicle,
dangerous driving, or obstructing peace officer
- 3 Homicide or Narcotics offences
- 4 Nonviolent sex offences

AGGREGATE SENTENCE..... _____

- 2 6 years or more
- 3 5 years and up to 6 years

SECURITY CLASSIFICATION..... _____

- +1 is in maximum security at time of parole hearing (if
female, always score "0")

INTERVAL AT RISK..... _____

- +1 less than 6 months between current conviction and last
release or last offence
- 2 2 years or more between current conviction and last
release or last offence

AGE AT ADMISSION..... _____

- +2 under 21
- 2 over 39

CURRENT MARITAL STATUS.....

-1 is married or has common-law spouse

NUMBER OF DEPENDENTS.....

-2 has 3 or more dependents (including dependents from
common-law marriage)

EMPLOYMENT STATUS AT ARREST.....

-1 was employed at time of arrest for current offence

AGE AT FIRST ADULT CONVICTION.....

+2 was under 19 at time of first adult conviction
-2 was 23-30 at time of first adult conviction
-3 was 31-40 at time of first adult conviction
-6 was 41-49 at time of first adult conviction
-7 was 50 or older at time of first adult conviction

PREVIOUS INCARCERATION.....

+2 has served sentences in jail, prison or penitentiary 5
or more times before
+1 has served sentences in jail, prison or penitentiary 3-
4 times before
-4 first time incarcerated

PREVIOUS ESCAPE.....

+3 has escaped or attempted to escape on one or more
previous occasions

PREVIOUS REVOCATION OF FORFEITURE.....

+2 has previously had a term of parole of mandatory
supervision revoked or forfeited

PREVIOUS CONVICTIONS FOR ASSAULT.....

+3 has 2 or more previous convictions for assault
+2 has 1 previous conviction for assault

PREVIOUS CONVICTIONS FOR VIOLENT SEX OFFENCES.....

+4 has 1 or more previous convictions for forcible rape,
attempted rape, or indecent assault

PREVIOUS CONVICTIONS FOR BREAK AND ENTER.....

+6 has 5 or more previous convictions for break and enter
+3 has 3-4 previous convictions for break and enter
+2 has 1-2 previous convictions for break and enter
-2 has no previous conviction for break and enter

TOTAL.....

NOTE: The values shown for each item above are only those which receive a non-zero score. Therefore, items should be scored "0" if none of the stated values apply.

SUCCESS RATE FOR GROUPS OF OFFENDERS SCORING:

-27	to	-6	4 out of every 5 offenders will not commit an indictable offence after release
-5	to	-1	2 out of every 3 offenders will not commit an indictable offence after release
0	to	+4	1 out of every 2 offenders will not commit an indictable offence after release
+5	to	+8	2 out of every 5 offenders will not commit an indictable offence after release
+9	to	+30	1 out of every 3 offenders will not commit an indictable offence after release

APPENDIX C

Statistical Information On Recidivism (SIR) Coding Clarification

General note: All information is filled-out as of the sentencing period prior to RPC treatment admission. Therefore, sentencing history subsequent to RPC discharge should NOT be included in the coding. If the offender has been treated on McKenzie several times, take the longest time on the unit between 1985 and the present as "the" treatment date.

CURRENT OFFENCE.....

- the "current offence" is/are the offence(s) for Study Period 2 (described in section 4.2.3)
- examples of nonviolent sex offences include flashing and voyeurism

AGGREGATE SENTENCE.....

- sum together all consecutive sentences on the FPS Sheet for Study Periods 1 and 2 (described in section 4.2.3)
- do not include probation or suspended sentences in the aggregate sentence calculation

SECURITY CLASSIFICATION.....

- if the offender was transferred between several institutions during Study Period 2 (described in section 4.2.3), use the highest security level (not including RPC)
 - only code S6 and S7 institutions as maximum security
- Maximum security or multilevel facilities in Canada are:
- Archambault Institution (Quebec Region - S6)
 - Correctional Development Centre (Quebec Region - S6/S7)
 - Dorchester Penitentiary (S6)
 - Edmonton Institution (Prairie Region - S6)
 - Kent Institution (Pacific Region - S6)
 - Kingston (Ontario Region - multilevel)
 - Laval Institution (Quebec Region - S6)
 - Millhaven Institution (Ontario Region - S6/S7 and multilevel)
 - Prison for Women (Ontario Region - multilevel)
 - RPC Pacific (Pacific Region - multilevel)
 - RPC Prairies (Prairie Region - S6 and multilevel)
 - Regional Reception Centre (Quebec region - multilevel)
 - Saskatchewan Penitentiary (Prairie Region - S6 and multilevel)
 - Treatment Centre (Ontario Region - multilevel)

INTERVAL AT RISK.....

- interval at risk is calculated by subtracting the first date on the FPS Sheet during Study Period 2 (described in section 4.2.3) from the date of release for the immediately preceding conviction

AGE AT ADMISSION.....

- use age at admission for the first conviction appearing on the FPS Sheet during Study Period 2 (described in section 4.2.3)

*** CURRENT MARITAL STATUS.....**

- use RPC institutional file information to rate this item
- rate marital status at the time of RPC treatment
- married but living separate is scored as if the offender were married (i.e., -1); divorced is scored 0
- "common-law" means the inmate has lived with the person for at least one month prior to incarceration

*** NUMBER OF DEPENDENTS.....**

- use RPC institutional file information to rate this item
- rate "dependents" at the time of RPC treatment
- "dependents" are people who rely on the inmate for support. Dependents would therefore include the offender's wife, children, and parents/grandparents/siblings the offender supports. If the offender does not financially support the "dependents" (e.g., has three kids but does not pay support and does not know where they live), score as 0

*** EMPLOYMENT STATUS AT ARREST.....**

- use RPC institutional file information to rate this item
- rate employment status on the date immediately prior to the first conviction on the FPS Sheet for Study Period 2 (described in section 4.2.3)

AGE AT FIRST ADULT CONVICTION.....

- calculate age at first conviction appearing on the FPS Sheet

PREVIOUS INCARCERATION.....

- use the largest "Conviction block number" on the FPS Sheet, during Study Period 1 (described in section 4.2.3)

PREVIOUS ESCAPE.....

- use "escape" or "Unlawfully at Large" convictions appearing on the FPS Sheet, prior to RPC treatment (i.e., convictions during Study Periods 1 and 2, described in section 4.2.3)

PREVIOUS REVOCATION OF FORFEITURE.....

-Parole or M.S. is revoked or forfeited if "M.S. violator" or a similar statement appears on the FPS Sheet, or the offender commits a new offence before his Warrant Expiry Date, during Study Period 1 (described in section 4.2.3)

PREVIOUS CONVICTIONS FOR ASSAULT.....

-include only assaults appearing on the FPS Sheet during Study Period 1 (described in section 4.2.3)

PREVIOUS CONVICTIONS FOR VIOLENT SEX OFFENCES.....

-include only sex offences appearing on the FPS Sheet during Study Period 1 (described in section 4.2.3)

PREVIOUS CONVICTIONS FOR BREAK AND ENTER.....

-include only B & E's appearing on the FPS Sheet during Study Period 1 (described in section 4.2.3)
-only count entries for "break and enter" on the FPS Sheet (e.g., "possession of stolen property" is not included)

APPENDIX D

Salient Factor Score (SFS81)

- A. PRIOR CONVICTIONS/ADJUDICATIONS (ADULT OR JUVENILE)**.....
- | | |
|-------------------|---|
| None..... | 3 |
| One..... | 2 |
| Two or three..... | 1 |
| Four or more..... | 0 |
- B. PRIOR COMMITMENTS OF MORE THAN 30 DAYS (ADULT OR JUVENILE)**.....
- | | |
|--------------------|---|
| None..... | 2 |
| One or two..... | 1 |
| Three or more..... | 0 |
- C. AGE AT CURRENT OFFENSE/PRIOR COMMITMENTS**.....
- Age at commencement of the current offence:
- | | |
|-------------------------------|------|
| 26 years of age or more | 2*** |
| 20-25 years of age..... | 1*** |
| 19 years of age or less..... | 0 |
- ***EXCEPTION: If five or more prior commitments of more than thirty days (adult or juvenile), place an X here _____ and score this item.....0
- D. RECENT COMMITMENT-FREE PERIOD (THREE YEARS)**.....
- No prior commitment of more than thirty days (adult or juvenile), or released to the community from last such commitment at least three years prior to the commencement of the current offence.....1
- Otherwise.....0
- E. PROBATION/PAROLE/CONFINEMENT/ESCAPE STATUS VIOLATOR AT THIS TIME**.....
- Neither on probation, parole, confinement, or escape status at the time of the current offense; nor committed as a probation, parole, confinement, or escape status violator this time.....1
- Otherwise.....0

F. HEROIN/OPIATE DEPENDENCE....._____

No history of heroin or opiate dependence....1

Otherwise.....0

=====

TOTAL SCORE.....=====

APPENDIX E**Salient Factor Score (SFS81) Coding clarification**

General note: All information is filled-out as of the sentencing period prior to RPC treatment admission. Therefore, sentencing history subsequent to RPC discharge should NOT be included in the coding. If the offender has been treated on McKenzie several times, take the longest time on the unit between 1985 and the present as "the" treatment date.

A. PRIOR CONVICTIONS/ADJUDICATIONS (ADULT OR JUVENILE)

An adjudication refers to "the determination of a controversy and a pronouncement of a **judgment** based on **evidence** presented; implies a final judgment of the court [emphasis added] or other body deciding the matter, as opposed to a proceeding in which the merits of the cause of action were not reached, e.g., **default judgment**" (p. 11, Gifis, 1884).

Count only convictions/adjudications appearing on the FPS Sheet for Study Period 1 (described in section 4.2.3). "Not guilty" is considered an adjudication, Stay of Proceedings is not an adjudication, and all convictions are "adjudicated," including fines. Although juvenile sentences are to be included in evaluating this item, for consistency use only juvenile sentences appearing on the FPS Sheet.

B. PRIOR COMMITMENTS OF MORE THAN 30 DAYS (ADULT OR JUVENILE)

Sentences exceeding 30 days per sentencing period are counted. Offenders receiving two consecutive 20 day sentences on the same day are considered to have a 40 day sentence. Similarly, a sentence of 20 days, and another consecutive 20 day sentence five days subsequent to the first sentence date, is considered a 40 day sentence. Concurrent sentences do not increase sentence lengths, and should not be counted towards "commitment" length. Only information appearing on the FPS Sheet for Study Period 1 (described in section 4.2.3) should be included. One month sentences are considered to be "more than 30 days," but 30 day sentences are not considered "more than 30 days."

C. AGE AT CURRENT OFFENSE/PRIOR COMMITMENTS

Age is calculated for the first conviction appearing on the FPS Sheet during Study Period 2 (described in section 4.2.3).

D. RECENT COMMITMENT-FREE PERIOD (THREE YEARS)

Consecutive sentences on the FPS Sheet for the same sentencing block should be aggregated, to determine if the offender has had a thirty-day or greater prison commitment, prior to Study Period 2 (described in section 4.2.3). The three year commitment-free period is calculated by subtracting the first date on the FPS Sheet during Study Period 2 (described in section 4.2.3) from the date of release for the immediately preceding conviction.

E. PROBATION/PAROLE/CONFINEMENT/ESCAPE STATUS VIOLATOR AT THIS TIME

The "current offence" refers to Study Period 2 convictions (described in section 4.2.3). Ensure the Warrant Expiry Date was reached or the sentence was completed for convictions immediately prior to the first conviction in Study Period 2. If the "current offence" was committed before all prior sentences had been completed, score this item "0".

*** F. HEROIN/OPIATE DEPENDENCE.....**

Use RPC institutional file information to rate this item. Only a clear history of heroin or opiate dependence (indicated by withdrawal or tolerance) prior to RPC treatment should be scored. If available, this information should be taken from the addictions questionnaire. Alternatively, use mental health report(s) (e.g., psychiatric reports, nursing reports, psychological reports, discharge summaries, and nursing admission reports).

Opiates are sedatives such as:

- 1) narcotics (opium, morphine, heroin)
- 2) barbiturates (seconal)

Do not code exclusive use of stimulants (amphetamines, cocaine), marijuana, or LSD/psychodelics (mescaline, psilocybin, hallucinogens) as heroin/opiate dependence, unless used in conjunction with the above opiates.

References

Gifis, S.H. (1984). Law Dictionary. Barron's Educational Series, Inc.

APPENDIX F**Data Coding and Entry: Criminal Convictions****1. Treatment Cutpoint and Criminal Offence Coding**

All transfer dates to and from the Regional Psychiatric Centre (Prairies) were obtained from Admissions and Discharge at RPC, and cross-checked with the Transfer Sheets (described below). In order to determine rates of reoffending following treatment, a McKenzie Unit treatment cutpoint was established. For offenders admitted to RPC only once, the in-out dates served as the cutpoint. However, for offenders admitted to RPC multiple times, Institutional Files were reviewed for McKenzie Unit treatment dates, and these RPC in-out dates served as the cutpoint. Two offenders in the low and middle psychopathy groups were admitted to McKenzie Unit twice, and a treatment cutpoint for these four inmates was established by including only those McKenzie Unit admissions between the September 16th, 1985, and May 10th, 1990 study period, and taking the longest McKenzie Unit treatment period. If the two treatment periods were approximately equal in length, the most recent admission to McKenzie was designated the treatment cutpoint.

Criminal offence information was obtained primarily from Fingerprint Services (FPS) Sheets, but additional details or clarification of offence information was acquired from Release Information Sheets, Transfer Information Sheets, and National Parole Board of Canada files.

2. Release Information Sheets

For the current study, the Research Branch of the Correctional Service of Canada (CSC) in Ottawa, Ontario, extracted all admission and release dates for federal terms available on the CSC computer system. Any admission and release information during Federal incarceration or supervision should appear on the Release Information Sheets, including provincial incarcerations, until the Warrant Expiry Date is reached and the offender is no longer under Federal supervision.

3. Transfer Sheets

Transfer Sheets were obtained from the Regional Psychiatric Centre (Prairies) Institutional Preventative Security Officer on May 8th, 1991, and this date was selected as the study cut-off period. In addition to providing detailed transfer information between institutions during Federal supervision or incarceration, Transfer Sheets indicate if the offender was incarcerated as of May 8th, 1991 (as long as the Federal Warrant Expiry Date had not been reached). Some time may lapse between a conviction and the appearance of the conviction on FPS Sheets, so Transfer Sheets provide more up-to-date reconviction or readmittance information than FPS sheets. If an offender was discovered to be incarcerated for a new offence according to the Transfer Sheets, but the re-incarceration had not appeared on the March 18th, 1991 FPS sheets, then new FPS sheets were requested. In the absence of other information, the less-detailed reconviction information from the Transfer Sheets were incorporated into the offence history coding. Preceding the Transfer Sheets were Tomb Sheets, which were coded for ethnicity and date of birth of the offender.

4. National Parole Board of Canada Files

In some cases, additional clarification of admittance and release information was obtained from the National Parole Board of Canada files, as long as the offender's file was still active and available in the Saskatoon National Parole Board of Canada Office.

5. Preparing Fingerprint Services Sheets for Data Entry

Updated FPS Sheets were obtained from the Regional Psychiatric Centre (Prairies) Institutional Preventative Security Officer on March 18th, 1991. To achieve the most accurate estimate of the number of days the offender spent in prison, "blocks" or new admittance-discharge ("in-out") periods were calculated. First, pairs of in-out incarceration dates were transcribed from Release Information Sheets onto FPS Sheets. Any offences on the FPS Sheet within these admittance-discharge dates were assumed to be part of the same sentencing block. Second, if the latest incarceration period from the Transfer Sheet was not recorded on the FPS Sheet, a new FPS Sheet was requested; if the reconviction information was still not available on the new FPS Sheet, the March 18th, 1991 FPS Sheet was updated from the Transfer Sheet. Third, because day parole

releases and revocations are never listed on an FPS Sheet, and full parole releases or revocations may or not be, parole information was added to the FPS Sheet. Any transfers on the Transfer Sheet for parole, or to any day parole centre (i.e., S1 Community Correctional Centres listed in Appendix G) were assumed to be for parole releases. Although an offender may have been released on parole from other facilities, the consistent and conservative coding scheme described was used. Entries on the Transfer Sheet for parole revocations, or transfers to an S1 facility, were coded as parole revocations.

Offences on the FPS Sheet that were not enclosed within the Release Information Sheets in-out dates had to have admission-discharge dates estimated for them. In many cases, it is impossible to determine if adjacent offences on an FPS Sheet are separate incarcerations, or part of the same incarceration period. Therefore, two-thirds of the first sentence length in a block was calculated, and if the succeeding conviction fell within this two-third estimate, the second conviction was assumed to be part of the same sentencing block. If, however, the second conviction date fell after this two-third estimate, then the second conviction was the first entry in a new block, and a new two-third sentence length estimate was made. This estimating procedure was continued until all the convictions were assigned a block number. Two-thirds of the sentence length was estimated to be the actual time spent in prison because, for both provincial and federal sentences, most offenders are incarcerated for roughly two-thirds of length of their sentence, corresponding with the Federal release of Mandatory Supervision.

Another major problem in estimating time incarcerated from FPS Sheets is concurrent and consecutive convictions: consecutive convictions increase the sentence length, while concurrent convictions do not. Again, it is often impossible to ascertain, from inspecting FPS Sheets, if offences are concurrent or consecutive to one another. Offences within a block were assumed to be concurrent to one another unless they were listed as consecutive on the FPS Sheets. Fortunately, estimates of time spent in prison were not required for most of the offender's longest convictions (i.e., Federal terms), because Release Information Sheets provided the actual release dates. As a result, estimates of time spent in prison should be more accurate than if only FPS Sheet information was available.

If the offender was readmitted to prison for a Mandatory Supervision revocation and no discharge date was available, the estimated Warrant Expiry Date was assumed to be the release date.

Time spent in prison for a conviction block (from Appendix H) was calculated to be the difference between the admittance and discharge dates, if available, or two-thirds the sum of the consecutive sentences within a block if discharge information was unavailable.

Discrepancies between dates on the FPS Sheets, Release Information Sheets, and Transfer Sheets for the same block were reconciled by taking the earliest admission date, and the latest discharge date.

APPENDIX G**List of S1 Security Level Correctional Facilities in Canada**

Adapted from: Correctional Service of Canada. (July, 1984).
Facilities of the Correctional Service of Canada
poster.

Correctional Facility	Region
Altadore CCC	Prairie
Benoit XV CCC	Quebec
Carlton Centre CCC	Atlantic
Hochelaga CCC	Quebec
Keele CCC	Ontario
Laferriere CCC	Quebec
Martineau CCC	Quebec
Montgomery CCC	Ontario
Ogilvy CCC	Quebec
Osborne CCC	Prairie
Oskana CCC (Multilevel and S1)	Prairie
Pandora Street CCC	Pacific
Parrtown CCC	Atlantic
Pie IX CCC	Quebec
Portal House CCC	Prairie
Portsmouth CCC	Ontario
Robson Street CCC	Pacific
Sand River CCC	Atlantic
Sherbrooke CCC	Quebec
Sumas CCC	Pacific

APPENDIX H

Criminal history and recidivism coding information

(SPSS Data Entry program)

FPS number: _____

Study Period ___ 1=pre-RPC treatment block;
 ___ 2=RPC treatment block;
 ___ 3=post RPC treatment block
 (i.e., recidivism)

If Study Period above is "3," what is the recidivism block number? ___ (for each offender, recidivism block number starts at one, and increases by one for each subsequent recidivism block)

Incarceration block admittance date: _____-----
Year Month Day

Block release Date: ___ 0=absent; n/a; Year Month Day
 1=available;
 2=estimate;
 3=not released

Conviction or charge? ___ 0=charge;
 ___ 1=conviction (list all convictions
 first, followed by
 charges)

Conviction/charge block number ___ (start at "1" for both
 convictions and charges
 for each offender;
 increase by one for each
 new in-out conviction
 block, or new charge
 date)

THF	DRG	NEG	FRD	FTA	ESC	MS	PRO	PAR	WPN	OBS	OTH	SEX	MIS
(Nonviolent offences)													
ROB	ASS	MUR	ATT	WPN	ARS	SEX	KID	Canadian Criminal Code ____.____.____.____.____					
MUR													
(Violent offences)													

Concurrent or consecutive conviction? ____ 0=concurrent;
1=consecutive

Sentence length: _____
Years Months Days

Suspended sentence? ____ 0=no;
1=yes

Probation length: _____
Years Months Days

Miscellaneous information/comments:

APPENDIX I

Detailed Criminal Offence Coding Sheet

Adapted from:

Hare, R.D. (1985). The Psychopathy Checklist. Unpublished manuscript, University of British Columbia, Vancouver, B.C., Canada.

Technical revocations

In addition to technical revocations and violations of conditional release, this category includes "omission" offences such as failing to appear for a court date.

1. Failure to appear, failure to comply with probation order, breach of probation, failure to comply with recognizance, breach of recognizance, jumping bail, abscond bail.
2. Parole violation.
3. Mandatory Supervision violation.

Nonviolent offences

4. Theft, breaking and entering, possession of housebreaking tools, possession of stolen property, theft of telecommunications, disguise with intent, forcible entry, unlawfully in a dwelling house.
5. Drug offences (possession, trafficking).
6. Criminal negligence, including serious driving offences (impaired or dangerous driving, failure to stop at the scene of an accident, hit-and-run).
7. Fraud, forgery, false pretenses, impersonation, uttering, possession of a stolen credit card.
8. Escape, unlawfully at large, prison breach.
9. Obstruction of justice, perjury, contempt of court, resist arrest, give contrary evidence.
10. Crimes against the state, including treason, espionage, smuggling, evasion of income tax, contempt of court, resist arrest, and giving contrary evidence.
11. Nonviolent sexual offences, including indecent telephone calls, voyeurism, and exposing oneself in public.
12. Miscellaneous offences, including vandalism, causing a disturbance, mischief, willful damage, trespassing, conspiracy to commit, setting off a fire alarm, vagrancy, contributing to juvenile delinquency, living off the avails of prostitution, attempted suicide, harassing phone calls, and minor driving offences (e.g., driving while license suspended).

Violent offences

13. Robbery, armed robbery, robbery with violence, extortion.
14. Assault, assault causing bodily harm, uttering threats, taking place in a riot, intimidation.
15. Attempted murder
16. Murder, manslaughter.
17. Possession of a weapon, possession of explosives.
18. Assault with a weapon, pointing a firearm.
19. Arson, setting a fire by negligence.
20. Violent sexual offences, including sexual assault, indecent assault on a female, gross indecency
21. Kidnapping, unlawful confinement, forcible seizure, hijacking

To prevent multiple codings for one offence listing, assault with a weapon was coded as a violent weapon offence rather than as both an assault and a weapon offence. Similarly, sexual assault was coded as a violent sexual offence. If offences clearly fell into several discrete coding categories, multiple codings were made:

Multiple coding categories

1. Sexual assault with a weapon was coded as both a violent sexual offence, and a violent weapon offence.
2. Impaired driving causing death was coded as both negligence and loss of life / murder.
3. Negligence causing bodily harm was coded as both negligence and assault.