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THE UTILIZATION OF A SELF-REPORT INVENTORY IN ASSESSING INCARCERATED OFFENDERS

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ABSTRACT

This study explored the relative efficacy of a paper-and-pencil measure of offender risk/need in the assessment of incarcerated offenders. A Self-report Inventory (SRI) was derived from the interview-based Level of Supervision Inventory (LSI), and both instruments were administered to 100 inmates who participated in a classification research program. In addition, these inmates were also administered a psychometric test battery. The SRI was then evaluated with respect to reliability, validity, and utility. Analyses revealed that the SRI demonstrated both inter-rater reliability and internal consistency as well as construct and predictive criterion validity. Additional analyses showed significant differences between low and high risk offenders assessed by the SRI with respect to institutional misconducts, assaults, and reincarceration. Only for halfway house outcome did the LSI demonstrate any incremental validity relative to the SRI. Finally, a substantial proportion of the variance in institutional misconduct could be accounted for by the SRI. These results suggest that a paper-and-pencil questionnaires can be useful in the prediction of risk and the identification of needs.

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INTRODUCTION

Offender self-reports have been used extensively for research in crime and delinquency (Lab & Allen, 1984). Moreover, self-report paper-and-pencil questionnaires have been utilized in the psychological assessment of criminal offenders (Brodsky & Smithmerman, 1983). Nevertheless, there exists a lack of research regarding the applicability of paper-and-pencil measures for classificatory decision-making in prison. Clearly, the lack of information in this regard points to a need for investigations which encompass self-report paper-and-pencil assessments of incarcerated offenders.

The role of assessment in the classification process entails the systematic selection and matching of offenders with appropriate security designations and program resources (Joyce, 1982). For the most part, offender assessment has been accomplished through personal interviews (Andrews, 1982), ratings by others (Fischer, 1983), direct observation by correctional line staff (Quay, 1983), psychological tests (Clements, 1981), and reviews of official records (Levinson & Williams, 1979). The published studies using self-report paper-and-pencil questionnaires for offender classification have focused almost exclusively on the Minnesota Multiphasic Personality Inventory (MMPI)-based system (Megargee & Bohn, 1979). To date, there appear to have been relatively few attempts to generate any alternatives or improve upon existing instrumentation. In keeping with this view, the purpose of the present study is to explore the relative efficacy of using a

self-report paper-and-pencil version of an interview-based classification instrument for assessing incarcerated offenders.

REVIEW OF THE LITERATURE

Self-report Measures of Crime and Delinquency

The utilization of self-report measures in estimating the incidence of crime and delinquency arises from the contention that not all delinquent behaviors are reflected in official records (Blakely, Kushler, Parisian, & Davidson, 1980). For example, Farrington (1973) has described the use of archivally retrieved data as being more a reflection of police behavior than delinquency. As the more frequent and serious offenders are most likely to be arrested, then official records are deemed not that representative of all criminal activity (Dunford & Elliott, 1984). Nevertheless, Lab and Allen (1984) note that the validity issue of self-reports continues to be unresolved. While a number of studies have provided support for the validity of offender self-reports (Deutscher, 1966; Liska, 1974), others have found offender self-reports to be contrary to official data (Williams & Gold, 1972).

Erickson and Empey (1963) examined the accuracy of official court records as an index of juvenile delinquency. From a random sample of 180 young males (50 who had never been to court, 30 who had been to court once, 50 repeat offenders who were on probation, and 50 incarcerated offenders), self-reported delinquencies were gathered by means of detailed interviews and verified by official court records.

An interview-based method of obtaining data was chosen over a paper-and-pencil questionnaire due to the lack of literacy among delinquent samples. Although a significant relationship was found between appearing in court and the total number of self-reported violations committed (r = .51), only 26% of the variance in self-reported delinquency could be explained in terms of actual court appearances. Moreover, Erickson and Empey (1963) concluded that officially recorded court convictions were more reflective of an offender's single most serious offence than the true extent and nature of offences committed. Similarly, Elliott and Ageton (1980) explored the validity estimates of self-reported delinquency as compared to official data. A 47-item self-report delinquency measure was administered to a sample of 1,726 youths using an interview-based format. Although a self-administered version of the delinquency measure was available (Elliott, Ageton, Hunter, & Knowles, 1976), an interview-based format was selected in order to facilitate confidentiality, informed consent, and personal contact. Results indicated that self-reports encompassed a broad range of delinquents and delinquencies, whereas official measures reflected only the more serious and frequent delinquents and delinquencies. Consequently, offender self-reports are deemed important in determining individual differences with respect to delinquency involvement.

Self-report measures of delinquency provide a different picture of the incidence and distribution of delinquent behavior than do official arrest data (Farrington, 1973; Gould, 1969). Indeed, self-

report instruments have tended to focus on less serious delinquencies to the exclusion of more serious offences. For example, "school, being suspended from school, drinking at home, cheating on school tests, stealing money from parents, making obscene telephone calls, and stealing or trying to steal things worth $5 or less" (Elliott & Ageton, 1980). These activities are deviant but may not necessarily lead to arrest. Since the more frequent and serious offenders are more likely to be arrested, the delinquent population reflected in official police statistics is not a representative sample of all youth (Dunford & Elliott, 1984). Hence, self-report studies sample a range of youth and levels of involvement in delinquent behavior that are not tapped by official arrest data.

Hardt and Peterson-Hardt (1977) administered a self-report paper-and-pencil questionnaire entitled the "Youth Opinion Poll" to 914 male pupils from public schools (grades 7 through 10) located in three demographic areas: black (N = 191), white low income (N = 337), and middle income (N = 337). Data gathered from the self-report questionnaires were appraised by four separate procedures, namely official record of ticketing, official record of police contacts, social desirability, and repetition of identical items. The authors found that the validity of the self-report method was generally high, and emphasized the utility of this technique for both etiological and evaluation studies of delinquency.

Gold (1966) examined the relationship between delinquency, social status, and sex through the use of personal interviews with 522 boys

and girls, who ranged in age from 13 to 16 years. It was found that social status was inversely related to juvenile delinquency among boys, with respect to the frequency and seriousness of their crimes. This finding lends support to official data which indicate that lower status delinquents commit more crimes than their higher status counterparts (Williams & Gold, 1972). However, Gold (1966) also found that delinquency among girls was not related to their social status, contrary to the figures of official data. In their review of the research literature on delinquency studies, Hindelang, Hirschi, and Weis (1979) compared self-report and official methods, using sex, race, and social class as correlates of delinquency. The authors found that when self-report and official measures cover a common base of behaviors, both methods establish that the more serious and persistent delinquents tend to be disproportionately male, older, and of lower socio-economic status.

Among the criticisms of self-report studies lies the fact that most fail to collect data which would allow the simultaneous comparison of officially-reported and self-reported delinquency on the same individuals (Gould, 1969). In addition, surveys of self-reported criminality may be subject to forgetting incidents (memory decay), recalling certain offences to the exclusion of others (memory bias), reporting incidents which are outside the time frame being studied (telescoping), or lying (Elliott & Ageton, 1980; Erickson & Empey, 1963; Hardt & Peterson-Hardt, 1977). Moreover, many studies have used samples which were small and non-representative thereby limiting

their generalizability (Elliott & Ageton, 1980).

In sum, the available research provides some support for the reliability and validity of the self-report method in measuring delinquency. Notwithstanding the potential methodological flaws inherent in self-report measures of crime and although most studies tend to focus on less serious delinquent acts, it is important to appreciate the utility of self-report surveys insofar as they address etiological concerns and delinquency theories. Consequently, theories based on self-report studies would provide more accurate measures of the types of delinquents and delinquencies, and therefore explain a wider range of behaviors.

Self-report Measures in Psychological Assessment

Shrauger and Osberg (1981) defined psychological assessment as involving predictions about people's behavior that will aid in decision-making. A review of the current literature would indicate that there are both traditional and behavioral approaches to psychological assessment. The differences between traditional and behavioral assessment are not necessarily methodological, but rather conceptual (Cone, 1977). In other words, both approaches utilize the same assessment methods, such as interviews and paper-and-pencil questionnaires, however their underlying assumptions about human behavior differ radically. Whereas the traditional approach considers behavior as the result of stable and enduring causes or traits, the behavioral approach views it within the context of antecedents and consequent stimuli in the environment (Burns, 1980; Hartmann et al.,

1979). Given that both approaches share the same method, and for the purpose of the present paper, psychological assessment will be viewed as incorporating both traditional and behavioral assessment.

The self-report paper-and-pencil questionnaire is one of the most commonly used methods in psychological assessment and characterized as an indirect measure (Cone, 1977; Cone & Hawkins, 1977). Cone (1977) categorized self-reports (e.g., questionnaires, interviews, and personal data blanks) as indirect techniques of measurement because the assessor does not directly observe target behaviors, but rather relies on clients' verbal reports concerning their behaviors. On the other hand, direct measurement methods enable the assessor to directly observe actual behaviors, either through participant observation, direct observation in naturalistic and analogue settings, or physiological measures (Cone, 1977; Cone & Hawkins, 1977).

Notwithstanding the fact that interview-based assessments have been one of the most universally applied methods for obtaining information, the self-report inventory is also popular (Cone & Hawkins, 1977). For instance, Walsh (1967) examined the accuracy of three assessments methods, namely the paper-and-pencil questionnaire, the interview, and the personal data blank. Results indicated that valid estimates could be provided by self-report questionnaires and that no one method was more accurate than another. Walsh (1968) replicated this study and again found that no one method elicited more accurate information than another, and that neither financial nor social incentives were associated with improved accuracy of self-

reports. Finally, in a predictive validity study on the performance of Peace Corps volunteers in Nigeria, Mischel (1965) found that self-report paper-and-pencil measures (e.g., California F, Ego Strength, and Manifest Anxiety Scales) were related significantly to performance abroad, whereas ratings by interview-derived ratings (e.g., training faculty, assessment board, and interviewers) were not significantly related to the criterion.

In comparison to other measurement techniques, self-report paper-and-pencil inventories can be administered with minimal effort and cost; in fact, questionnaires have been claimed to be one of the most efficient methods of assessment (Haynes, 1978). Furthermore, these assessment instruments can be useful with populations which are not readily observable in the social environment (Haynes & Wilson, 1979). For example, it may not be feasible to assess criminal offenders in their natural environment, especially if they are incarcerated. Hence, only indirect assessment methods are possible, such as interview-based and/or paper-and-pencil inventories.

Among some of the threats to the validity of self-report paper-and-pencil inventories is social desirability which can be manifested through either malingering or faking (Guilford, 1959; Haynes & Wilson, 1979). Just as some subjects may be motivated to "fake good", insofar as choosing answers which create a favorable impression, others may tend to "fake bad" by making themselves appear more maladjusted than they actually are (Anastasi, 1982). While faking good refers to the tendency to give socially desirable responses to items in paper-and-

pencil inventories, faking bad pertains to the inclination of endorsing socially undesirable responses to self-referent statements (Edwards, 1957). In administering self-report paper-and-pencil inventories to an offender population for example, inmates may fake good with the hope that their performance on these questionnaires may increase the likelihood of gaining freedom from incarceration. On the other hand, inmates who fake bad may be exaggerating their problems in an attempt to obtain a transfer to a more preferred location with better living conditions (Gendreau, Irvine, & Knight, 1973).

In any case, the conscious or unconscious tendency of offenders to portray themselves in a particular manner may considerably distort the information derived from paper-and-pencil questionnaires. However, methods are available to detect distortions made by offenders. For example, Irvine, O'Dell, and Gendreau (1978) examined the accuracy of three MMPI validity scales (L, F, and K) in detecting response bias in correctional samples. They found that the "F" (faking) scale of the MMPI was an accurate measure of faking bad responses, and that a combination of the MMPI's "L" (lie) and "K" (social desirability) scales were useful in detecting response bias.

Another potential threat to the validity of paper-and-pencil questionnaires is the structuring and content of items (Haynes & Wilson, 1979). Cone and Hawkins (1977) have noted that the less specific and concrete the wording of the items, the greater the probability of misinterpretation and, consequently, of lowered validity with respect to measures obtained. This factor is

particularly important when questionnaires are administered to incarcerated offenders who generally tend to have limited educational backgrounds. Hence, misunderstanding and misinterpretation of questionnaire items may be partly avoided if the wording of these items is kept clear, simple, and to the point. In the case of educationally impoverished, psychologically impaired, or mentally disordered offenders, it is crucial to identify these individuals as paper-and-pencil measures may not be the appropriate method of assessment.

Finally, two additional factors which may limit the validity of questionnaires deserve attention. Firstly, although not as serious a problem in self-report inventories which assess behavior than in self-report instruments which specifically measure rates of crime and delinquency, "recall" may affect the validity of questionnaires. The second factor concerns subjects' "frame of mind" at the time of test administration. For instance, in dealing with an incarcerated population it is important to be aware of inmates' preoccupation with such matters as "Dear John" letters, awaiting a visit from their wives/girlfriends, or a recent denial of parole. In these cases, it is more appropriate to administer questionnaires at a later time. In sum, the above-mentioned factors are all capable of decreasing the degree of confidence that can be placed in the data derived from a self-report instrument (Haynes & Wilson, 1979).

Offender Classification Systems

Classification had its beginnings in the late 18th century, when reformers started separating males and females, juveniles and adults, first offenders and recidivists, as well as the mentally disordered from the rest of the offender population. Whereas these initial efforts were mainly concerned with the management of incarcerated offenders, progressive penologists of the early 1900's shifted the focus to more individualized treatment regimes for inmates (Gettinger, 1932). Correspondingly, the prevailing philosophy of corrections was changed from retribution and incapacitation to rehabilitation.

Offender classification is based upon the premise that not only are there wide differences among offenders but also that there are similar subgroups within the offender population (Clements, 1981). Hence, the classification process may essentially be viewed as the linking of classes of offenders to classes of action (i.e., correctional programs and facilities) and it is intended to maximize the likehood of meeting offenders' treatment and security needs as well as public protection.

Classification decisions are now being made at several points in the criminal justice system, namely pre-trial, sentencing, probation/parole supervision as well as institutional custody and transfer (Greenhalgh, Jordan, Deland, & Lund, 1979). Traditionally, such decisions have been based on interview-based intuition and subjectivity (Monahan, 1981). As a consequence, offenders were often misclassified and limited resources were improperly allocated

(Clements, 1981). In an attempt to circumvent these shortcomings, a recent trend in the field of corrections has been towards system-oriented offender classification, as evidenced by the proliferation of objective assessment procedures for classifying criminal offenders (Clements, 1981; Palmer, 1978). System-oriented classification has been described as a process which tries to meet legal, administrative, and program goals as well as public, offender and system needs (Fowler, 1981). Furthermore, a common element of system-oriented classification is the utilization of both objective instrumentation and empirical validation methodologies to derive classifications (Austin, 1983).

To date, there have been many attempts to demonstrate the relative efficacy of these classification systems in meeting various correctional goals (Clements, 1982; Gottfredson & Gottfredson, 1982). In general, attention has focused on both in-program performance (Hanson, Moss, Hosford, & Johnson, 1983; Wright, Clear, & Dickson, 1984) and post-release recidivism (Gendreau, Madden, & Leipciger, 1980; Wormith & Goldstone, 1984) as the variables most relevant to correctional decision-making. These criteria have been utilized to evaluate many classification instruments and the following review examines two systems that employ a self-report inventory to assess adult offenders at the institutional level, namely the MMPI-based Classification system and the Level of Supervision Inventory system.

Minnesota Multiphasic Personality Inventory-based Classification

In the State of Florida, the Minnesota Multiphasic Personality Inventory (MMPI)-based system is used for the classification of offenders in correctional settings. The MMPI-based system utilizes the MMPI, a standardized self-report inventory which has been used extensively as an objective method of personality assessment (Hathaway & McKinley, 1967), and a complex set of rules for classifying offender profiles (Megargee & Dorhout, 1977). The 566 items of the MMPI are completed by offenders, then subsequently scored, profiled and classified into types. The MMPI-based system provides ten profile types for offenders which are labelled with nondescriptive titles (Meyer & Megargee, 1977). These offender types may be rank-ordered from the most benign to the most pathological: Item, Easy, Baker, Able, George, Delta, Jupiter, Foxtrot, Charlie, and How (Megargee & Bohn, 1979). In addition, the MMPI-based system reassigns these offender types into three groups: "predatory" (Charlie, Delta, Foxtrot), "prey" (Baker, George, Jupiter, How), and "average" (Able, Easy, Item).

Research conducted by Megargee and his colleagues (Megargee, 1977; Megargee & Bohn, 1979; Megargee & Dorhout, 1977; Meyer & Megargee, 1972) with adult inmates at the medium security Federal Correctional Institute at Tallahassee, Florida has revealed 10 reliably occurring MMPI profile configurations and inter-rater reliability estimates ranging from 87% to 91%. Although estimates of internal consistency are not available for the MMPI-based system,

temporal stability has ranged from 60% to 93% for under four months (Nelson, 1981; Simmons, Johnson, Gouvier, & Muzyka, 1981; Johnson, Simmons, & Gordon, 1983), from 69% to 81% for between four and 10 months (Nichols, 1979; Johnson et al., 1983), and from 72% to 73% for more than 10 months (Doren & Megargee, 1980; Simmons et al., 1981).

In validating the MMPI-based system, Megargee and Bohn (1979) examined the institutional performance and recidivism of over 1,000 inmates and found that MMPI-based types were related to number of days confined to cell house ($p < .003$), five work performance ratings (i.e. interest, ability to learn, need for supervision, response to supervision, and ability to work with others), three educational evaluations (i.e. goal motivation, response to supervision, and emotional stability), and reincarceration at 18 month follow-up ($p < .02$). However, the MMPI-based system was also unrelated to number of disciplinary write-ups, attendance at sick call, four work performance ratings (i.e. quality of work, quantity of work, initiative, and overall job proficiency), achievement in education, and reconvictions at follow-up. In a differential unit assignment study with inmates (N = 563), Bohn (1980) reported that the overall rates of violence within the institution had decreased significantly using the MMPI-based system. Upon closer examination of the data however, the noted decrease was differential with respect to unit assignments as a considerable increase in assault rates was observed in several dormitories. Moreover, the post-implementation assault rate returned to original levels within the institution after two years.

Notwithstanding the fact that an extensive body of validity information has been accumulated by Megargee and Bohn (1970), the MMPI-based system still lacks considerable empirical support with regards to its predictive utility.

A substantial number of cross-validation efforts have been conducted by various researchers using the MMPI-based system with a variety of offender samples. In a sample of 2,063 FCI inmates at Petersburg, Virginia, Edinger (1979) found significant differences among MMPI-based types on measures of verbal aggression ($p < .005$), group defiance ($p < .001$), as well as total number of rule infractions ($p < .005$). However, no significant results were obtained on measures of evasion and pilfering. Booth and Howell (1980) evaluated the predictive validity of the MMPI-based system by examining the institutional adjustment of 641 inmates at Utah State Prison. Significant differences were found for major write-ups ($p < .04$), minor write-ups ($p < .05$), and likelihood of placement in a protection unit ($p < .05$). Non-significant results were found with respect to very minor write-ups, maximum custody placement, and psychiatric hospitalization.

Turning to penitentiary settings, Hanson, Moss, Hosford, and Johnson (1983) assessed the predictive utility of the MMPI-based typology on 337 inmates at the U. S. Penitentiary at Lompoc and showed that the system was not highly predictive of future institutional performance. Louscher, Hosford, and Moss (1983) also examined the effectiveness of the MMPI-based classification system in predicting

dangerous behavior in a penitentiary setting (N = 520). On two of five institutional adjustment measures, significant differences were found: number of incident reports ($p < .03$) and type of infractions ($p < .05$). Louscher et al. (1983) reported no significant differences among MMPI-based types for number of admissions to the administrative detention unit, as well as number or type of administrative remedies. In addition, the MMPI-based typology was not found to be predictive of either antisocial or aggressive behavior. Extending the MMPI-based classification system to a Canadian Penitentiary setting, Wormith, Borzecki, and Black (1984) undertook a validation study on a sample of 276 maximum-security psychiatric inmates. Three of the MMPI-based offender types (Baker, Foxtrot, and Jupiter) exhibited frequencies so low that they had to be omitted from analyses. Hence, a note of caution was mentioned regarding the generalizability of the MMPI-based system to Canadian psychiatric penitentiary inmates. Further analysis of available data suggested only minimal predictive validity for the MMPI-based system with respect to penitentiary settings.

Moss, Johnson, and Hosford (1984) examined the predictive validity of the MMPI-based classification system in relation to institutional performance and future recidivism in a sample of 96 black inmates at FCI Lompoc, California. Results indicated that MMPI types were unrelated to incidences of institutional violence and future violent criminal activity. Similarly, Carey, Garske, and Ginsberg (1986) reported mixed predictive validity support for the MMPI-based system at the Chillicothe Correctional Institute in Ohio (N

= 503). The MMPI-based system achieved predictive validity only when white samples were considered. Moreover, three MMPI-based types (Baker, Foxtrot, and Jupiter) necessitated omission from the analyses due to infrequency, as in Wormith et al's (1984) study. Nevertheless, there were overall significant effects for write-ups ($p < .05$), nights in a correctional cell ($p < .05$), and utilization of mental health services ($p < .001$). No significant effects were found for cell changes, participation in educational and vocational programs, as well as placements into administrative control or psychiatric facilities. Despite the fact that the MMPI-based system was derived from a sample composed of approximately one third black inmates (Megargee & Bohn, 1979), the aforementioned studies cast considerable doubt on the predictive utility of MMPI-based classification with black offender samples.

Finally, a comparison of the MMPI-based system with demographic variables, Security Designation, and Custody Classification in predicting institutional adjustment in a penitentiary setting revealed that, apart from age, the MMPI-based system was the most effective predictor of number of disciplinary reports, days spent in segregation, loss of earned remission, and work performance ratings (Hanson et al., 1983).

In sum, the available data suggest that the MMPI-based classification system demonstrates minimal predictive validity in relation to measures of institutional performance. Furthermore, apart from Megargee and Bohn (1979), MMPI-based estimates of post-release

recidivism were lacking and require further exploration.

The Level of Supervision Inventory Classification

In the Province of Ontario, the Level of Supervision Inventory (LSI) serves as a classification system for probationers. The LSI classification system utilizes a comprehensive survey instrument (LSI-VI) which assesses an offender's risk level and needs (Andrews, 1982). The 58 items of LSI-VI (see Appendix A) were derived from an extensive review of the recidivism literature as well as consultations with probation officers. The information necessary for completion of the LSI-VI is gathered via a standardized interview and a review of official records. The items are scored in a binary format ("0" if not applicable and "1" if applicable) and distributed across various subcomponents (e.g., Education/Employment, Companions). The total LSI score is the summation of checked items and corresponds to different levels of supervision. According to their level of supervision, offenders are allocated correctional controls and services.

Research conducted with 561 probationers by Andrews and his colleagues (Andrews, 1982; Andrews, Kiessling, Mickus, & Robinson, 1986) has shown that the LSI demonstrates internal consistency (alpha = .72), inter-rater reliability (r = .94), and temporal stability (r = .80 over several months). Moreover, LSI subcomponent scores were found to be correlated with alternative measures of the same construct, and the LSI total score was predictive of staff evaluations of case progress (r = .40), recidivism while on probation (r = .47), postprogram recidivism (r = .47), and severity of re-offence (r =

.39). In an experimental study with adult probationers (N = 57), Andrews and Robinson (1984) reported on the differential effects of the LSI classification system and found that changes in LSI scores were related to progress during treatment. Thus, it would appear that the LSI classification system has undergone considerable empirical validation with respect to probation samples.

In order to extend the use of the LSI as a classification instrument, a series of validation studies were undertaken with incarcerated offenders placed into correctional halfway houses. In a sample of 164 halfway house candidates, Bonta and Motiuk (1985) reconfirmed the internal reliability (alpha = .71) and convergent validity of the LSI. With respect to predictive validity, intake LSI scores were correlated with adjustment to community-based residential centres (r = .52) and reincarceration during a one year postprogram follow-up (r = .40). Finally, a comparison of the LSI to the Megargee MMPI-based classification system showed improved predictive accuracy for the LSI (Motiuk, Bonta, & Andrews, 1986).

Turning to inmate adjustment in prison, Bonta and Motiuk (1986a) examined the institutional performance of 152 incarcerated offenders and found that intake LSI scores were related to security classification (r = .35), misconducts (r = .16), assaults (r = .20), days in segregation (r = .31), and occurrence reports (r = .26). Significant effects were also found for early release, temporary absence deferrals, ratings by incentive review committees, and reincarceration at one year follow-up. Bonta and Motiuk (1987a)

examined the effects of action taken as a function of the LSI score on 270 sentenced offenders. Offenders with LSI scores less than or equal to 14 were diverted from continued institutional placements and placed into correctional halfway houses. Although there was no significant increase in the number of transfers to halfway houses, there was an increase in terms of length of stay with no increased risk to the community. In another study, Bonta and Motiuk (1987b) found that the LSI was a predictor of misconducts (r = .23), assaults (r = .16), and occurrence reports (r = .18) for 580 inmates assessed at three large Detention Centres. Overall, the available data suggest that the LSI classification instrument yields impressive predictions of both inprogram performance and post-release recidivism across a variety of offender settings.

Present Study

The relationship between classification and treatment has not been addressed in the published literature (Sechrest, 1987). Bridging the gap between classification and treatment could possibly be defined by increased offender participation in the classification process. For example, Megathlin, Magnus and Christiansen (1977) contend that the success of objective classification systems and ultimately, the success of treatment programs, is highly contingent upon the offenders' involvement in determining both the direction and extent of their own program. It is suggested that classification instruments which provide offenders the opportunity to become more involved in their assessments will be more effective in altering correctional

outcomes. In keeping with this view, the purpose of the present study is to develop and validate a self-report paper-and-pencil version of the interview-based LSI classification instrument. More specifically, the psychometric characteristics of this self-report paper-and-pencil questionnaire will be examined in order to determine its relative efficacy in assessing incarcerated offenders.

Objective classification instruments are subject to considerable fine-tuning before they can be implemented. Megargee (1977) stressed that reliability and validity are two criteria for establishing a good classification system. Given that the theoretical framework of this paper is based on a psychometric approach, it is deemed relevant to review fundamental psychometric properties. However, in view of the lengthy list of psychometric properties that can be investigated, the discussion will only focus upon those properties relevant to the present study.

Reliability estimation refers to the consistency of scores obtained by the same persons, when re-examined with the same instrument on different occasions, or under variable examining conditions (Anastasi, 1982). The major types of reliability investigated in this study were internal consistency and inter-rater reliability, and the choice of reliability checks depends on the purpose of the test scores (Anastasi, 1982; Nunnally, 1978).

Internal consistency refers to the relationship among items of an instrument, or the relationship between these items and the overall score derived from the instrument (Anastasi, 1982). Internal

consistency can be measured by various procedures including inter-item correlations, split-half reliabilities, cluster analyses, and factor analyses (Haynes & Wilson, 1979).

Inter-rater reliability measures the level of agreement among raters in their scoring of the instrument for a target subject (Anastasi, 1982). The calculation of percentage agreement in scores obtained from different raters gives a measure of inter-rater reliability.

Validity estimation is another useful approach for establishing the quality of an objective assessment instrument. Pertinent to most validation efforts for the assessment tool investigated are estimates of construct, predictive, and incremental validity.

Construct validity refers to the extent to which an instrument may be said to measure a theoretical construct. A construct represents a hypothesis that a range of behaviors will correlate with one another in studies of individual differences and/or will similarly be affected by experimental treatments (Nunnally, 1978). Measures with construct validity are those which consistently behave as the majority of measures do (Anastasi, 1982). Methods utilized to establish construct validity include factorial, convergent, and divergent validities. Factorial validity is derived through factor analysis and may be described as the loading an instrument has on a particular factor or behavioral domain (Brown, 1976). For example, Quay (1983) applied the factor analytic method to the Checklist for the Analysis of Life History Records and found that three principal factors emerged namely,

"aggressive-psychopathic", "inadequate-dependent", and "neurotic-anxious". In order to demonstrate convergent validity, an instrument is expected to correlate highly with other variables with which it should theoretically correlate, and divergent validity is established when the instrument does not correlate with variables from which it differs (Campbell & Fiske, 1959).

Predictive validity indicates the effectiveness of an instrument in predicting an individual's behavior in specified situations, and for this purpose, the score obtained is checked against a criterion (Nunnally, 1978). This type of validity refers to the degree to which scores on the target questionnaire are correlated with data on the target subjects derived from other instruments administered at a later point in time (Haynes, 1978).

Finally, incremental validity refers to increases in predictive efficiency of an instrument, insofar as improvements in prediction are noted when information is added to data otherwise made available (Sechrest, 1963). For example, Garb (1985) found that the validity of personality assessments increased when biographical, MMPI, or neurological information were added to demographic or psychometric data.

METHOD

Setting

The study was conducted at a maximum-security Detention Centre which houses both male and female offenders who are remanded or recently sentenced. Offenders sentenced between 124 days and two years less a day are classified at the Provincial level and then usually transferred to more long-term correctional centres (sentences exceeding two years are a Federal responsibility). However, there exists a possibility for some offenders to remain at the Detention Centre for extended periods if they are awaiting disposition for additional charges, or transfer to a special needs institution (e.g. treatment-oriented), or halfway house.

Subjects

Incarcerated adult male offenders who voluntarily participated in a larger study on classification (Bonta & Motiuk, 1986b), served as subjects in this research. From an initial sample of 376 inmates who had completed LSI interviews and were sentenced between 124 days and two years less a day, the first 100 inmates who completed full psychometric test batteries served as the study sample. Of this sample, 99 offenders were available for an institutional follow-up and 97 offenders were available for a one year post-release follow-up.

The offenders ranged in age from 16 to 57 years ($\underline{M}$ = 25.1, $\underline{SD}$ = 8.6) and were primarily Caucasian. The average IQ, as measured by the Quick Test of Intelligence (Ammons & Ammons, 1962) was 90 ($\underline{SD}$ = 8.5)

and level of education was grade 10.2 (SD = 1.6). Sentence length (M = 346.4, SD = 194) ranged from 126 to 768 days with a few offenders receiving additional dispositions while serving their Provincial sentences. The most frequent offence categories were property-related crimes (59%) and crimes against persons (26%).

In this study, 63% of the sample were transferred to correctional centres (17% minimum security, 35% medium security, and 11% maximum security). Of those who remained at the Detention Centre, 23 (62.2%) of the remaining 37 offenders were eventually transferred to correctional halfway houses.

Instruments

A self-report version of the interview-based LSI was constructed by using the items in the inventory as well as the LSI scoring guide (Andrews, Kiessling, and Kominar, 1983) to generate self-referent statements regarding personal attributes and situations. Subsequently, revisions and refinements of a preliminary version by the authors of the LSI resulted in a 78-item paper-and- pencil questionnaire (see Appendix B) called the Self-report Inventory (SRI).

Congruent with the LSI, the SRI was scored in a 0-1 format (a scoring stencil was constructed for the SRI). Furthermore, it was also comprised of 10 separate categories or subcomponents: Criminal History (A), Education/Employment (B), Financial (C), Family/Marital (D), Accommodation (E), Leisure/Recreation (F), Companions (G), Alcohol/Drug Problems (H), Emotional/Personal (I), and Attitude/ Orientation (J). The majority of SRI items were answered in a true-

false or yes-no format, however, several questions required a specific answer (e.g., How many times have you been convicted of an offence since your 16th birthday?). Only one item had a four-point Likert response format.

In addition to the LSI interview and paper-and-pencil SRI, all offenders were administered a psychometric test battery. This was done in order to assess the construct validity of the SRI. The subcomponents that were evaluated were selected partly because of the availability of paper-and-pencil alternate measures. This ensured that the method (i. e. paper-and-pencil) was consistent across evaluations.

Procedure

Upon completion of the LSI interview by a classification officer, the offender was referred to the Psychology department and asked to volunteer in an ongoing classification research program. Inmates were informed that participating in the research was not a condition of their sentence and that participation was in addition to the requirements of the Ministry's rules and regulations (see Appendix C). After the offender volunteered to be a participant, the reading subtest of the Wide Range Achievement Test (Jastak & Jastak, 1978) was administered. Only inmates with reading scores of grade six and over were administered the full psychometric test battery and therefore, were selected as participants in the present study.

Six SRI/LSI subcomponents were evaluated for convergent validity by entering alternate measures of the same construct into a multiple regression analysis. The Education/Employment subcomponent (B) was

evaluated by the measures: Awareness of Limited Opportunities Scale (Andrews, Daigle-Zinn, & Wormith, 1974) and Scholastic Maladjustment Scale (Peterson, Quay, & Cameron, 1959). The Family Dissension Scale (Peterson et al., 1959) served as an alternate measure of the Family/Marital subcomponent (D). The Companions subcomponent (G) was evaluated by the measures: Pd Scale of the MMPI (Hathaway & McKinley, 1967) and Identification with Criminal Others Scale (Andrews et al., 1974). The Unpleasant Emotions, Physical Discomfort, Pleasant Emotions, Testing Control over Alcohol, Urges/Temptations to Drink, Conflict with Others, Pressure from Others to Drink, and Pleasant Times with Others Scales of the Inventory of Drinking Situations (Annis, 1986) and MacAndrews Alcoholism Scale (MacAndrews, 1965) served as alternate measures of the Alcohol/Drug Problems subcomponent (H). The Emotional/Personal subcomponent (I) was evaluated by the measures: Self-esteem Scale (Bennett, Sorenson, & Forshay, 1971), Empathy Scale (Hogan, 1969), IPAT Anxiety Scale (Krug, Scheier, & Cattell, 1976), Internal, Powerful Others, and Chance Scales of the Locus of Control Scales (Levenson, 1973), Socialization Scale (Gough, 1969), and Psychopathy, Neuroticism, and Inadequacy Scales (Peterson et al., 1959). The Attitudes Towards Law, Courts, and Police Scales (Andrews et al., 1974) and Tolerance of Law Violations Scale (Andrews et al., 1974) served as measures of the Attitude/Orientation subcomponent (J). Finally, the three MMPI validity scales (L, F, and K) served as measures to detect response bias in both the SRI and LSI.

For each offender, the LSI interview and psychometric data were

gathered before transfer to one of the correctional centres or halfway houses. Once transferred from the Detention Centre, the offender had no further contact with the research staff. Information about institutional behavior and recidivism was available from the Ministry of Correctional Services' (Ontario) Adult Information System. Institutional performance was defined as misconduct, assault, or halfway house outcome (i.e. successful or unsuccessful completion of sentence at house). Post-release recidivism was defined as parole violations or reincarcerations within one year of their release.

RESULTS

The total scores on the SRI ranged from 4 to 41 (M = 23.7, SD = 9.9), and the LSI total scores ranged from 4 to 42 (M = 23.7, SD = 9.3). The correlation between the total scores of SRI and LSI was .78 ($p < .001$).

Reliability Estimates

Inter-rater Reliability. In order to determine the percentage agreement in ratings, two different raters each scored 10 randomly selected SRI's (see Table 1). Both raters scored five SRI's with a scoring stencil and the remaining five protocols were scored using the LSI scoring guide. SRI total scores were summated and regrouped into one of three ratings: low (0 thru 14), medium (15 thru 20), and high (21 thru 54). Results indicated an overall inter-rater agreement rate of 90% for both methods of scoring.

Table 1

Percentage Agreement of SRI Ratings

Type of Rater	Number of Raters	n	% Agreement
SRI Scoring Stencil	2	10	90
LSI Format Schedule	2	10	90
Combined	2	20	90

Internal Consistency. The intercorrelations among the SRI subcomponents and the correlations between the subcomponent scores and the SRI total scores are presented in Table 2. The SRI subcomponent-total scores are corrected, insofar as the total score does not include the corresponding subcomponent. The overall reliability coefficient (alpha) was .76.

Table 2

SRI Subcomponent Intercorrelations and Subcomponent-Total Correlations

	SRI Subcomponents									
SRI Subcomponents	A	B	C	D	E	F	G	H	I	J
A. Criminal History										
B. Education/Employment	.38									
C. Financial	.13	.04								
D. Family/Marital	.32	.29	.07							
E. Accommodation	.37	.49	.07	.38						
F. Leisure/Recreation	.15	.30	-.13	.17	.39					
G. Companions	.52	.52	.06	.21	.57	.41				
H. Drug/Alcohol Problems	.35	.39	.05	.36	.44	.47	.46			
I. Emotional/Personal	.27	.08	.14	.20	.08	-.03	.09	.25		
J. Attitude/Orientation	.31	.32	-.02	.20	.30	.43	.45	.40	-.05	
Total	.54	.54	.24	.42	.60	.42	.63	.59	.23	.46
M	5.4	4.9	0.9	1.6	1.0	1.1	2.6	3.2	1.8	1.2
SD	2.6	2.7	0.6	1.1	0.9	0.8	1.3	2.8	1.6	1.1

Note. Correlations greater than or equal to .19 are significant at $p < .05$.

The LSI subcomponent intercorrelations and subcomponent-total correlations are shown in Table 3. The LSI subcomponent-total scores are also corrected. The overall reliability coefficient (alpha) was .72.

Table 3

LSI Subcomponent Intercorrelations and Subcomponent-Total Correlations

	LSI Subcomponents									
LSI Subcomponents	A	B	C	D	E	F	G	H	I	J
A. Criminal History										
B. Education/Employment	.44									
C. Financial	.32	.41								
D. Family/Marital	.39	.34	.39							
E. Accommodation	.20	.31	.24	.17						
F. Leisure/Recreation	.39	.45	.30	.25	.30					
G. Companions	.44	.38	.15	.26	.13	.34				
H. Alcohol/Drug Problems	.36	.23	.13	.30	.23	.25	.38			
I. Emotional/Personal	.26	.15	.14	.22	.13	-.01	-.02	.30		
J. Attitude/Orientation	.09	.04	.18	.23	.04	.05	.22	.17	.04	
Total	.60	.47	.46	.55	.34	.50	.48	.38	.24	.05
M	5.3	5.8	1.1	1.5	0.8	1.7	2.1	3.5	1.4	1.0
SD	2.5	3.1	0.8	1.1	0.9	0.6	1.4	2.2	1.3	1.3

Note. Correlations greater than or equal to .19 are significant at $p < .05$.

Validity Estimates

Construct Validity. Construct validity for the SRI was provided by an analysis of the relationship between the various subcomponents of the SRI and LSI. The results of this analysis are presented in Table 4. In general, the SRI subcomponents demonstrated satisfactory correlations with their LSI counterparts. Exceptions to this general pattern involved two subcomponents; namely, Financial (r = .22) and Attitude/Orientation (ns).

Table 4

Pearson Correlations Between SRI and LSI Subcomponents

	SRI Subcomponents									
LSI Subcomponents	A	B	C	D	E	F	G	H	I	J
A. Criminal History	.80									
B. Education/Employment		.71								
C. Financial			.22							
D. Family/Marital				.50						
E. Accommodation					.48					
F. Leisure/Recreation						.41				
G. Companions							.49			
H. Alcohol/Drug Problems								.57		
I. Emotional/Personal									.55	
J. Attitude/Orientation										.12

Note. Correlations greater than or equal to .19 are significant at $p < .05$.

Table 5 presents multiple correlations between the various SRI subcomponents and alternate measures of the same construct. Results indicated convergent validity for six of the SRI subcomponents (Education/Employment, Family/Marital, Companions, Alcohol/Drug Problems, Emotional/Personal, and Attitude/Orientation).

Table 5

Convergent Validity: Multiple Correlations Between SRI Subcomponents and Alternate Measures

SRI Subcomponent	Alternate Measure(s)	MR
B. Education/Employment	Limited Opportunities Scholastic Maladjustment	.53
D. Family/Marital	Family Dissension	.39
G. Companions	Identification with Criminal Others	.56
H. Alcohol/Drug Problems	Urges/Temptations to Drink Unpleasant Emotion	.59
I. Emotional/Personal	IPAT Anxiety Total Score	.33
J. Attitude/Orientation	Tolerance of Law Violations Attitudes Towards Courts	.60

Convergent validity for the LSI subcomponents is presented in Table 6. Five LSI subcomponents showed convergent validity with alternate measures (Education/Employment, Family/Marital, Companions, Alcohol/Drug Problems, and Emotional/Personal).

Table 6

Convergent Validity: Multiple Correlations Between LSI Subcomponents and Alternate Measures

LSI Subcomponent	Alternate Measure(s)	MR
B. Education/Employment	Limited Opportunities Scholastic Maladjustment	.52
D. Family/Marital	Family Dissension	.48
G. Companions	Identification with Criminal Others	.45
H. Alcohol/Drug Problems	Unpleasant Emotion Testing Control Over Emotions	.56
I. Emotional/Personal	IPAT Anxiety Total Score	.29

Table 7 presents the correlations between the SRI subcomponents and total score and MMPI validity scales. Correlational analyses revealed significant correlations between SRI total scores and MMPI validity scales.

Table 7

Pearson Correlations Between SRI Subcomponents and Total Score and MMPI Validity Scales

SRI Subcomponents	MMPI Validity Scales		
	L	F	K
A. Criminal History	-.26**	.27**	-.14
B. Education/Employment	-.36***	.36***	-.22*
C. Financial	.02	-.00	.08
D. Family/Marital	.05	.26**	-.09
E. Accommodation	-.34***	.40***	-.35***
F. Leisure/Recreation	-.25**	.43***	-.36***
G. Companions	-.41***	.48***	-.40***
H. Alcohol/Drug Problems	-.20*	.40***	-.13
I. Emotional/Personal	.08	.19*	.05
J. Attitude/Orientation	-.35***	.59***	-.39***
Total	-.35***	.56***	-.29**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Pearson correlations between the LSI subcomponents and total score and MMPI validity scales are shown in Table 8. Significant correlations were also found between LSI total scores and MMPI validity scales.

Table 8

Pearson Correlations Between LSI Subcomponents and Total Scores and MMPI Validity Scales

LSI Subcomponents	MMPI Validity Scales		
	L	F	K
A. Criminal History	-.22*	.26**	-.14
B. Education/Employment	-.34***	.32***	-.21*
C. Financial	-.12	.13	-.04
D. Family/Marital	-.15	.26**	-.08
E. Accommodation	-.17	.29**	-.06
F. Leisure/Recreation	-.21*	.22*	-.11
G. Companions	-.29**	.37***	-.32***
H. Alcohol/Drug Problems	-.10	.24**	-.20*
I. Emotional/Personal	-.07	.14	-.01
J. Attitude/Orientation	.12	.11	.03
Total	-.28**	.40***	-.20*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

In a varimax rotated factor analysis of the SRI subcomponents (see Table 9), two factors emerged. The first factor accounted for 36.7% of the variance with Companions subcomponent loading the highest (.78). A second factor accounted for 13.8% of the variance with Emotional/Personal loading the highest (.72).

Table 9

Varimax Rotated Factor Analysis for the SRI

SRI Subcomponent	Component		Communality
	Factor I	Factor II	
A. Criminal History	.55	.48	.53
B. Education/Employment	.67	.14	.48
C. Financial	-.06	.59	.35
D. Family/Marital	.44	.41	.36
E. Accommodation	.72	.17	.55
F. Leisure/Recreation	.70	-.33	.59
G. Companions	.78	.11	.63
H. Alcohol/Drug Problems	.71	.20	.54
I. Emotional/Personal	.06	.72	.52
J. Attitude/Orientation	.68	-.19	.50
Percent of Variance	36.7	13.8	

A varimax rotated factor analysis of the LSI subcomponents (see Table 10) resulted in four factors. The first factor accounted for 32.8% of the variance with Education/Employment subcomponent loading the highest (.72). A second factor accounted for 11.7% of the variance (Companions with a factor loading of .82). The third factor accounted for 11.0% of the variance (Attitude/Orientation loading .84). Finally, a fourth factor accounted for 10.0% of the variance with Emotional/Personal subcomponent loading the highest (.91).

Table 10

Varimax Rotated Factor Analysis for the LSI

LSI Subcomponent	Component				
	Factor I	Factor II	Factor III	Factor IV	Communality
A. Criminal History	.45	.54	.12	.26	.57
B. Education/Employment	.72	.30	.07	.03	.62
C. Financial	.69	-.15	.48	.08	.74
D. Family/Marital	.40	.17	.54	.30	.57
E. Accommodation	.59	.06	-.11	.17	.40
F. Leisure/Recreation	.65	.41	-.04	-.19	.63
G. Companions	.17	.82	.19	-.16	.76
H. Alcohol/Drug Problems	.07	.67	.09	.46	.68
I. Emotional/Personal	.08	.02	.04	.91	.83
J. Attitude/Orientation	-.14	.19	.84	-.05	.77
Percent of Variance	32.8	11.7	11.0	10.0	

Predictive Validity. SRI subcomponent and total scores were examined for predictive criterion validity in relation to institutional performance measures (see Table 11). Significant correlations controlling for number of days in custody were found between SRI total scores and prison misconducts and assaults.

Table 11

Partial Correlations Between SRI Subcomponents and Total Score and Inprogram Performance Measures (Controlling for Days Inprogram)

Subcomponent	Performance Measures		
	Misconducts (N=99)	Assaults (N=99)	Halfway House Failure (N=23)
A. Criminal History	.20*	.20*	-.10
B. Education/Employment	.12	.06	.48*
C. Financial	.00	-.03	.22
D. Family/Marital	.07	.05	.20
E. Accommodation	.00	.00	.07
F. Leisure/Recreation	-.09	-.07	-.06
G. Companions	.14	.15	-.11
H. Alcohol/Drug Problems	.18*	.21*	.25
I. Emotional/Personal	-.01	.02	.20
J. Attitude/Orientation	.19*	.12	-.14
Total Scores	.18*	.17*	.27

Note. * $p < .05$

The predictive criterion validities of the LSI subcomponent and total scores for institutional performance measures are shown in Table 12. For LSI total scores, significant relationships were found with prison misconducts, assaults, and halfway house failure.

Table 12

Partial Correlations Between LSI Subcomponents and Total Score and Inprogram Performance Measures (Controlling for Days Inprogram)

Subcomponent	Performance Measure		
	Misconducts (N=99)	Assaults (N=99)	Halfway House Failure (N=23)
A. Criminal History	.10*	.10	.53**
B. Education/Employment	.19*	.15	.56**
C. Financial	.00	-.02	.25
D. Family/Marital	.12	.13	.32
E. Accommodation	.17*	.10	.01
F. Leisure/Recreation	.13	.13	.40*
G. Companions	.18*	.21*	.21
H. Alcohol/Drug Problems	.10	.14*	.18
I. Emotional/Personal	.03	.06	-.13
J. Attitude/Orientation	-.05	-.06	-.19
Total Scores	.17*	.19*	.44*

Note. * $p < .05$; ** $p < .01$.

Table 13 presents significant correlations between SRI subcomponent and total scores and two measures of post-release recidivism. For SRI total scores, significant correlations were found associated with parole violation ($r = .29$) and reincarceration ($r = .26$) upon follow-up.

Table 13

Pearson Correlations Between SRI Subcomponents and Total Score and Post-release Recidivism Measures

Subcomponent	Recidivism Measure	
	Parole Violation (N=39)	Reincarceration (N=97)
A. Criminal History	.33*	.26**
B. Education/Employment	.16	.16
C. Financial	-.18	-.06
D. Family/Marital	-.04	.13
E. Accommodation	.36*	.27**
F. Leisure/Recreation	.16	.12
G. Companions	.33*	.19*
H. Alcohol/Drug Problems	.03	.13
I. Emotional/Personal	-.05	-.03
J. Attitude/Orientation	.47***	.29**
Total Scores	.29*	.26**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

The relationship between LSI subcomponent and total scores and two measures of post-release recidivism are summarized in Table 14. LSI total scores were found correlated with parole violation ($r = .31$) and reincarceration ($r = .29$).

Table 14

Pearson Correlations Between LSI Subcomponents and Total Score and Post-release Recidivism Measures

Subcomponent	Recidivism Measure	
	Parole Violation (N=39)	Reincarceration (N=97)
A. Criminal History	.16	.20*
B. Education/Employment	.22	.25**
C. Financial	.16	.18*
D. Family/Marital	.19	.26**
E. Accommodation	-.20	-.01
F. Leisure/Recreation	.15	.14
G. Companions	.57***	.21*
H. Alcohol/Drug Problems	.16	.06
I. Emotional/Personal	-.15	-.04
J. Attitude/Orientation	.11	.12
Total Scores	.31*	.29**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Contingency table analyses were conducted on the SRI and LSI by means of two-by-two prediction tables. The medians of SRI and LSI scores were used as an objective method of equalizing selection ratios. This resulted in a low SRI risk group with scores of 23 or less and a low LSI risk group with scores of 24 or less. Relative

Improvements Over Chance (RIOC), a predictive accuracy statistic developed by Loeber and Dishion (1983), are presented for both the SRI and LSI.

Table 15 presents predictive accuracy statistics for the SRI and LSI in relation to three measures of institutional performance. With selection ratios of approximately 50%, only the SRI was significantly related to misconducts ($x2 = 11.6$, $p < .001$). However, both the SRI and LSI were found to be associated with assaults ($x2 = 6.26$, $p < .05$; $x2 = 8.51$, $p < .01$). The RIOCs in the prediction of misconducts were 44.5% and 22.7% for the SRI and LSI, respectively. The corresponding RIOCs in the prediction of assaults were 57.4% and 67.2% for the SRI and LSI, respectively. With respect to halfway house failure, the aforementioned medians resulted in unequal selection ratios for the SRI and LSI. This was partly due to a diversion study being conducted simultaneously, whereby offenders were diverted to halfway houses on the basis of LSI scores less than or equal to 14 (Bonta & Motiuk, 1987a). Subsequently, neither the SRI or LSI were significantly related to halfway house failure.

The predictive accuracy statistics for the SRI and LSI in relation to two measures of post-release recidivism are tabled (see Table 16). With a selection ratio of approximately 33%, both the SRI and LSI were not significantly related to parole violation. With a selection ratio of approximately 50%, both the SRI and LSI were found to be significantly related to reincarceration ($x2 = 4.91$, $p < .05$; $x2 = 6.24$, $p < .05$). The RIOCs in the prediction of reincarceration were 34.3% and 38.7% for the SRI and LSI, respectively.

Table 15

Predictive Accuracy Statistics for the SRI and LSI:

Institutional Performance

Criterion/ Instrument	SR	Valid Positives		False Positives		Valid Negatives		False Negatives		C	CIR	RIOC
	%	N	%	N	%	N	%	N	%	%	%	%
Misconducts/ (N=99; BR=40.4)												
SRI	50.5	29	29.3	21	21.2	38	38.4	11	11.1	67.7	72.5	44.5
LSI	51.5	25	25.2	26	26.3	33	33.3	15	15.2	58.6	62.5	22.7
Assaults/ (N=99; BR=19.2)												
SRI	50.5	15	15.1	35	35.4	45	45.5	4	4.0	60.6	78.9	57.4
LSI	51.5	16	16.1	35	35.4	45	45.5	3	3.0	61.2	84.2	67.2
Halfway House Failure/ (N=23; BR=13.0)												
SRI	8.7	1	4.3	1	4.3	19	82.6	2	8.7	87.0	33.3	42.8
LSI	4.3	1	4.3	0	0.0	20	87.0	2	8.7	91.3	33.3	100.0

Notes.
BR = Base Rate; overall misconduct, assault, and halfway house failure rates
SR = Selection Rate; predicted misconduct, assault, and failure rates
C = Correct; proportion of valid positives and valid negatives
CIR = Correctly Identified Recidivists
RIOC = Relative Improvement Over Chance; (Loeber & Dishion, 1983)
"Positives" are those predicted to either commit a misconduct, assault, or fail in their halfway house placements.
SRI = Self-report Inventory
LSI = Level of Supervision Inventory

Table 16

Predictive Accuracy Statistics for the SRI and LSI:

Post-release Recidivism

Criterion/ Instrument	SR	Valid Positives		False Positives		Valid Negatives		False Negatives		C	CIR	RIOC
	%	N	%	N	%	N	%	N	%	%	%	%
Parole Violation/ (N=39; BR=28.2)												
SRI	28.2	5	12.8	6	15.4	22	56.4	6	15.4	69.2	45.5	24.0
LSI	33.3	6	15.4	7	18.0	21	53.8	5	12.8	69.2	54.5	31.8
Reincarceration/ (N=97; BR=44.3)												
SRI	49.5	22	22.7	26	26.8	38	39.2	11	11.3	61.9	66.7	34.3
LSI	50.5	23	23.7	26	26.8	38	39.2	10	10.3	52.3	53.5	38.7

Notes.
BR = Base Rate; overall parole violation and reincarceration rates
SR = Selection Rate; predicted violation and reincarceration rates
C = Correct; proportion of valid positives and valid negatives
CIR = Correctly Identified Recidivists
RIOC = Relative Improvement Over Chance; (Loeber & Dishion, 1983)
"Positives" are those predicted to either violate their parole and/or be reincarcerated within one year following release from their present sentence
SRI = Self-report Inventory
LSI = Level of Supervision Inventory

Incremental Validity. The incremental predictive criterion validities of the SRI and LSI were also explored through multiple regression analyses, with prison misconducts, assaults, halfway house outcome, parole violations, and reincarceration as separate criterion

variables. In turn, either SRI or LSI scores were allowed to enter first, and the incremental contribution of the other instrument was established (see Table 17). Only for halfway house outcome did the LSI demonstrate any incremental validity relative to the SRI. In terms of increases in explained variance, the incremental validities were 18.6% ($p < .05$) for the LSI and 2.7% (ns) for the SRI.

A shortcoming of the aforementioned forward selection method is that predictors entered first into the regression equation are retained regardless of their usefulness. Stepwise multiple regression analyses were conducted in order to determine whether the SRI or LSI was a better predictor at an earlier stage in the equation. Although the LSI yielded all the available variance for assaults ($MR = .27$, $F(1,97) = 7.43$, $p < .01$), halfway house outcome ($MR = .46$, $F(1,21) = 5.71$, $p < .05$), and reincarceration ($MR = .29$, $F(1,95) = 8.43$, $p < .01$), the SRI accounted for all the available variance with respect to institutional misconduct ($MR = .30$, $F(1,97) = 9.75$, $p < .01$). Neither the SRI or LSI were associated with increases in explained variance.

The overall canonical correlation between the two predictors and the criterion measures of prison misconducts and reincarceration was .45. The weights were as follows: .54 for the SRI and .52 for the LSI.

DISCUSSION

The present study demonstrated the relative efficacy of utilizing a paper-and-pencil version of an interview-based classification instrument. A paper-and-pencil Self-report Inventory was constructed and then validated against the interview-based Level of Supervision Inventory. The total scores of both instruments were found to be highly correlated. This finding was not surprising given that both instruments shared the same method of self-report.

Psychometric analyses revealed acceptable internal consistency and inter-rater reliability estimates for the SRI. Furthermore, the SRI showed construct validity as demonstrated by adequate convergent and factorial validity estimates. Moreover, the SRI paper-and-pencil assessments were among the strongest predictors of institutional performance and post-release recidivism. Finally, incremental validity estimates demonstrated a significant improvement in the predictive efficiency of the SRI with respect to prison misconducts.

The degree to which the subcomponents in the SRI were found to intercorrelate was .76. Although this is a modest internal consistency estimate, it was somewhat higher than that found for the LSI (.72). The decrease in reliability estimates from the paper-and-pencil SRI to the interview-based LSI suggests a narrower sampling of content for the LSI. However, the differences may likely be due to random fluctuation.

Megargee (1977) noted that a classification instrument should be reliable in the sense that different raters obtain similar ratings for

an offender. Interestingly, the paper-and-pencil SRI achieved inter-rater reliability estimates (i.e., 90%) comparable to the MMPI-based system. Meyer and Megargee (1977) reported an overall 87% agreement in MMPI-based classification ratings which was considered adequate.

Another criterion stressed by Megargee (1977) for evaluating a classification instrument is validity. Construct validity was established between the SRI subcomponents and their LSI counterparts with the exception of Attitude/Orientation. Paper-and-pencil SRI subcomponents also shared substantial variance with alternate paper-and-pencil measures for Education/Employment (B), Family/Marital (D), Companions (G), Alcohol/Drug (H), Emotional/Personal (I), Attitude/ Orientation (J). These findings are consistent with those reported by Bonta and Motiuk (1985), who similarly found construct validity for interview-derived LSI subcomponents. However, unlike Bonta and Motiuk (1985), construct validity for Attitude/ Orientation (J) was established suggesting that the SRI may provide an improvement over the interview-based LSI in the assessment of criminal sentiments.

Of special note in the results was the high correlation (r = .80) between the paper-and pencil Criminal History subcomponent (A) of the SRI and its interview-based LSI counterpart. In this study, the interviewers had access to official records such as the Royal Canadian Mounted Police - Finger Print Service, Pre-Sentence Reports, Warrants of Committal, and prior Classification Records. These documents provide objective measures of an offender's past and present criminal records regarding arrests and convictions. During the completion of

LSI, classification officers referred to these official data sources, hence the Criminal History subcomponent of the LSI is also reflective of official records. The high correlation between the SRI and LSI therefore, lends further support to the contention that self-report paper-and-pencil methods of measuring crime and delinquency can be valid.

Another construct validity finding of the SRI was its statistical cross-structure with other measures. Although paper-and-pencil SRI subcomponents shared substantial variance with alternate paper-and-pencil measures, it also tapped different behavioral dimensions than the interview-based LSI. For example, variance in the Drug/Alcohol Problems (H) subcomponent of both the SRI and LSI was accounted for by the drinking situation of unpleasant emotion. However, a proportion of the variance in the Drug/Alcohol Problems (H) subcomponent of the SRI was also accounted for by the drinking situation of urges/temptation to drink.

Factor analysis revealed that there were two reasonably distinct domains captured by the paper-and-pencil SRI. The first factor described ties to crime (e.g., high loading on Companions and Alcohol/Drug) and the second factor characterized emotional instability (e.g. high loading on Emotional/Personal). A factor analysis of the interview-based LSI revealed four separate domains referred to as ties to convention (e.g. Education/Employment), ties to crime (e.g. Companions), criminal sentiments (e.g. Attitude/Orientation), and emotional instability (e.g. Emotional/Personal). Both methods of

offender assessment yielded some overlap in the domains they captured, however the interview-based LSI appeared to have tapped two additional factors. It would appear that self-reports of variables correlated with criminal activity draw upon fewer factors then when the assessment is more objective and completed by a classification officer.

Gendreau, Irvine, and Knight (1973) have pointed to the validity of the assessment process itself as an important concern, especially insofar as the outcome could possibly affect an offender's status within the criminal justice system. Although offenders in this study were not affected by SRI scores, their responses were checked against an outside criterion, namely the validity scales of the MMPI (i.e., "L", "F", and "K"). This objective validation of the paper-and-pencil SRI against an established personality instrument resulted in correlation coefficients in the expected direction. As offenders' SRI total scores increased, they lied less, rated themselves as being more maladjusted, and reported less social desirability. Interestingly, the paper-and-pencil SRI yielded correlations of greater magnitude than the interview-based LSI. Perhaps high risk incarcerated offenders who volunteer in a classification research program view themselves as having little to gain in distorting their responses. Moreover, the paper-and-pencil format of the SRI affords ample opportunity for external validity checks. The LSI, however, rests heavily on the verbal responses of offenders and may be subject to distortion when tallied by the interviewer.

The aforementioned findings are further supported by examining the relationship between SRI and LSI subcomponents and the MMPI validity scales. Whereas seven of the SRI subcomponents (i.e., Criminal History (A), Education/Employment (B), Accommodation (E), Leisure/Recreation (F), Companions (G), Alcohol/Drug Problems (H), Attitude/Orientation (J)) were significantly correlated with the lie scale, only four of the LSI subcomponents (i.e., Criminal History (A), Education/ Employment (B), Leisure/Recreation (f), Companions (G)) were significantly correlated with the "L" scale in the expected direction for validity. A similar pattern of results was found with the other MMPI validity scales suggesting that the SRI has considerable validity with respect to outside criterion.

Another important finding was that the SRI demonstrated predictive criterion validity with respect to institutional performance and post-release recidivism. Although the SRI and LSI shared significant correlations for both misconducts and assaults, only the LSI was significantly related to halfway house outcome. This later result, however, is biased by the fact that offenders were diverted to halfway houses on the basis of their LSI scores (Bonta & Motiuk, 1987a). Similar correlations were obtained for both the SRI and LSI with respect to parole violations and reincarceration upon follow-up. It would appear that the SRI instrument may be used to forecast important correctional outcomes. However, before adopting a particular assessment device one should also consider predictive accuracy. In comparing the SRI and LSI in terms of relative

improvement over chance (RIOC), the SRI was not as accurate or efficient as the LSI except for institutional misconduct. This finding is consistent with that of Motiuk, Bonta, and Andrews (1986) who similarly found the interview-based LSI to perform considerably better than the paper-and-pencil MMPI-based system.

Although the SRI evidenced predictive validity, the data was not convincing enough to support adoption for offender classification. The SRI was validated on a relatively small sample, not all the subcomponents were evaluated for convergent validity, and only literate inmates participated in the study. Despite these limitations, available data do encourage cross-validation attempts with more representative offender populations and more comprehensive assessment procedures.

Finally, another validity indicator of the paper-and-pencil SRI may be determined by it's unique contribution to prediction (Sechrest, 1963). Again only for halfway house outcome did the LSI demonstrate any incremental validity relative to the SRI. However, as mentioned previously, this finding is biased due to pre-selection on the basis of LSI scores. In any event, neither the SRI or LSI were associated with significant increases in explained variance on a variety of correctional outcomes. This is not surprising when one considers shared self-report method variance used to obtain information. Therefore, the addition of an interview-based LSI to a paper-and-pencil SRI (or vice versa) does not lead to a substantial increase in predictive accuracy.

In conclusion, the results of this study provide promise for combining self-report evaluations with the more traditional forms of offender risk/need assessments. As noted in the review of literature, offender classification has often adopted one method of assessment at the exclusion of another. Yet, these methods are not necessarily incompatible. Differing methods may yield similar risk assessments (both the LSI and SRI predicted rule violating behavior) and also assess similar needs. The advantage of adding a different assessment method is that it may identify additional needs. Recall that the LSI yielded two additional factors not measured by the SRI. This idea of multimethod-multitrait assessment is certainly not new (Cronbach & Meehl, 1955), however, it is only recently that researchers in the field of corrections have been using this approach and finding improved predictions of criminal behavior (Andrews, Wormith, & Kiessling, 1985).

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Appendix A:

Level of Supervision Inventory (LSI)-VI

CRIMINAL HISTORY

___ 1 Any prior convictions, adult/number ( )

___ 2 Two or more prior convictions

___ 3 Three or more prior convictions

___ 4 Three or more present offences/number ( )

___ 5 Arrested under age 16

___ 6 Ever incarcerated upon conviction

___ 7 Escape history - institution

___ 8 Ever punished for institutional misconduct/number ( )

___ 9 Charge laid or parole suspended during prior community supervision

___ 10 Official record of assault/violence

EDUCATION/EMPLOYMENT

When in labour market:

___ 11 Currently unemployed

___ 12 Frequently unemployed

___ 13 Never employed for full year

___ 14 Ever fired

School or when in school:

___ 15 Less than grade 10

___ 16 Less than grade 12

___ 17 Suspended or expelled at least once

When homemaker, pensioner: #18 only
When school, work, unemployed: #18, #19,#20 apply.

___ 18 Participation/Performance ( )

___ 19 Peer interactions ( )

___ 20 Authority interactions ( )

FINANCIAL

___ 21 Problems ( )

___ 22 Reliance upon social assistance

FAMILY/MARITAL

___ 23 Dissatisfaction with marital or equivalent situation ( )

___ 24 Nonrewarding, parental ( )

___ 25 Nonrewarding, other relatives ( )

___ 26 Criminal - Family/Spouse

ACCOMMODATION

___ 27 Unsatisfactory ( )

___ 28 3 or more address changes last year/number ( )

___ 29 High crime neighbourhood

LEISURE/RECREATION

___ 30 No recent participation in an organized activity

___ 31 Could make better use of time ( )

COMPANIONS

___ 32 A social isolate

___ 33 Some criminal acquaintances

___ 34 Some criminal friends

___ 35 Few anti-criminal acquaintances

___ 36 Few anti-criminal friends

ALCOHOL/DRUG PROBLEMS

___ 37 Alcohol problem, ever

___ 38 Drug problem, ever

___ 39 Alcohol problem, currently ( )

___ 40 Drug problem, currently ( )
Specify drug_____
_____
_____

___ 41 Law violations

___ 42 Marital/Family

___ 43 School/Work

___ 44 Medical

___ 45 Other clinical indicators - Specify:
_____

EMOTIONAL/PERSONAL

___ 46 Moderate interference

___ 47 Severe interference

___ 48 Psychiatric treatment, past

___ 49 Psychiatric treatment, current

___ 50 Psychological assessment indicated
Area_____

ATTITUDE/ORIENTATION

___ 51 Supportive of crime

___ 52 Unfavorable toward convention

___ 53 Poor, toward sentence

___ 54 Poor, toward supervision

*TOTAL LSI SCORE _____
_____

Appendix B:

The Self-report Inventory (SRI)

1. How many times have you been convicted of a criminal offence since your 16th birthday (do not count this present conviction)?

   _____

2. How many offences are you convicted of at present? _____

3. Have you ever been arrested as a juvenile (under age 16)?
   yes _____ no _____

4. Have you ever served a jail sentence before (do not count this present sentence)? yes _____ no _____

5. Have you ever escaped from an institution? yes _____ no _____

6. How many times have you been punished for an institutional misconduct? _____

7. Have you ever been arrested while on probation or parole?
   yes _____ no _____

8. Has your parole ever been suspended or revoked? yes _____ no _____

9. Have you ever been convicted of <u>any</u> of the following offences: assault, attempted murder, rape, armed robbery, robbery, manslaughter, indecent assault? yes _____ no _____

10. During the past year, how many months were you employed? _____

11. How many months or years was your longest job? _____

12. Have you ever been fired from a job? yes _____ no _____

13. If you were <u>working just before</u> you came into the Detention Centre, complete the following "true" or "false" questions: (If you were unemployed or in school, go to question #14)

    a) I hate my job because it is boring/ it gives me no satisfaction. T F

    b) I see my job as only a way of making money and I'd leave if something else came along. T F

    c) Whenever I feel like having some time off, I simply call in sick at work. T F

    d) I get along well with my co-workers. T F

    e) I usually spend my coffee breaks or have lunch with my co-workers. T F

    f) I find my co-workers are friendly, cooperative and always willing to help each other out. T F

g) I find my boss unfair and I often refuse to follow his/her orders. T F

h) I would never speak to my boss about personal problems. T F

i) I spend very little time with my boss after work. T F

14. What is your last grade completed? _____

15. Have you ever been suspended or expelled from school?
yes _____ no _____

16. If you were going to <u>school just before</u> you came into the Detention Centre, complete the following "true" or "false" questions:
(If you were working, then you have already completed section #13, therefore go to #17; if you were unemployed, go to #17)

a) I skip classes once in a while. T F

b) I almost always finish my homework on time. T F

c) I spend a lot of time working on my school grades. T F

d) I get along well with my classmates. T F

e) My best friends go to my school. T F

f) I either argue a lot with my classmates or just ignore them. T F

g) I usually avoid talking to the teachers, either because I don't like them or find them boring. T F

h) Most of my teachers seem to dislike me. T F

i) I have been in trouble at school for which I was sent to the principal's office. T F

17. I have an excellent credit rating and no problems repaying my loans. T F

18. I owe some money to people (bank, friends, parents), but I will be able to pay it soon. T F

19. I am in debt "up to my ears" and should probably declare personal bankruptcy. T F

20. I have been on Welfare or Unemployment Insurance. T F

21. Do you have a wife or girlfriend right now? yes _____ no _____

22. If you have a wife or girlfriend, answer the following "true" or "false" questions:

    a) My wife/girlfriend and I have a very close and positive relationship. T F

    b) We have very few arguments. T F

    c) We have complete trust and faith in each other. T F

23. Both my parents are deceased? yes _____ no _____

24. I have not seen my parents in a long time and I have no plans to see them? yes _____ no _____

25. If you have parents or foster parents, answer the following "true" or "false" questions:

    a) I find it easy to talk to my parents. T F

    b) I see, or write to, my parents regularly. T F

    c) I think it is important to try and do well for your parents. T F

    d) My parents are very supportive and will stand by me whenever I need them. T F

26. I like most of my relatives (brothers, sisters, uncles, aunts, cousins, grandparents). T F

27. I see, or write to, my relatives regularly. T F

28. I can count on most of my relatives for their help. T F

29. No one in my family (parents, wife, brothers, or other relatives) has a criminal record. T F

30. In the past year, how many times have you moved (do not count Ottawa-Carleton Detention Centre or any other correctional institution)? _____

31. I know a lot of people with criminal records who live in my neighborhood. T F

32. I have no fixed address. T F

33. I don't like the place where I live. T F

34. I can't wait to move from my place. T F

35. During the past year, I have been an active member of one of the following: an union, service clubs, sports clubs and teams, church. T F

36. During my spare time, I enjoy doing sports, watching T.V. or listening to music at home. T F

37. I spend a lot of time with my hobbies (e.g. stamp collecting, model building, weightlifting) T F

38. During my spare time, I usually go out to a bar or to a friend's place, to drink and/or get high. T F

39. During my spare time, I spend a lot of time in criminal activity or planning a job. T F

40. I am somewhat of a loner. T F

41. Not counting relatives, how many people that you know have no criminal record or have not been involved in crime? _____

42. Not counting relatives, how many of your close friends have no criminal record or have not been involved in crime? _____

43. Not counting relatives, how many people that you know have a criminal record or have been involved in crime?

_____

44. Not counting relatives, how many of your close friends have a criminal record or have been involved in crime?

_____

45. Before I came into the Detention Centre, I drank (circle one of the following):

Never Sometimes Most of the time All the time

46. When I drink, I tend to get in trouble with the law. T F

47. My drinking has caused arguments with my wife or parents. T F

48. I have lost a job because of my drinking. T F

49. I have been sent home from school or work because I drank too much. T F

50. My doctor has told me to stop drinking. T F

51. Sometimes I have had such a hangover that I phoned in sick at work. T F

52. I have passed out from drinking too much. T F

53. In the morning after a drinking binge, my hands shake. T F

54. Once I have one drink, it is hard for me to stop. T F

55. Although I have quit drinking now, I used to drink heavily. (Answer only if you have quit drinking) T F

56. List the drugs (non-prescribed) that you have taken in the last year: _____
_____

57. How many times in the month before coming into jail, did you smoke hash or pot? _____

58. How many times in the month before coming into jail, did you do any other street drugs? _____

59. When I'm high, I tend to get in trouble with the law. T F

60. My drug-taking has caused arguments with my wife or parents. T F

61. I have lost a job because of my drug-taking. T F

62. I have been sent home from school or work because I did too many drugs. T F

63. My doctor told me to stop taking drugs. T F

64. I have overdosed from taking too many drugs. T F

65. Once I have smoked one joint, popped a pill, or done a line, it is hard for me to stop. T F

66. I used to take a lot of drugs, but I don't anymore. (Answer only if you have quit taking drugs) T F

67. Have you ever been ordered by a judge to undergo a psychological assessment? yes _____ no _____

68. Have you ever been to a psychologist or a psychiatrist?
_____

69. Have you ever been committed to a psychiatric hospital, such as the Royal Ottawa Hospital (ROH)? yes _____ no _____

70. Have you ever attempted suicide? yes _____ no _____

71. Are you presently receiving psychological or psychiatric treatment (e.g. individual counselling or relaxation training)? yes _____ no _____

72. Do you think that you should be seen by a psychologist or psychiatrist? yes _____ no _____

73. I think that I had a good reason for some of my crimes. T F

74. All laws should be strictly obeyed. T F

75. Our society would be better off if there were moch fewer laws. T F

76. Keeping a steady job or going to school is not that important for me. T F

77. I think that the judge gave me too long a sentence. T F

78. I find it hard to stick to the rules given by my probation officer or the guards. T F

Appendix C:

Classification Research Program

This is to note that the classification research program has been explained to me. I understand that I will be asked to complete some confidential research forms and I agree to these conditions. I also recognize that participating in the research is not a condition of my sentence and that my participation in the research project is in addition to the requirements of the Ministry's rules and regulations.

_____

Signature of Inmate

_____

Signature of Research Staff

Date:_____