Psychometric prediction of recidivism: Utility of the Risk Needs Inventory

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Psychometric Prediction of Recidivism: Utility of the Risk Needs Inventory*

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Abstract

The efficacy of psychometric measures of recidivism is an important issue. Accordingly, the present study examines: {1) the predictive (criterion-related) validity of the Risk Needs Inventory (RNI); {2) whether RNI scores alone are better predictors than are scores moderated by Community Corrections Officers (professional override principle); and {3) whether inclusion of age and marital status as independent variables improves predictive validity. It was found that RNI total and risk category scores for both the unadjusted and override conditions significantly predicted both number and severity of re-offences for in-program and total recidivism measures. Age predicted number and severity of re-offences (inversely), but generally did not add significantly to the variance accounted for by the RNI items. While the RNI appears to have some utility, the prediction of recidivism remains a complex psychometric issue. However, it is likely that use of the RNI provides a more structured/objective assessment of recidivism risk. Although the variance accounted for is small (8-15%), nonetheless, use of the RNI results in correct classification of the majority of offenders. In addition, use of professional override would appear to be essential in order to differentiate between the reoffending behaviours of medium and high risk groups.
The effective management of criminal offenders aims to reduce recidivism. According to Andrews, Bonta and Hoge (1990), four case management principles relate to achieving these reductions: (1) The risk principle advocates that most attention be given to offenders with greater recidivism risk. Andrews et al (1990) concluded that allocating intensive service to low risk cases increases the overall number of re-offences, while Andrews, Kiessling, Robinson and Mickus (1986) reported that high risk probationers allocated higher supervision exhibited significantly less recidivism than those assigned regular supervision. (2) The needs principle suggests that recidivism diminishes where the services offered to offenders are targeted at their particular needs. Andrews et al (1990) claimed that needs factors are dynamic attributes of offenders which initially indicate risk, but once changed, are associated with reduced recidivism. (3) The responsivity principle asserts that reductions in recidivism are most likely when services are matched to offenders' learning styles and abilities. (4) The professional override principle says that having considered risk, need and responsivity, decisions still have to be made where there are mitigating circumstances for certain offenders.

One important question is the efficacy of the psychometric prediction of recidivism (ie. using psychological rating scales to provide a quantitative index of the likelihood of reoffending). In this regard, the present study examines the utility of the Risk Needs Inventory or RNI (Queensland Probation and Parole Service 1986) as compared with the professional override principle where Community Corrections Officers override the psychometric scores in making decisions concerning offender management. The RNI was derived from the (Canadian) Level of Supervision Inventory or LSI (see Andrews 1982; Garvey, Perkins & Bridgman 1986). The RNI is a 65-item, yes/no questionnaire completed by the Community Corrections Officer
assigned to each case (see Appendix A). The measure provides a total score and 12 subscale scores: Criminal History (10 items), Education/Employment (7 items), Financial Situation (2 items), Family/Marital Situation (4 items), Accommodation (3 items), Social Interaction (9 items), Addiction Problems (10 items), Health (6 items), Driving (4 items), Attitudes (4 items), Motivation (1 item), and Extraordinary Factors (5 items). The total score places the offender into a risk category (low= 0-9, medium= 10-19, and high ≥ 20), used to assess the amount of supervision assigned to the offender.

Efficacy of the predecessor LSI instrument is well documented. Andrews (1982) reported that the LSI significantly predicted prison officer judgements of appropriate levels of supervision; probation outcomes; in-program recidivism; multiple reconvictions; incarceration; and officially undetected criminal activity. Pretreatment LSI scores have significantly predicted correctional outcomes for offenders (Andrews et al., 1986). Bonta and Motiuk (1985) found significant differences in recidivism outcomes between LSI designated risk groups. Bonta and Motiuk (1987) also reported that the LSI was a significant predictor of misconducts, re-offence and successful outcome for offenders released to correctional halfway houses. In addition, they reported that the LSI significantly correlated with the number of new offences and severity of re-offence during probation. Finally, Bonta and Motiuk (1990) reported that low scoring offenders had significantly fewer parole violations and lower re-incarceration rates after one year.

In predicting recidivism, the LSI accounted for 21.4% of the variance in reconviction (Andrews et al 1986). It correlated .40 to .47 with re-offence and reconviction (Andrews 1982; Motiuk, Bonta & Andrews 1986), and .37 with severity of re-offence (Bonta & Motiuk 1987). These findings compare favourably with
regression models using a number of demographic, criminal history and prison or probation record variables tested by Clarke and Crum (1985) which accounted for approximately 10% of the variance in reoffending. Andrews (1982) reported inter-rater reliabilities ranging from .88 to .94, short-term test-retest reliabilities from .95 to .99, and longer-term retest (stability) over two months or more was found to be .80 (compare Fernandez, Nygren & Thorn 1991).

Aside from being supported by studies into the LSI, the RNI also includes a number of variables commonly accepted as good predictors of recidivism in their own right. Thus, criminal history (including number of prior arrests) has been well-documented as a predictive variable (NSW Department of Corrective Services 1982; Wright, Clear & Dickson 1984; Hoffman & Beck 1985; Hall 1988; Furby, Blackshaw & Weinrott 1989). Likewise, socioeconomic status and employment variables have been supported as predictors of recidivism by Roundtree, Edwards and Parker (1984), Biles (1988), and Broadhurst, Maller, Maller and Duffecy (1988). In addition, family status, addiction problems, and criminal associations have all been verified by Biles (1988) as important predictors of recidivism.

There has been a small number of studies into the psychometric properties of the RNI instrument -such as its predictive validity (an index of the extent to which the observed scores make accurate predictions). For instance, Garvey, Perkins and Bridgman (1986) reported a 70% concordance of RNI assessed minimum and maximum risk categories with probation/parole officers’ assessments, and a 60% concordance for the medium risk category. Duggan, Evans and Stewart (1987) compared the RNI assessed risk and that assigned by probation/parole officers. The RNI validly predicted risk and offered other benefits (a standardised approach; increased accountability and objectivity). However, neither study tested the
concordance of any form of recidivism measure with assessed risk. The RNI contains a scale pertaining to driving attitudes and behaviours not included in the predecessor LSI instrument. This scale was included in the RNI because an offender's driving attitudes, previous suspension or disqualification of a licence, or not having bothered to obtain a licence, were considered to be valid indicators of risk of reoffending (Garvey et al 1986). For example, Beerman, Smith and Hall (1988) reported that drink drivers are more likely to have a past criminal record, and to drive on a suspended or revoked licence. However, no documented reason could be found for the non-inclusion of the LSI leisure/recreation subscale in the RNI instrument. Indeed, Bonta and Motiuk (1985) reported that this subscale was one of the better predictors of subsequent criminal offending and concomitant reincarnation.

The present study also sought to find ways in which prediction of recidivism using the RNI might be enhanced. Other possible predictors of recidivism were examined: present age (Hall 1988), marital status (Broadhurst et al 1988), and nature of original offence committed (Biles 1988). With respect to age, Lichtman and Smock (1981), Roundtree et al (1984), Beerman et al (1988), and Barbaree and Marshall (1988) all suggested that age was not a significant predictor of recidivism. However, the NSW Department of Corrective Services (1982) noted that younger offenders were at greater risk of reoffending. Moreover, Clarke and Crum (1985), as well as Hall (1988) reported that age is inversely related to past arrests. Richards (1988) noted that in Australia 80% of burglary and serious assaults are committed by under 25 year olds, while Broadhurst et al (1988), and Biles (1988) also noted that recidivism decreases with increasing age. In regard to marital status, Wells-Parker, Miles and Spencer (1983) reported no significant difference in marital status of recidivist drink drivers, while Broadhurst et al (1988), and Clarke and Crum (1985) reported that
married offenders were less likely to reoffend (this possibility is examined empirically in the present study).

Finally, evidence was examined with respect to original offence and recidivism because Biles (1988) had reported that patterns of re-offence differed between prisoners convicted of different types of offence, with violent offenders committing more crimes than property offenders. The seriousness of the original offence and differences in recidivism of offenders grouped by original offence type are both important considerations. Consequently, two offence types were chosen: sexual and property offence.

Concerning sex offenders, Broadhurst et al (1988) claimed that rapists were less likely to reoffend than other offenders. The NSW Department of Corrective Services (1982) and the Texas Board of Pardons and Paroles (1986) reported that sex offenders had among the lowest rates of recidivism. However, Hall (1988) found that sexual offences against adults was a robust predictor of recidivism, and Furby et al (1989) concluded that there were conflicting results as to whether sex offenders have a higher rate of recidivism than other offenders. As for property offences, Lichtman and Smock (1981), the NSW Department of Corrective Services, the Texas Board of Pardons and Paroles, and Petersilla, Turner and Peterson (1986) all reported that these offenders have high rates of recidivism.

Having dealt with the risk principle, it is germane to examine the override principle of offender management. Andrews (1982), and Andrews et al (1990) argued that professional judgements should override established criteria for classifying offenders. This is also highlighted in the guidelines that accompany instruments such as the RNI, and the Victorian CBC Offender Assessment Form (Office of Corrections...
Victoria 1987). However, neither study assessed whether professional judgments are better predictors of recidivism than the instruments alone.

In the present study, the psychometric adequacy of the RNI instrument was examined in relation to both its reliability (internal consistency of item composition within each of the separate scales) and its criterion-related predictive validity (for both the scale and total RNI scores). Also, it was anticipated that the various risk categories would significantly relate to recidivism outcome measures, predicting both the number and severity of re-offences.

The study also examined whether age of the offender added to the predictive capacity of the RNI instrument. In addition, differences in rates and severity of reoffending were compared among sex offenders, property offenders and other offenders. Severity of original offence and subsequent re-offence was also examined, to determine whether adding the original offence variable might improve the RNI's predictive capacity. Finally, the study tested the override principle by examining whether either the original RNI scores alone, or the scores adjusted using professional judgements of Community Corrections Officers, better predicted recidivism.

Method

Subjects

RNI scores were obtained from the case files of 281 Queensland offenders chosen at random. The number of males and females was in proportion to the total population of offenders (81% and 19% respectively) who first entered community corrections in 1987 (the earliest date from which the RNI had been in consistent use). Offenders who entered the system directly on probation or indirectly through parole were included to ensure diversity of sampling. A proportional number of offenders
was chosen from each office to avoid location sampling biases. First offenders were chosen to ensure that all recidivism events were included (Broadhurst et al. 1988). Mean age of offenders was 23.27 years (S.D. = 8.64). Some 173 offenders had been classified as low risk (62%), 76 as medium risk (27%), and 32 as high risk (11%), based on the RNI total scores obtained (0-9 low risk; 10-19 medium risk; ≥20 high risk). The present sample comprised only a small number of sex offenders (n = 14), but a relatively larger number of property offenders (n = 105).

**Procedure**

Two definitions of recidivism served as outcome measures. Total recidivism was defined as any subsequent offence for which a custodial or community correctional penalty was imposed. Technical breaches of parole/probation or minor offences that did not change the legal status of the offender were excluded from this measure. In-program recidivism was defined as any subsequent offence, including technical breaches that occurred during the initial community correctional sentence. Thus, the four outcome measures comprised the number of re-offences, and the highest severity of re-offence, for both total and in-program recidivism. Follow-up time was standardised at four years. These measures provided a more accurate assessment than simple categorising by reoffenders-nonreoffenders (Mande & English 1988). Severity of re-offence was scored using a well-established 6-point rating scale (see Appendix B). In addition, correlations of RNI scale scores with the four outcome measures were computed (Table 1), enabling a more detailed examination of the predictive validity of the RNI instrument.

Community Corrections Officers had two ways of exercising professional override of RNI scores. Either they provided sufficient information near an item to
indicate that it could be scored but did not do so, or alternatively, they noted a different total and category on the front of the RNI form where professional judgment is encouraged. Both the RNI total score and risk category, as well as the score and risk category allocated by Community Corrections Officers were entered into the analyses, along with age, and marital status.

In assessing predictive validity, the RNI scores and risk categories finally allocated by Community Corrections Officers (override total and risk categories) were entered as single predictors into multiple regression equations for each of the four outcomes. That is, each of the four defined outcome measures was entered as a dependent variable into a multiple regression equation containing all RNI items as independent variables. All RNI items (see Appendix A) were entered into the analysis in a single step, while age was entered in step two. The intention was to ascertain whether inclusion of the age variable added significantly to the predictive variance over that of the RNI instrument alone -was the variance associated with age as a separate predictor of recidivism already captured by the RNI items? Original offence was examined through correlations between original offence severity and subsequent number and severity of re-offence, and in terms of differences in the re-offence of sex offenders, property offenders and all other offenders. Discriminant validity of the override principle was examined for each of the four outcome variables using between-groups ANOVAs (across low, medium, and high risk groups) together with Tukey post-hoc comparison tests to ascertain which risk categories differed in recidivism. The different risk categories served as independent variables, while the four outcome measures were the dependent variables for both the multiple regression and ANOVA analyses.
Results and Discussion

Both total score and risk categories significantly predicted number of recidivism events and most severe re-offence, although the variance accounted for in these outcomes was small (only up to 15%). Thus, the RNI accounted for a similar proportion of variance as did the three demographic and criminal history models tested by Clarke and Crum (1985), although it was somewhat less than the predictive variance reported for the LSI (21.4%), (Andrews et al 1986). The difference in predictiveness of the RNI and LSI instruments may relate to the non-inclusion of the leisure/recreation subscale in the RNI, which Bonta and Motiuk (1985) had reported as being a significant predictor of recidivism.

The RNI scales labelled Criminal History, Education/Employment, Financial Situation, Social Interaction, and Driving predicted both number and severity of recidivism events (correlating significantly with all outcome measures), while the Attitudes, and Motivation (to reform) scales predicted shorter-term in-program recidivism only, and the Family/Marital Situation scale predicted longer-term total recidivism. The Health scale did not correlate significantly with any measure of recidivism, although it may be a good indicator of need. The Accommodation and Addiction Problems scales exhibited only a single significant correlation with in-program recidivism measures in each instance, suggesting the possible need for psychometric modification of these scales.

Pearson product-moment correlations between each of the RNI scales and the four outcome measures are shown in Table 1. Approximately half (52.3%) of the correlations were significant. The RNI scales labelled Criminal History, Education/Employment, Financial Situation, Social Interaction, and Driving, were all predictive of both total and in-program recidivism. In addition, the scales labelled
Attitudes, and Motivation, appeared to predict in-program recidivism, while Family/Marital Situation significantly predicted total recidivism.

Table 1
Correlations between RNI scales and number and severity of re-offence

<table>
<thead>
<tr>
<th>Scale</th>
<th>Alpha Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminal History</td>
<td>.74</td>
</tr>
<tr>
<td>Education/Employment</td>
<td>.58</td>
</tr>
<tr>
<td>Financial Situation</td>
<td>.47</td>
</tr>
<tr>
<td>Family/Marital Situation</td>
<td>.28</td>
</tr>
<tr>
<td>Accommodation</td>
<td>.35</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>.77</td>
</tr>
<tr>
<td>Addiction Problems</td>
<td>.70</td>
</tr>
<tr>
<td>Health</td>
<td>.66</td>
</tr>
<tr>
<td>Driving</td>
<td>.56</td>
</tr>
<tr>
<td>Attitude to Crime</td>
<td>.65</td>
</tr>
<tr>
<td>Motivation to Reform</td>
<td></td>
</tr>
</tbody>
</table>

With regard to the internal consistency of the various RNI scales, Cronbach alpha coefficients (indicating the extent to which items within each scale 'go together' or are interrelated) were computed, providing modest support for the internal item composition of most of the RNI scales. Specifically, the obtained alpha coefficients were: Criminal History (.74), Education/Employment (.58), Financial Situation (.47), Family/Marital Situation (.28), Accommodation (.35), Social Interaction (.77), Addiction Problems (.70), Health (.66), Driving (.56), Attitude to Crime (.65), Motivation to Reform (one item only). Thus, the scales labelled Criminal History, and Social Interaction both appear to exhibit somewhat narrow breadth of measurement (exhibiting moderately high levels of item homogeneity), while the Family/Marital Situation scale may have insufficient item cohesiveness (wherein the items comprising the scale are insufficiently related to each other).

Ideally, item-homogenity coefficients should fall within the moderate range (.3 to .7) to ensure that scales are broad, valid measures (Boyle 1991; Boyle, Stankov & Cattell 1995). Consequently, the Criminal History and Social Interaction scales may contain some redundant items, while the Family/Marital Situation scale appears to lack
internal consistency, and may not measure a single dimension (compare Clark & Watson 1995; Cortina 1993).

Overall, there was a 40.2% total recidivism rate (including a 30.6% in-program recidivism rate). In regard to the ANOVA results, override total and risk category scores were all significant predictors ($p < .0001$) of all four outcome measures described above, as were the original RNI total scores and risk categories (all $p ( .0001)$, with predictive variance estimates ranging from 25% to 39% (median = 31%) for the override scores, and from 21% to 36% (median= 30%) for the unadjusted RNI total scores. Tukey comparison tests (computed because the significant between-groups main effects involved three different risk groups) revealed that only the low risk group differed from the medium and high risk groups on both number and severity of re-offences, in regard to either the total or in-program outcome measures of recidivism. Medium and high risk offenders did not differ on any of these outcome variables, however.

There were significant age differences on all outcome measures, with under 25 year olds committing significantly more re-offences of a greater severity than individuals aged 25 years or older (Table 2 provides $t$ values, means and standard deviations).

<table>
<thead>
<tr>
<th>Table 2</th>
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</thead>
<tbody>
<tr>
<td>Differences in number and severity of total and in-program recidivism between offenders grouped by age</td>
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<tr>
<td>----------------------------------</td>
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<tr>
<td>Insert Table 2 here</td>
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</tbody>
</table>
Consequently, age was entered into a multiple regression analysis after all the data items which were scored yes/no in the RNI had been entered in the first step. All items were entered into the analysis in order to check on their predictive validity. Each of the four outcome measures was entered as a dependent variable into a multiple regression equation containing all the RNI data items as independent variables. Although age was a significant (negative) predictor of number and severity of total and in-program recidivism events, most of the variance due to age was already accounted for by the RNI items. However, age did add significantly to the prediction of in-program severity of re-offence (change in $F_{60,220} = 5.65$, $p < .0001$). In contrast, marital status predicted neither number nor severity of re-offence.

No relationship was found between severity of original offence, and subsequent re-offences - severity of original offence did not correlate significantly with either number or severity of re-offence, regardless of the outcome definition of recidivism (Table 3). In general, as the number of re-offences increased, so too did severity of the crimes committed, regardless of the definition of recidivism. However, in view of the present findings, there appears to be little benefit in adding original offence severity as a variable on the RNI.

The strong correlations obtained between number of recidivism events and severity of recidivism for both total (.70) and in-program (.81) recidivism measures, suggests that there may be a subgroup of hardened criminals who gradually 'progress' into more violent crimes. These offenders need to be identified and monitored to ensure public safety. This finding corroborates that of the NSW Department of Corrective Services (1982), and it can also be inferred that this subgroup can be identified using the RNI, especially since the first four questions relate to number of past offences.
Interestingly, there was no significant difference between sex, property, or other offenders, in terms of either the number or severity of crimes subsequently committed. However, there was only a limited number of sex offenders available in this study, all of whom were treated as belonging to a homogeneous group of offenders. Some literature suggests that these offenders should be studied as a separate group to account for possible differences in recidivism outcomes (Robinson 1989). However, there was also no significant difference in the re-offences of property offenders as compared with other offenders, where the sample size was much larger.

The present study provides support for the professional override principle. Both the original RNI scores and risk categories, as well as the override scores and risk categories significantly predicted number and severity of total and in-program recidivism events. However, original (unadjusted) RNI risk categories did not discriminate between number of re-offences and severity of re-offence committed by medium and high risk offenders, while the scores adjusted by Community Correctional Officers (override scores) did discriminate effectively. With those offenders who score as high risk but are really medium risk, the Community Corrections Officers placed notes near some questions but did not score them. Where offenders obtained medium risk scores, but independent evidence suggested they were really in the high risk category, RNI total scores were adjusted upwards on the front of the form. This procedure clearly entails an element of subjectivity, and it is not certain that Community Corrections Officers can discriminate reliably between medium and high risk offenders, especially given the finding that the change in variance ($r^2$) due to application of the professional override principle was statistically nonsignificant.

Clearly though, the Officers were able to do so on sufficient occasions for the post-
hoc Tukey tests to provide a significant difference in the medium and high risk groups which was not present in the unadjusted condition.

Table 3  
Correlations between original offence severity and number and severity of total in-program recidivism

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Insert Table 3 here
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From a psychometric perspective, the discrepant number of items in each scale is problematic, undoubtedly causing marked variations in internal consistency, reliability, variance, and predictive validity of the several RNI scales. This is a psychometric limitation, and suggests that the RNI instrument requires some further modification. On a more positive note, the efficacy of the new scale designed to measure driving attitudes and behaviours was supported, as indicated by the significant correlations shown in Table 1, which compared more than favourably with those between the remaining RNI scale scores and the four outcome measures.

Overall, the RNI risk categories appear to discriminate significantly between the reoffending behaviour of low, medium and high risk groups. Nevertheless, attempts to improve the reliability and discriminative validity of the RNI instrument would seem desirable (including the possibility of differential weighting of some items). In this regard, it should be noted that the RNI is moving to a computerised version which will allow the items to be weighted differentially, and the total score to be computed automatically. Use of this more sophisticated assessment approach should enhance the validity of the RNI instrument as a predictor of recidivism. Even
though the predictive variance accounted for was small (8-15%), the RNI correctly classified 51-56% of offenders (Table 4).

Table 4
Percentage of recidivism events by risk category

<table>
<thead>
<tr>
<th>Risk category</th>
<th>No. of re-offences</th>
<th>Total</th>
<th>Low in-program</th>
<th>Total</th>
<th>Medium in-program</th>
<th>Total</th>
<th>High in-program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>43.1</td>
<td>49.1</td>
<td>13.5</td>
<td>16.0</td>
<td>3.2</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>12.1</td>
<td>8.2</td>
<td>5.3</td>
<td>6.4</td>
<td>2.8</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3.9</td>
<td>2.5</td>
<td>3.9</td>
<td>3.2</td>
<td>1.8</td>
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</tr>
<tr>
<td>3</td>
<td>1.4</td>
<td>1.1</td>
<td>1.8</td>
<td>0.7</td>
<td>0.7</td>
<td>1.1</td>
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<tr>
<td>4</td>
<td>0.4</td>
<td>0.4</td>
<td>1.1</td>
<td>0.4</td>
<td>0.7</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.7</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>0.4</td>
<td></td>
<td>0.4</td>
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<tr>
<td>7</td>
<td>0.4</td>
<td>0.7</td>
<td></td>
<td>0.7</td>
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<tr>
<td>8</td>
<td></td>
<td>0.7</td>
<td></td>
<td>0.4</td>
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<td></td>
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<tr>
<td>9</td>
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<tr>
<td>10</td>
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</tbody>
</table>

Note. It is possible to say that those low risk offenders who committed no subsequent offences were correctly classified. The same can be said of high risk offenders who reoffended. However, it is not possible to extrapolate beyond this because level of supervision confounds risk of reoffence. For example, it could be argued that the high risk offenders who committed no reoffences were also correctly classified but that the intensive supervision they received prevented them from reoffending. Those offenders who are undeniably placed within the correct category are highlighted in the table. Using the total recidivism measure, 51.3% of offenders were correctly classified. Using the in-program recidivism measure, 56.3% of offenders were correctly classified.
With regard to the implications of this study, it is likely that the advantage of using the RNI instrument lies in structuring the task of risk prediction. This has the benefit of reducing the number of misleading idiosyncratic aspects which are often taken into account (such as over-reliance on negative information and physical attractiveness), and draws attention to situational and environmental factors which are at least as important (Walters 1992). The availability of the professional override provision, which allows Community Correctional Officers to override the RNI scores was essential, as without this provision, the RNI was unable to discriminate adequately between the recidivism of medium and high risk offenders. While the overall variance accounted for did not increase significantly in the override condition, post hoc statistical comparisons showed that without it there was no difference between the medium and high risk groups in reoffending. Hence, the practice of professional override would appear to be essential in making accurate predictions of subsequent recidivism.

Note.

1. Item 45 ('Other clinical indicators of addiction'), and items 61-65 ('Extraordinary factors') had no recorded values and were excluded from the analyses.
References


Boyle, G J (1991) 'Does item homogeneity indicate internal consistency or item redundancy in psychometric scales?' Personality and Individual Differences, 12, 291-4.


Appendix A

RNI items

A. Criminal History: Any prior convictions as an adult, two or more prior convictions, three or more prior convictions, three or more present offences, arrested under age 17, ever incarcerated upon conviction, ever escaped from institution, ever punished for institutional misconduct, charge laid or parole suspended during prior community supervision, and official record of assault/violence.

B. Education/Employment: Currently unemployed, frequently unemployed, never employed for full year, ever fired, literacy problems, less than grade 10 schooling, and suspended or expelled at least once.

C. Financial: Problems with financial management, and reliance upon social assistance.

D. Family Marital: Unsatisfactory marital or equivalent situation, nonrewarding parental, nonrewarding other relatives, and criminal family spouse.

E. Accommodation: Unsatisfactory, 3 or more address changes in last year, and high crime neighbourhood.

F. Social Interaction: Unsatisfactory participation/performance (work/home), unsatisfactory peer interaction, unsatisfactory interactions with authority figures,
unsatisfactory use of time, a social isolate, some criminal acquaintances, some criminal friends, few anti-criminal acquaintances, and few anti-criminal friends.

G. Addiction Problems: Alcohol problem ever, drug problem ever, alcohol problem currently, drug problem currently, gambling, addiction problems resulting: in law violations or marital family or schoolwork or medical ('or' is treated as separate questions), and other clinical indicators.

H. Health: Inadequate emotional/personal development, psychiatric treatment, past and current psychiatric treatment, psychological assessment indicated, poor nutritional status, and poor physical health.

I. Driving: Currently unlicensed, currently suspended, currently disqualified, and poor attitude to the Traffic Act.

J. Attitudes: Supportive of crime, unfavourable toward convention, poor toward sentence, and poor toward supervision.

K. Motivation: Poor motivation to change inappropriate behaviour.

L. Extraordinary Factors: 5 blank question lines.
Appendix B

Offence severity scale

6 Violent Major
Murder; attempt/conspire to murder; manslaughter; rape; attempted rape; kidnapping; abduction; hijacking; robbery with violence whilst armed; and set fire to endanger human life.

5 Violent Serious
Assault occasioning grievous or actual bodily harm; sexual assault; sodomy; armed robbery; and stealing with violence.

4 Violent Moderate
Other assault; indecent assault; incest; indecent dealings; and robbery.

3 Non Violent Serious
Driving causing death or bodily harm; carnal knowledge; blackmail/extortion; burglary; arson; contempt; escape from custody; dealing/trafficking of drugs; import/export drugs; and dangerous driving.

2 Non Violent Moderate
Wilful exposure; bestiality; defamation; break and enter; break, enter and steal; fraud; forgery; false pretences; uttering; misappropriation; counterfeiting; receiving; stealing;
unlawful use of motor vehicle; wilful damage; official corruption; unlawful possession of a firearm; prostitution; possession/use of drugs; DUI; conspiracy and perjury.

1 Non Violent Minor

Possess stolen property; shoplift; breach service order; breach probation; breach bail; resist/hinder police; trespass; vagrancy; drunkenness; offences against good order; drive without a license; other driving offence.