

## THE PREDICTIVE UTILITY OF THE WISCONSIN RISK NEEDS ASSESSMENT INSTRUMENT IN A SAMPLE OF SUCCESSFULLY RELEASED TEXAS PROBATIONERS

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Predictive actuarial risk needs assessment research has focused on probation completion. This research examines the predictive utility of the Wisconsin Risk Needs Assessment instrument as used with Texas probationers. The purpose of the research reported in this article is threefold: (1) to determine the rate of rearrest for successfully released probationers; (2) to examine the predictive utility of the Wisconsin Risk Needs Assessment instrument in a sample of successfully released probationers; and (3) to determine if the assessment tool correctly classifies probationers according to their risk of rearrest. The Wisconsin instrument predictive utility appears to be 12.5% better than chance. Several recommendations for future research of released probationers are proposed.

As an alternative to the rising costs of incarceration, convicted offenders are being sentenced to community supervision at alarming rates (Davies & Dedel, 2006). Of the nearly 7 million offenders under control of the criminal justice system in the United States, slightly over 4 million are on probation, 2 million are incarcerated, and approximately 800,000 are on parole (Glaze & Palla, 2005). Despite supervising an overwhelming majority of offenders, community supervision (probation) departments have experienced budget cuts, which in turn have led to a reduction in staff and resources, regardless of the drastic increases of caseload sizes. Given the increased caseloads and decrease in program funding, the need to understand an offender's risk of reoffending is ever more important in order to maintain public safety and to provide the probationer with the appropriate treatment interventions.

In 1984 the National Institute of Corrections adopted the Wisconsin instrument as a benchmark by which future offender classification systems should be based. It was developed as a classification tool based on the offender's probability of successfully completing probation. The Wisconsin Risk Needs Assessment has been the most widely adopted risk classification instrument in the United States, to date (Connelly, 2003; Harris, 1994; Jones, Johnson, Latessa, & Travis, 1999; Wright, Clear, & Dickson, 1984).

As in most risk classification tools, the Wisconsin instrument assigns offender risk of reoffending into one of three categories: minimum, medium, and maximum. By administrative mandate, maximum-risk offenders are devoted the most departmental resources and state funding in hopes of decreasing their likelihood of recidivism. As an offender's risk of rearrest increases, the more intensely they are supervised by their supervision officer (i.e. frequent urinalyses, office visits, and therapy sessions, etc.).

The Wisconsin model incorporates static and dynamic variables in its determination of offender risk and needs. Static variables are emblematic of the offender's past and cannot be

changed, such as the offender's age (at time of data collection or assessment), criminal history, and history of antisocial behavior. Dynamic factors consist of items that are changeable, more subjective, and often comprise the goals by which treatment is based, for example, behavioral characteristics, values and antisocial cognitions (Gendreau, Little, & Goggin, 1996).

Given the Wisconsin instrument's purpose as a classification tool premised on assessing the likelihood of successful supervision completion, prior research has focused on parolees (Yacus, 1998), felony and misdemeanor probationers (Connelly, 2003; Harris, 1994; Henderson, 2006; Schauer, 1990; Yacus, 1998), and juvenile offenders (Ashford & LeCroy (1998)). Research has demonstrated that the Wisconsin tool is an unbiased predictor of the probation success of ethnic minorities, with similar scale item predictors for both minorities and whites (Bonta, LaPrarie, & Capretti, 1997). Andrews and Bonta (1994) also demonstrated similar conclusions that factors of risk and needs are mostly independent of race after controlling for education and income.

Validity estimates for the Wisconsin Risk Needs Assessment using Pearson correlation coefficients have ranged from .27 to .68 on measures of rearrests while on probation (Gendreau, et. al., 1996; Harris, 1994), and from .16 to .53 on measures of supervision success (Connelly, 2003; Harris, 1994; Schauer, 1990). To determine how risk tools predict better than chance, Loeber and Dishion (1983) developed a measure that they called the relative improvement over chance or RIOC. Relative improvement over chance corrects for the differences between the base rate and selection ratio of a predictive device. Previous studies of successful probation completion examining the Wisconsin instrument's RIOC measure have ranged from 16% to 58% (Connelly, 2003; Harris, 1994; Schauer, 1990). Improvements in the prediction of successful probation completion have ranged from 23% to 55% (Connelly, 2003; Schauer, 1990). Finally, in predicting probation revocation, prior research has demonstrated that Wisconsin instrument's RIOC has ranged from 24% to 55% (Connelly, 2003; Harris, 1994).

Prior research on the Wisconsin instrument has focused on its ability to properly classify offenders based on their likelihood of completing their probationary terms as a result of their risk and needs scale scores, while controlling for supervision type and ethnicity. Given the practical reality that most probationers will be released from supervision, understanding the ability of the Wisconsin instrument in predicting post-probation rearrest is as important as understanding its ability to predict successful probation completion. As a result, this article will examine the utility of the Wisconsin Risk Needs Assessment instrument in properly classifying offenders according to their chances of being rearrested after successful release from probation.

## Method

### Subjects

The article consists of a convenience sample of 159 felony and misdemeanor probationers who were successfully released from a Texas Community Supervision and Corrections Department (probation department) between September 1, 1999 and August 31, 2000. The Wisconsin Risk Needs Assessment instrument was administered to those offenders who were directly supervised (reported in person to this particular agency). One hundred and twenty-four offenders placed on probation in this particular county resided outside the jurisdiction and had their supervision transferred to those respective departments. As a result, they would not have an assessment on file and were excluded from this analysis. One hundred and sixty-four female offenders were excluded from this analysis because (a) the Wisconsin instrument was developed and standardized on male offender samples (Baird, Heinz, & Bemus, 1979), (b) there are no gender-specific validity

estimates available for the Wisconsin Risk Needs instrument, and (c) research demonstrates that female offender's recidivate at lower rates than males (Salekin, Rogers, Ustad, & Sewell, 2006). In conclusion, it would be premature to extrapolate from male recidivism research and conclude that the risk scores identified for male offenders are the same for female probationers. Research also demonstrates that driving while intoxicated offenders have different behaviors and characteristics than other offenders (Curtis, Hoctor, & Pennell, 1994); thus, the 210 DWI offenders were excluded from the analysis.

#### Measures

Premised on the risk of reoffending, the Wisconsin Risk Needs Assessment instrument compiles total risk and needs scores, which are used to determine the offender's level of supervision as minimum, medium, or maximum. According to the risk and needs assessment, the higher an offender's risk the more intensive their level of supervision. The risk scale, which is composed of eleven items measuring the offender's level of education, current employment status, and past criminal behavior, has risk cutoff scores as follows: minimum risk (0-7), medium risk (8-14), and maximum risk (15+). The needs scale, which measures the offenders' needs for treatment interventions with 12 items (i.e. educational, employment, psychological, and substance abuse needs), has cutoff scores as follows: minimum needs (14 & below), medium needs (15 – 29), and maximum needs (30 +).

Research has demonstrated that if the follow-up time is extended two more years, from the typical 36 months used in recidivism studies, there would be a 20%-30% increase in recidivism (Langan & Levin, 2002). As a result, recidivism will be operationalized as any subsequent arrest for Class B misdemeanors or more serious offenses within five years of being successfully released from probation.

#### Assessment Procedures

The Wisconsin Risk Needs Assessment is completed by a probation officer using official records and offender interviews within the first 30-days of being placed on probation. In scoring the assessment, official records (i.e. criminal history checks, pre-sentence investigations, arrest reports, records of prior educational attainment, and employment verification) are reviewed by the officer. Information is also obtained from external sources, such as family, friends, and close associates of the offender. Once the offender assessment has been completed, the probationer is supervised according to their level of risk.

The offender demographics and Wisconsin Risk Needs Assessment scores were gathered from the probation department's data management system, Corrections Software, and by reviewing offender files. Rearrests were identified by reviewing files maintained at the Texas Department of Public Safety Crime Information Center (TCIC), which cross references offender identifiers with the FBI's National Crime Information Center (NCIC).

#### Results

Table 1 presents offender demographics. Caucasians composed 58.5% of the sample, while Blacks, Hispanics, and Others comprised 28.9%, 11.3%, and 1.3%, respectively. Sixty-six percent of offenders had at least a high school diploma/GED. Based on the Wisconsin Risk Needs Assessment, 21% of the sample was classified as high risk, 47% were medium risk, and 32% were low risk. The average length of time served on probation was 23 months (SD = 27.61), and most offenders in the sample (77%) were serving a probation sentence for a misdemeanor charge. The average offender age at probation release was 29 years (SD = 11.93).

Table 1  
Offender Demographic of Probationers at Successful Release from Probation.

	Frequency	Percentage
Race		
Caucasian	93	58.50
Black	46	28.90
Hispanic	18	11.31
Other	2	1.30
Education		
No High School	54	34
High school Diploma/GED	105	66
Type of Probation		
Felony	37	23.3
Misdemeanor	122	76.7

The mean Wisconsin total risk scale scores for both recidivists and nonrecidivists was 10.13 (range = 0 to 33; SD = 5.638) and the mean needs scale score was 11.31 (range = -2 to 34; SD = 7.908). As presented in Table 2 t-tests were run to determine if those offenders rearrested were significantly different on the Wisconsin Risk Needs Assessment instrument. Recidivists had a significantly higher total risk score ( $t(-2.418) = -2.190, p = .05$ ), and total needs score ( $t(-2.187) = -2.788, p = .05$ ), than nonrecidivists.

Table 2  
Comparisons Between Rearrested and Nonrearrested Probationers: Mean Scores of Total Risk and Total Needs Scale Scores

	N	Mean	SD	T	df	p(2-tailed)
Total Risk Score			-2.418	157	.017*	
Nonrecidivist	98	9.29	4.933			
Recidivist	61	11.48	6.431			
Total Needs Score			-2.187	157	.030*	
Nonrecidivist	98	10.24	8.057			
Recidivist	61	13.03	7.407			

Note: SD = standard deviation; Recidivist = offenders rearrested; Nonrecidivist = offenders not rearrested; df = degrees of freedom.

\* $p < .05$

Table 3 demonstrates that the point-biserial correlations between rearrest and level of supervision were .18, .18 for risk level, .19 for total risk score, .09 for needs level, and .17 for total needs score. Only the offender's needs level was not significant. The total risk score was the strongest predictor of the scale scores, but only accounted for 19% of the variance in recidivism.

Table 3  
Point-biserial Correlations of Level of Supervision and Scale Scores to Recidivism

	r	n
Wisconsin Level of Supervision	0.18*	159
Wisconsin Risk Level	0.18*	159
Wisconsin Needs Level	0.09	159
Wisconsin Total Risk Score	0.19*	159
Wisconsin Total Needs Score	0.17*	159

\*  $p < .05$ .

Table 4 demonstrates the utility of the Wisconsin Risk Needs Instrument in classifying probationers according to their level of supervision. Rearrest was predicted for high-risk offenders (i.e. Wisconsin Risk score of 15+ or Needs score of 30+). Of the sample, 61 (38.4%) were rearrested within five years of being successfully released from probation. Nineteen (31.1%) of those rearrested were high-risk and 42 (68.9%) were medium- and low-risk. Thirty percent of the low-risk offenders were rearrested as opposed to 56% of the high-risk offenders. High-risk offenders were significantly more likely, than the medium and low-risk offenders to be rearrested after being successfully released from probation ( $\chi^2 = 5.162$ ,  $p < .05$ ,  $n = 159$ ).

Table 4  
Percent of Offenders Reoffending by Level of Supervision

Level of Supervision	% Recidivated w/in Risk Group	$\chi^2$	P
High Risk	55.90%	9.038	0.05
Medium Risk	36.00%		
Low Risk	30.00%		

Even though there were a higher percentage of high-risk offenders (55.9%) who re-offended (true positives) than at the medium (36.0%) and lower-risk levels (30%), the percentage of offenders that received the high-risk categorization and were not rearrested (false positives) remained considerable (36%).

In order to determine the predictive accuracy of the Wisconsin Risk Needs Assessment instrument, the medium and low-risk offenders were collapsed into one group and their rates of rearrests were compared to the high risk offenders. According to the Wisconsin trainers guide offenders with a risk score of 15 or more or a needs score of 30 or more are categorized as high-risk. Table 5 presents the findings from a contingency table comparing predicted risk with actual post-probation rearrest. The Wisconsin tool has a high rate of false positives (44%) and false negatives (37%). Despite high rates of error (both false positives and negatives) the relative improvement over chance (RIOC) measure demonstrates that the Wisconsin tool predicted the correct classification 12.5% better than chance.

Table 5  
Predictive Accuracy of Wisconsin Level of Supervision for Rearrest<sup>a</sup>

Accuracy Measure	Recidivism
True Positives	55.9% (n = 19)
False Positives	44.1% (n = 15)
True Negatives	66.4% (n = 83)
False Negatives	33.6% (n = 42)
RIOC	12.50%

Note: True Positives = the number of subjects predicted to be failures who were failures; False Positives = the number of subjects predicted to be failures who were not failures; True Negatives = the number of subjects predicted not to be failures who were not failures; False Negatives = the number of subjects predicted not to be failures who were failures; RIOC = relative improvement over chance.

(a) Any arrest for a Class B misdemeanor or greater within 5 years of being successfully released from probation.

## Discussion

The purpose of this study was to shift the inquiry away from actuarial predictions of successful probation completion to that of understanding post-probation rearrest. The Wisconsin tool appeared to be effective at classifying successfully released offenders according to their risk of re-offending, as evidenced by a significantly higher rate of re-arrest for maximum-level probationers as compared to medium and low-risk offenders. Despite predicting rearrest 12.5% better than chance, the Wisconsin Risk Needs Assessment never explained more than 19% of the variance in recidivism with its scale scores.

The high rate of false positives and false negatives warrants concern. From an administrative standpoint, these two offender categories present serious problems. False positives lead to over-supervision and/or over-treatment of offenders (Harris, 1994; Schauer, 1990), draining resources that could better be used on offenders most in need. Using intensive counseling for low-risk offenders in this era of budget cuts and increased officer caseloads is unacceptable and counterproductive. The ability of the Wisconsin instrument to decrease the number of false positives and false negatives is of increasing importance, particularly in regards to public safety and offender rehabilitation.

Just as false positives are over-supervised and a drain on dwindling resources, medium- and low-risk recidivists are not receiving the treatment and level of supervision they need are of even greater importance. Thirty-six percent of the medium-risk and 30% of low-risk offenders were re-arrested, presenting more of a threat to society than false positives because they go undetected while on probation. Community supervision departments must understand the factors that increase offender recidivism after being released from probation.

As demonstrated in Table 3, despite being significantly, positively correlated with recidivism, the offender's level of supervision, risk level, total risk score, and needs level were all small. There are several reasons that may explain these weak correlations. The small, but acceptable, sample size or the amount of officer subjectivity involved in the scoring of the risk needs scale items may severely influence the correlational strength. Of the total scale scores and the levels of supervision, only the offender's needs level failed to demonstrate a significant correlation with the offender's rearrest. Contrary to recent findings (Brown, 2002) demonstrating that the needs level has a stronger correlation with rearrest, the findings of this research demonstrates that the risk level was a stronger predictor.

## Limitations

When examining recidivism and the ability of an assessment tool to accurately classify offenders according to their risk of rearrest, there are several limitations that must be noted. For one, the operationalization of recidivism raises a number of issues. In the case of this article, recidivism was measured by dichotomizing any new arrest for a Class B misdemeanor or greater. This could range from simple possession of marijuana up to violent, assaultive offenses. Neither the seriousness of the offense (i.e. rape or theft) nor offense type (i.e. misdemeanor or felony) for which the offender was placed on probation or rearrested after post-completion was examined. Prior research (Langan & Levin, 2002) has demonstrated that there may be an association between offense seriousness, offense type and offender rearrest.

Another limitation results from the inability of this study to control for the inter-rater reliability of the assessment tool. Several of the items on the scale are subjective, requiring officer interpretation. Other items are based solely on offender self-reports, making verification difficult

(i.e. prior drug use or number of address changes). A lack of officer scoring consistency and offender honesty in self-reports challenges the reliability of the results.

When an offender is placed on community supervision, possible treatment interventions range from money management skills to intensive inpatient drug and alcohol counseling. Examining the utility of the assessment tool to accurately classify offenders according to their risk of post-probation rearrest poses the issue of the inability to control for treatment interventions that may have played a significant role in the chances of rearrest, as in the case of this analysis. By examining the treatment interventions, a better understating of post-probation rearrest can be achieved.

#### Suggestions for Future Research

The time has come for a change in shift from understanding offenders while they are on probation to our ability to decipher issues once a probationer is released from supervision and this article is an attempt at such change. Future research should examine the number of days to rearrest and offense type for which the offender was rearrested. By doing so, we can begin to understand the complex nature of rearrest that is not allowable when dichotomizing recidivism or not controlling for offense type. In controlling for the offense for which the offender was rearrested and the amount of time to new arrest, departments are better able to focus attention and possibly implement programs for released probationers.

Future research examining the Wisconsin Risk and Needs Assessment's utility in predicting post-probation recidivism should determine which items of the risk and needs scales significantly correlate with recidivism. This examination should determine if the items of the scales are based on validated criminological theory of those factors that increase the chances of criminal activity. An understanding such as this could provide agencies with the ability to refocus resources on those areas that can provide offenders with the best chances of desistance from future criminal behavior.

The Wisconsin instrument was developed before there was an understanding of the role that needs items have in predicting post-probation recidivism. Since then, research has demonstrated the utility of needs items in predicting rearrest (Brown, 2002; Gendreau, et al., 1996). Given the Wisconsin tools total risk and total needs scale scores, future research should examine the ability of a total scale score (combining the total risk score and the total needs score) to predict post-probation recidivism.

#### Conclusion

Offender risk assessment is evolving from individual level actuarial tools to multidimensional assessments that take into account environmental factors and cognitive processes (Miller, 2006). Perhaps the Wisconsin Risk Needs Assessment's inability to include environmental factors as predictors explains its high rate of false positives, false negatives, and low relative improvement over chance predictions. Though prediction will never achieve complete accuracy, each improvement only increases public safety and focuses supervision resources, both of which are crucial in this day of dwindling public support and lack of legislative funding.

From a practical viewpoint, probation departments are responsible for properly managing offender risk, which can only be achieved through instruments that distinguish between high-risk and low-risk offenders, while decreasing the number of misclassified offenders. Not only is this important to protect the public, but it also increases effectiveness of rehabilitation programs based on the assessed needs of offenders.

It is essential that probation departments develop tools to predict future criminal activity because most offenders they supervise in the community will eventually be released from probation. For many years, the Wisconsin tool focused on successful probation completion. The next level of prediction should focus on behavior after an offender is released from community supervision. What better place to begin than to analyze the offender than from their initial risk needs assessment?

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