3-2011

Recidivism Risk Assessment for Aboriginal Males: A Brief Review of the Scientific Literature

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_____ Research Report _____

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2011 Nº R-239

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March 2011

Acknowledgements

The authors would like to thank their colleagues Terry Nicholaichuk, Brian Grant, Rick Ruddell, Lynn Stewart, and Kyle Archambault for their thoughtful comments on earlier drafts of this paper.

Executive Summary

Key words: *insert key words/phrases here.*

No level of violent recidivism is acceptable to Correctional Service of Canada staff or the Canadian public. Among other tools, CSC staff use counselling, supervision, education, and treatment programs to ensure the safe community reintegration of eligible offenders. The core method of determining risk for recidivism is an actuarially-based risk assessment instrument. The general process of contemporary risk assessment is outlined in this paper revealing a number of efficient and effective measures suitable for all male offender populations. Theory and research are reviewed showing that established risk prediction factors such as age, criminal history, anti-social peers, anti-social attitudes, and substance abuse predict criminal recidivism for all offenders regardless of cultural, racial, or geographic heritage. The majority of these validated risk assessment instruments have moderate predictive power for all male offenders. Seven of these instruments are individually reviewed with regard to their use with Aboriginal groups. This paper concludes with recommendations for further research on risk assessment among cultural groups.

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Recidivism Risk Assessment for Aboriginal Males

Over time and in several different contexts it has been suggested that the Correctional Service of Canada (CSC) devise a set of culturally distinct risk assessment instruments for different cultural groups. These suggestions are consistent with the CSC's commitment to respect diverse cultures and avoid responding to cultural differences and issues by applying the standards of the dominant culture. The CSC sees as appropriate and necessary that accommodation be made for Aboriginal culture and experience; indeed, *R. v. Gladue (1999)* states that the nature and context of Aboriginal life and the cultural experiences of Aboriginal people must be taken into consideration when reviewing criminal sanctions and interventions.

In all advanced correctional jurisdictions actuarial risk assessments are used to estimate risk to reoffend upon release. To avoid prejudicial or arbitrary scoring, actuarial risk assessment instruments use empirically validated risk factors combined into a total risk score using explicit rules. Within the CSC it has traditionally been our practice not to use these risk assessments on offenders who have self-identified as Aboriginal as these risk assessments had not been "normed" on Aboriginal offenders. There were reasonable concerns that the use of these measures could put Aboriginal offenders at a disadvantage and that these measures would not fairly represent the risk posed to the community by a released Aboriginal offender. During the time period that these discussions were influencing policy, theories of criminal conduct were evolving to suggest that there was no scientific reason to assume that an Aboriginal offender would demonstrate a different re-offence risk given the same risk markers as a non-Aboriginal offender (Andrews & Bonta, 2006, 1994).

Over time it became evident that this position could no longer be supported as research found that the factors that best predicted recidivism were objective facts not based on culture, but upon personal history (Gendreau, Little, & Goggin, 1996; Hanson & Bussiére, 1998; Hanson & Morton-Bourgon, 2007). Examples of these factors included the offender's age, interest in sexual contact with children, the number of past criminal convictions and preferred victim type. To date, no culturally specific risk factors have been identified in the literature, allowing most of the standard risk assessment instruments to be used in countries and populations as diverse as Taiwan, Germany, Somali refugees to Sweden, Latvians, and with Australian and New Zealand

aboriginal peoples. The CSC is currently moving away from the previous policies as in 2009 the CSC began to use the SIR-R1 scale, a measure of recidivism risk, to determine program intensity for Aboriginal offenders (Nafekh & Motiuk, 2002) and the STATIC-99 (Hanson & Thornton, 1999) to predict program intensity for Aboriginal male sexual offenders (CSC, 2009).

The scientific literature is clear that actuarial methods of risk prediction out-perform clinical methods (Douglas, Cox, & Webster, 1999; Grove & Meehl, 1996; Grove, Zald, Lebow, Snitz, & Nelson, 2000; Hanson & Morton-Bourgon, 2007; Monahan, 2007). This means that actuarial methods of risk prediction are more accurate than any other method of making a judgment about the risk that an offender might pose to the community upon release (Hanson & Morton-Bourgon, 2007). However, if one wished to develop a cultural specific risk assessment, one additional hurdle must be cleared. It must be kept in mind that a culturally specific risk assessment as good as the instruments currently in use, is of no use at all. To be of any practical use, such a test would have to be statistically significantly superior to the tests in common use.

This paper will first outline some characteristics of the population currently being held within CSC institutions and the frequency of violent recidivism (including sexual) for all offenders under community supervision. The general process of contemporary risk assessment will be reviewed and the contribution of individual categories of risk factors examined. This paper concludes with a review of the various established risk assessment instruments that have been tested on Aboriginal samples. Suggestions are offered concerning directions for future research.

Aboriginal Offenders[1]

Aboriginal offenders are overrepresented in the Canadian criminal justice system relative to their numbers in the Canadian population. Aboriginal peoples represent only 3.8% of the Canadian adult population (Statistics Canada, 2008) but 17.0% of the federal incarcerated population (Public Safety Canada, 2008). This means that Aboriginal offenders are over-represented four and a half times in relation to their numbers in the general Canadian population.

[1] The term "Aboriginal" in this paper includes First Nations, Métis, and Inuit peoples. The nominal cultural identities/categories used in this paper were determined by the offenders identifying themselves as belonging to one of these categories at intake. Offenders are not required to identify themselves with a cultural category.

Table 1

Demographic Characteristics of Four Cultural Groups Incarcerated Within the CSC

Offender characteristics	First Nations and Métis		Inuit		Other		Caucasian	
Number of offenders in custody	2,490		125		2,006		8,533	
	Male	Female	Male	Female	Male	Female	Male	Female
Number of offenders	2,335	155	121	4	1,933	73	8,268	265
Percentage of incarcerated federal correctional population	17.8	1.18	0.92	0.03	14.7	0.55	62.9	2.01
Average age in years (SD)	36.0 (10.6)	34.0 (9.4)	37.3 (10.3)	31.2 (0.96)	34.2 (10.6)	35.9 (11.5)	40.8 (12.3)	38.2 (11.2)
Married or Common-law status	37.8%	36.8%	24.0%	0.0%	51.0%	34.2%	36.0%	37.7%
Education								
- Percentage with less than grade 8	22.9%	27.6%	44.8%	0.0%	18.4%	10.6%	22.9%	18.0%
- Percentage with less than grade 10	60.1%	58.0%	76.4%	33.3%	40.4%	28.8%	47.6%	40.6%
- Percentage - no high school Diploma	88.0%	84.6%	91.5%	66.7%	74.4%	54.6%	74.7%	66.2%

Note. Offender characteristics as of March 1, 2009. Institutional count = 13,154

An important component of the Aboriginal population is the Inuit people who make up only 0.16% of the Canadian population (Statistics Canada, 2008), but almost one percent (0.95%) of the incarcerated federal offender population. This over-representation of Inuit

offenders is almost six times greater than their numbers in the general Canadian population.

As presented in Table 1, as of March 1, 2009, there were 13,154 offenders incarcerated within CSC institutions, 2,490 of whom were First Nations or Métis (2,335 males & 155 women), and 125 were Inuit offenders (121 males & 4 women). The table demonstrates that relative to non-Aboriginal offenders, First Nations, Métis, and Inuit offenders have significantly lower educational attainment and Inuit offenders appear to have fewer social supports, as suggested by their marital or common-law status[2].

Table 2 compares the offence profiles of four cultural groups of federal offenders based upon their current sentence and their previous offence histories ("ever convicted"). The results demonstrate that a high percentage of offenders in CSC custody are serving a current sentence for a violent offence and an even larger number have at one time had a conviction for violence. Of the four cultural groups, Inuit offenders are more often currently incarcerated for a sexual offence and are more likely to have committed a violent and a sexual offence at the same time.

The Frequency of Violent Recidivism

A fundamental challenge in violence prediction is the relatively low frequency of violent or sexual recidivism in criminal offenders (Bonta, Harmann, Hann & Cormier, 1996; Hanson & Bussière, 1998; Harris & Hanson, 2003, 2004; Mossman, 2008; Wakefield & Underwager, 1998). By definition, low frequency events are difficult to predict (Mossman, 2008), just as the occurrence of rare physical events such as tsunamis and lightning strikes are difficult to predict. Both common sense and mathematical probability dictate that these events will happen, but not when and never exactly where. The rate of offender reconviction for violent offences while under community supervision is relatively low (Public Safety Canada, 2008). Data from 2007-08 indicate that fewer than 2% of offenders on conditional release committed another violent offence (including sexual offences) prior to the end of their sentence.

[2] Offender data are drawn from the Offender Management System (OMS) a comprehensive data bank that contains risk and need information that is used to develop correctional and re-integration plans for each offender. Categories in tables one and two are not mutually exclusive.

Table 2
Offence Characteristics of Four Cultural Groups of Male Offenders Within the CSC

	First Nations & Métis	Inuit	Other	Caucasian
	N = 2,335	N = 121	N = 1,933	N = 8,268
Current Sentence				
Violent offence	73%	61%	66%	66%
Sexual offence	16%	45%	12%	15%
Violent and sexual offence	8%	14%	7%	6%
Violent and sexual and other offence	3%	5%	2%	2%
Ever convicted				
Violent offence	81%	72%	69%	72%
Sexual offence	19%	51%	13%	18%
Violent and sexual offence	13%	28%	8%	9%
Violent and sexual and other offence	6%	14%	3%	4%

Note. Offender population as of March 1, 2009. Institutional count males = 12,657

The violent re- offence rates indicate that 1.9% of offenders on all forms of conditional release reoffended in a violent manner prior to their warrant expiry date. Broken down by type of conditional release, these data show that less than half of one percent (0.4%) of offenders on

Day Parole, and less than one percent (0.9%) of those on Full Parole reoffended in a violent manner while on conditional release (Public Safety Canada, 2008).

Mathematically, the most reliable prediction occurs when the probability of a given event of interest occurring is 50%. As the likelihood of an event actually occurring varies from 50%, the mathematical ability to predict that event is reduced (Wakefield & Underwager, 1998). The relatively low rate of violent or sexual recidivism creates what is known as a "base rate" problem. The base rate is the percentage of times that a given outcome will occur within a population. For example, if 21 of every one hundred offenders are left-handed, the base rate of left-handedness in the offender population would be 21%. In the case of violent and sexual re-offending the base-rate is less than 2% for offenders on conditional release. As the base-rate of a particular behaviour declines, the prediction "target" gets smaller, making accurate prediction increasingly difficult. Hence, predicting unlikely behaviour is much more difficult than predicting something that happens about half the time or more. In spite of these statistical and mathematical limitations, researchers have, over time, developed risk assessment methodologies that assist practitioners to estimate, within acceptable margins of error, the likelihood of reoffending.

The Risk Assessment Process

Three generations of risk assessment

Twenty years ago there were few established risk assessment instruments and most practitioners relied upon "clinical judgement". According to Bonta (1996), there are three "generations" of risk assessment. The first generation of risk assessment is "clinical judgement" which relies entirely upon the experience and knowledge of the evaluator to form a subjective estimate of future risk. This type of assessment does not consistently use empirically-based factors and the entire process is idiosyncratic, making it unreliable and non-replicable. Research has shown that clinical judgements were little better than chance (Menzies, Webster, McMain, Staley & Scaglione, 1994; Quinsey & Ambtman, 1979) and that even very experienced and knowledgeable practitioners routinely overestimate risk in incarcerated offenders (Steadman & Cocozza, 1974). Therefore, assessment of risk based on clinical judgment is not considered an appropriate method for determining risk of reoffending.

As a result, researchers and decision makers became increasingly interested in "actuarial"

risk assessment. Actuarial assessment is described by Bonta (1996) as "second generation" risk assessment. These assessments use empirically validated risk factors combined into a scale that includes clear decision rules to guide assessors. The major limitation of second generation risk tools is that little attention was paid to the meaning or clinical utility of the risk factors. If a given risk factor predicted recidivism, it was included in the scale, even if the direction of the relationship was not explained (e.g., diagnosis of schizophrenia as a protective factor, severity of victim harm being a protective factor [i.e., acting to reduce risk]; Harris, Rice, and Quinsey, 1993). Bonta classifies third generation risk assessment tools as those that employ empirically-validated actuarial risk factors but also include a number of clinically-useful dynamic risk factors, i.e., factors used to guide interventions and are sensitive to change.

Although actuarial risk tools have been widely used in corrections for many years, (Salient Factors Score; Hoffman, Stone-Meierhoefer, & Beck, 1978; Hoffman & Adelberg, 1980 Hoffman & Beck, 1980); Statistical Information on Recidivism, SIR, Nuffield, 1982, 1989; LSI, Andrews, 1982; Andrews & Bonta, 1995) there has been a general reluctance to use structured assessments for Aboriginal offenders to avoid assessing Aboriginal people by the standards of the dominant culture. Nevertheless, interest in structured risk assessment has grown exponentially over the last 20 years. In the last five years (2003 through 2008) there was an average of 176 scientific articles on risk assessment published each year in peer review psychology journals. This is in contrast to an average of 12 per year for the years 1990 to 1995.

Actuarial risk prediction and the "Car Insurance" example

Actuarial measures of risk provide a fundamental baseline estimation of risk that represents the offender's long-term risk in comparison to a large group of other offenders who have the same risk characteristics. Static risk measures use exactly the same methodology to assess future risk of criminal behaviour as insurance companies use to estimate an individual's chance of having an automobile accident in the coming year.

Insurance companies take variables known to be associated with having an accident (such as driver age, the number of speeding tickets, past accidents, and the number of people hurt in those accidents) and insert these historical indications of risky behaviour into a mathematical equation. This mathematical equation produces an estimate of whether that person is likely to be involved in an accident in the coming year. They then determine an automobile insurance

premium or tariff according to that estimated risk.

In the criminal justice system the process of determining static risk is conceptually identical. A number of factors that are associated with risky behaviour (such as offender age, past violent or sexual offences, past breaches of conditional release, and the number of victims they have hurt in past crimes) are used in a mathematical equation that produces an estimate of whether that person is likely to be involved in more criminal behaviour in the near future. The correctional system then makes security and management decisions according to these estimates of risk. To do this, however, you must know what factors predict future recidivism.

This system has a number of benefits for the offender and for the correctional jurisdiction. Primarily, the assessment is "culture free". You either have previous car accidents or you do not, there is not one premium or tariff for Aboriginals and one for non-Aboriginals. The offender is assessed upon verifiable facts not someone's opinion; this is a direct attempt to remove bias from the assessment process. Errors in fact, when reviewed with the help of the offender, can be corrected. There are no implicit or hidden assumptions about "why" someone did something and as a result, prejudices are excluded. The offender is assessed only on factors that have a known association with outcome. The factors used are not arbitrary but based upon multiple research findings. Finally, the risk that the offender poses to society is assessed against known outcome data for offenders with similar risk markers as that of the offender regardless of background, culture, or geography.

Risk Factors that Reliably Predict for All Offenders

In 1996, Gendreau, Little, and Goggin produced a meta-analytic report reviewing over 130 scientific papers for potential risk factors correlated with all types of adult offender recidivism (sexual, violent, general re-offending). The analysis indicated eight central factors that reliably predicted recidivism for most offenders, for most crimes. These eight factors are presented in Table 3. Reviewing the published scientific evidence for each of these factors, Rugge (2006) found that five of these "Central Eight" factors predict as well for Aboriginal males as they do for non-Aboriginal males.

Equally important, four of the five factors identified by Rugge (2006) are designated by Andrews and Bonta (2006) as "Big Four" risk factors [anti-social history, anti-social personality, anti-social attitudes, & anti-social peers] – the four factors that most powerfully predict criminal

recidivism in all offenders. This finding is consistent with criminal risk theory which would predict that major risk factors for criminal recidivism are independent of race and culture (Andrews & Bonta, 1994, 2006).

Evidence supporting the "Big-Four" was strengthened when other studies found that the same risk factors that predicted for non-Aboriginal offenders also predicted for Aboriginal offenders. Bonta, (1989; Bonta, Lipinski, & Martin, 1992) found that a history of antisocial acts, as represented by criminal history, predicted re-admission to corrections for both Aboriginal and non-Aboriginal offenders and that antisocial attitudes were a risk factor for male Aboriginal offenders. In addition, a report on the community risk/needs assessment (British Columbia Public Safety and Solicitor General, 2004) found that both static risk factors and dynamic factors were predictive of recidivism in Aboriginal samples.

Dynamic Risk Prediction

Static predictors represent past events that, by definition, cannot be changed. As a result, static risk factors cannot be used to measure change. Dynamic risk factors on the other hand, assess skill deficits, learned behaviours, coping mechanisms, and personal predilections that can be changed through correctional programming. Table 3 presents examples of dynamic risk factors that predict well for both Aboriginal and non-Aboriginal offenders. These include anti-social peers, anti-social attitudes, and substance abuse. The assessment of dynamic risk predictors not only refines the risk prediction process that is underpinned by the static risk assessment but also points to the best empirically-based treatment targets (Hanson, Harris, Scott, & Helmus, 2007: Harris & Hanson, 2003). While you can not change a history of criminal conduct you can teach people to avoid anti-social associates, to work on their substance abuse issues, and to adopt new attitudes towards criminal offending. The identification of these strong dynamic risk predictors can be interpreted as a hopeful sign since, being amenable to change, once addressed, they are likely to reduce an offender's probability of reoffending.

Table 3
Review of the "Central Eight" Risk Factors for Criminal Recidivism as Applied to Samples of Aboriginal Men (Adapted from Rugge 2006 Table 2)

1) History of Anti-social Behaviour (criminal history)	• Predicts equally well for Aboriginal offenders
2) Anti-social Attitudes	• Predicts equally well for Aboriginal offenders
3) Anti-social Peers	• Predicts equally well for Aboriginal offenders
4) Anti-social Personality Pattern	• Very little research on Aboriginal populations, however, the majority of research indicates no racial differences
5) Substance Abuse	• Predicts equally well if not better for Aboriginal offenders
6) School and/or Work	• Research is inconclusive
7) Family and/or Marital	• May not predict recidivism for Aboriginal offenders
8) Leisure and/or Recreation	• No research on these factors

Risk Assessment in Other Indigenous Populations

Two countries that have indigenous populations, Australia and New Zealand, have examined the feasibility of developing culturally specific risk assessment instruments.

Allen and Dawson (2004) attempted to identify culturally unique risk factors for the Australian Aboriginal population, different from, or in addition to, those that predict for non-Aboriginal Australians. These efforts were unsuccessful. Researchers were unable to find any separate risk factors that predicted sexual or violent recidivism specifically for Australian Aboriginal males. These authors described their results as "disappointing".

New Zealand Corrections has recently instituted a computerized risk assessment system for sexual offenders called the STATIC-AS (after Hanson & Thornton, 1999). This risk assessment methodology is working relatively well, producing Receiver Operating Characteristic

statistics (ROC, Swets, Dawes, & Monahan, 2000) between 0.70 and 0.78 (moderate to strong levels of prediction, Cohen, 1988). Analysis using a country-wide sample comprising 1,094 offenders, of which approximately 40% were of Maori heritage, revealed that this risk assessment did not report differential risk profiles for Maori offenders. As a result, New Zealand continues to use the STATIC-AS with Caucasians, Maori, and Pacific Islander offender groups (Skelton, Riley, Wales, & Vess, 2006).

In her paper on risk assessment of Aboriginal males, Rugge (2006) acknowledged that most risk assessment instruments presently in use in the western world were originally validated on non-Aboriginal offenders. In some countries, such as England, Scotland, and Sweden, this is not an issue because they do not have "First Peoples". They do, however, have significant immigrant populations and their respective correctional services assess these individuals using standard risk assessments. Those results that have been published do not show any significant cultural differences for immigrants in terms of risk prediction (Sjöstedt & Långström, 2001).

Risk Instruments that Reliably Predict for Aboriginal and Non-Aboriginal Offenders

Currently, in the English language scientific literature there are more than a dozen accepted risk assessment tools. By "accepted" we mean that these instruments have been shown to predict risk of further criminal behaviour with at least moderate levels of accuracy, have been replicated and validated with multiple populations, and meet accepted standards of reliability (Hanson & Morton-Bourgon, 2007). In addition, some of these measures have passed both Daubert and Frye challenges in the United States indicating that these instruments have met the standards of professional acceptance allowing them to be used in court cases (Daubert, 1993; Frye, 1923).

Within this group of accepted measures we would include the Violence Risk Assessment Guide (VRAG) and the Sex Offender Risk Assessment Guide (SORAG), (Quinsey, Harris, Rice, & Cormier, 2006); Rapid Risk Assessment of Sexual Offender Recidivism (RRASOR, Hanson, 1997); Minnisota Sex Offender Screening Tool – Revised (MnSOST-R, Epperson, Kaul, & Huot 1995); STATIC-99 (Hanson & Thornton, 1999); Sexual Violence Risk – 20 (SVR-20, Boer, Hart, Kropp, & Webster, 1997); Statistical Information on Recidivism (SIR, Nuffield, 1989, 1982; Nafekh & Motiuk, 2002); and the Level of Service [Supervision] Inventory – Revised (LSI-R, Andrews & Bonta, 1995). None of these accepted risk assessment instruments were

originally validated on Aboriginal samples but have subsequently been tested with Aboriginal samples. These instruments will be individually reviewed below. Generally, the findings of this review are that each of these instruments has demonstrated the ability to predict outcomes for Aboriginal offenders.

Level of Supervision Inventory and subsequent revisions

Bonta (1989) used the LSI to score two small samples of Aboriginal (n = 52) and non-Aboriginal offenders (n = 74) to determine if the LSI was predictive of recidivism in offenders from provincial jails. The LSI total score for Aboriginal offenders was not significantly different from that of non-Aboriginal offenders with only two sub-scales approaching statistically significant differences. One sub-scale showed the Aboriginal group scoring higher (Companions sub-scale) while the non-Aboriginal group was higher on the Emotional/Personal sub-scale. Of the 10 sub-scales within the LSI, Criminal History, Education/Employment, Family/Marital, and Alcohol/Drug sub-scales predicted re-incarceration for both groups. The LSI total score predicted misconducts, parole violations, and re-incarceration for both Aboriginal and non-Aboriginal offenders at one-year follow-up. This small study in itself points to the need for larger scale studies to be done.

Using a subsequent revision of the LSI, the LSI-R (Andrews & Bonta, 1995), Holsinger, Lowenkamp, and Latessa (2003) assessed samples of 189 Native Americans and 1,153 non-Native Americans. On the 65 items, sub-scale totals and over-all total scores, Native Americans scored significantly higher than non-Native Americans on 46 items and scale totals. Of those items that significantly differentiated Native Americans from non-Native Americans, only one item, (Ever having been fired from a job), showed non-Native Americans to score higher than Native Americans. Scores such as these indicate greater criminogenic needs, and hence a greater need for specific services for Native Americans.

In their follow-up study just 17 months later, Holsinger, Lowenkamp, and Latessa (2006) showed the LSI-R to have modest predictive validity in a sample of 403 offenders (162 white males, 101 white females, 100 Native American males, & 40 Native American females). The LSI-R was shown to predict “any new arrest” for white males, and white females, but was non-significant for Native American males, and Native American females. However, in the same paper these authors show that LSI-R scores rank with equal accuracy white males, white females,

and Native American males by nominal risk categories (low, low-moderate, moderate, & high) indicating an ability to separate high risk offenders from lower risk offenders.

The research data on juvenile offenders tend to show that the key risk factors are the same for juvenile offenders as they are for adult offenders. Jung and Rawana (1999) tested the Youth Level of Service/Case Management Inventory (YLS/CMI, Hoge & Andrews, 1996), a variation of the LSI adapted for youth offenders, on a sample of 263 youth offenders (173 males, 90 females; 134 Aboriginal, 129 non-Aboriginal). This instrument does not predict recidivism differently for Aboriginal and non-Aboriginal youth as shown by the non-significant two-way interaction between culture and recidivism. All eight sub-scales predicted recidivism in both samples. The authors concluded that culture and gender were inconsequential to the instrument's ability to predict recidivism in youth.

Yessine (2009) tested whether the same risk factors operated in two samples of adjudicated Aboriginal youth (n = 235) and non-Aboriginal adjudicated youth (n = 204). Presenting data on two static factors (criminal history, family, and accommodation [assuming that juveniles have little control over their family and accommodation] and six stable factors (associates, attitudes, education, substance use, financial management, and a measure of risk and needs) Yessine found that the same factors predicted outcome for both groups. It is important to note that of the factors that significantly predicted outcome in these samples, three of them (criminal history, attitudes, & associates – Yessine did not have a personality/temperament measure) are represented in Andrew's "Big Four" predictors for all offenders (Andrews & Bonta, 2006). This is an important finding in itself as it tends to suggest that there is not a disjunction between those central risk factors that predict outcome for both Aboriginal and non-Aboriginal youth and Aboriginal and non-Aboriginal adults.

Statistical Information on Recidivism (SIR) scale

First outlined by Nuffield (1982) the Statistical Information on Recidivism (SIR) scale is a 15 item risk assessment scale developed to assist parole decision making for federally sentenced Canadian offenders. The earliest research on the SIR scale, at that time known as the "Nuffield Scoring System" concluded that the SIR scale was of "some assistance" in predicting release outcome for Aboriginal male offenders (Hann & Harman, 1989). Four years later, a follow-up study by the same authors (Hann & Harman, 1993) was the first specific test of whether the SIR

scale reliably predicted for Aboriginal males.

Using a sample of 271 non-Aboriginal offenders and 243 Aboriginal offenders from a 1983/84 release cohort and employing federal re-incarceration as their recidivism criterion, Hann and Harmon (1993) demonstrated a linear relationship between SIR scale scores and general success rate for both Aboriginal and non-Aboriginal groups. While there were differences in the topography of risk divisions, their analysis found that SIR scores differentiated between the 5 groups of Aboriginal releases in the intended manner – with general success rates starting at 75% for the *very good* risk group and falling steadily, in a linear fashion, to 22% for the *poor* risk group. The authors conclude that "the relationships between the Nuffield risk scores and the general success rates were very similar for both Aboriginal and non-Aboriginal releases" (p. 12) and state that the SIR scale "seems to do comparably well for both the Aboriginal and non-Aboriginal releases" (p. 12). Hann and Harman (1993) conclude that the SIR scale "has been found to be of value for predicting general release risk for Aboriginals. In fact, its predictive accuracy is similar to the predictive accuracy demonstrated by the Nuffield scale when used to predict general release risk for non-Aboriginals" (p. 26).

Nafekh and Motiuk (2002) used a sample of 8,434 federal offenders released from federal institutions between 1995 and 1998 to compare three different scoring techniques for the SIR scale. Broken down into 6,881 male non-Aboriginal offenders, 342 female offenders, and 1,211 male Aboriginal offenders, these authors found that the ROC[3] (Swets et al., 2000) for general recidivism was 0.74 for non-Aboriginal male offenders. As the SIR scale is not generally scored for females and Aboriginal male offenders Nafekh and Motiuk created a proximal analogue (SIR-Proxy) for the SIR scale which showed a significant correlation with recidivism (r = .32) and a ROC of 0.77 in female offenders for general recidivism. In addition, using the same analogue scale, these researchers found a significant correlation (r = .32) with a ROC of 0.68 for general recidivism in Aboriginal male offenders. By way of comparison, it is interesting to note that the most researched and widely used sexual offender risk assessment instrument in the world

[3] Area under the ROC curve (AUC) - The receiver operating characteristic (ROC), or simply ROC curve, plots the sensitivity of a test against (1 – specificity) resulting in a curve that graphically represents test prediction performance across the range of possible scale values. The ROC can also be calculated by plotting the True Positive Rate (TPR) against the False Positive Rate (FPR) across the range of possible scale values. Valid ROC values range from 0.5 indicating chance performance to 1.0 which would indicate perfect prediction.

(STATIC-99, Hanson & Thornton, 1999) only has an ROC of 0.69 as shown by meta-analysis (Hanson & Morton-Bourgon, 2007). Indeed, research has shown that scales with ROC's in the upper 0.6's and lower 0.7's are quite capable of rank ordering offenders according to their recidivism risk. This risk relevant information can then be used to inform decision making about future risk and potential release (Hanson & Morton-Bourgon, 2007).

The SIR scale has considerable limitations when assessing risk for violent and sexual recidivism. The SIR scale contains only one question that specifically addresses sexual offending and only one question that specifically addresses violent offending. Given the structure of the test and that the scale was originally not designed to assess risk of sexual or violent re-offence, it is not surprising that the scale does not predict sexual or violent recidivism as well as tests designed for that purpose. Nafekh and Motiuk (2002) report ROC's of 0.60 & 0.64 for sexual and violence prediction respectively.

Dynamic Factor and Identification Analysis (DFIA)

When offenders first enter federal custody they undergo an intake assessment to determine their level of risk and level of program needs. Brown and Motiuk (2005) studied the dynamic components of this assessment [the Dynamic Factor and Identification Analysis (DFIA)] and found that for both non-Aboriginal men (n = 15,479) and Aboriginal men (n = 2,593) all seven of the risk/need domains predicted readmission to federal custody. This study found that "chronic unemployment, criminal friends, criminal attitudes, impulsivity, [poor] time management, accommodation instability, and drug abuse predicted readmission for Aboriginal offenders to the same degree found in the general offender population" (p. *iv*). Consistent with theory (Personal, Interpersonal, and Community-Reinforcement (PIC-R) model, Andrews & Bonta, 2006) and empirical data (Gendreau, Little & Goggin, 1996) two of these factors are among the "Big Four" predictors (associates [criminal friends] and criminal attitudes) and four of these factors are congruent with the "Central Eight" findings of Gendreau, Little and Goggin (1996) (criminal friends, criminal attitudes, substance abuse, and impulsivity [as it relates to anti-social personality patterns]).

Manitoba Risk Needs Scale

Bonta, LaPrairie, and Wallace-Capretta (1997), reviewed a sample of 903 offenders

divided into non-Aboriginal offenders (*n* = 513), Metis (*n* = 124), "on-reserve" treaty status (*n* = 153) and "off-reserve" treaty status (*n* = 113) First Nations peoples. Using the Manitoba Risk Needs Scale these researchers found that most of the 15 Risk/Need areas predicted reincarceration for the combined group of 390 Aboriginal offenders. The "alcohol and drug" subscale predicted better for Aboriginal offenders than it did for non-Aboriginal offenders. Interestingly, when broken down into sub-groups, there were differences between the three Aboriginal sub-groups in how well a given factor predicted for each group. This would suggest that Aboriginal offenders are not a homogenous group as there are differences between Aboriginal sub-populations. Bonta, et al. conclude that the Manitoba Risk Needs Scale shows predictive validity for Aboriginal offenders and that important risk factors such as substance abuse, criminal peers, and criminal history predict for Aboriginal offenders consistent with theory (Personal, Interpersonal, and Community-Reinforcement (PIC-R) model, Andrews & Bonta, 2006) and empirical findings (Gendreau, Little, & Goggin, 1996). This supports Bonta, LaPrairie, and Wallace-Capretta's (1997) contention that Risk and Need factors are "largely independent of culture and race" (p. 138).

STATIC-99

The STATIC-99 (Hanson & Thornton, 1999) is currently the most widely used actuarial risk assessment instrument in the world and has been shown to reliably predict sexually violent recidivism across a variety of cultures and offender backgrounds (Hanson & Morton-Bourgon, 2007). Replication studies on the STATIC-99 have been conducted on Ethiopian immigrants to Sweden (Sjöstedt & Långström, 2001), sexual offenders from Belgium and the Netherlands (de Vogel, de Ruiter, van Beek, & Mead, 2004; Ducro & Pham, 2006), violent sex offenders in Switzerland (Endrass, Urbaniok, Held, Vetter, & Rossegger, 2009) and a mixed group of offenders from Austria (Rettenberger & Eher, 2006). All studies showed reliable, moderate levels of prediction of sexual risk regardless of cultural background.

Nicholaichuk (2001) administered the STATIC-99 to 109 Aboriginal sexual offenders and 254 non-Aboriginal sexual offenders and reported that the predictive ability of the STATIC-99 was identical for both samples, the ROC being identical in both samples (ROC = 0.67).

A contrary finding

There is, however, one report (Långström, 2004) where neither the RRASOR (Hanson, 1997) nor STATIC-99 (Hanson & Thornton, 1999) was able to differentiate African/Asian sexual or violent recidivists from non-recidivists. Långström reviewed data from three groups of "hands-on" sexual offenders, a group with Nordic cultural identity (n = 1,085), a group with non-Nordic European cultural identity (n = 49), and a mixed group of African/Asian cultural identity (n = 128). Results indicated that sexual recidivism rates for the three sub-groups were not significantly different so a difference in base level of risk is unlikely. As expected, both the RRASOR and the STATIC-99 showed moderate predictive accuracy for sexual reconviction, and both tests were able to accurately predict sexual recidivism in the Nordic and non-Nordic European groups. However, these tests were not able to distinguish recidivists from non-recidivists in the African/Asian group. The authors propose reasons why these tests may not have performed as expected. These reasons included factors reflecting recent immigration from a foreign culture, traumatization, and acculturation problems. Additional probable factors would be the lack of reliable historical data such as criminal history records, documentation of victim types, and the lack of collateral informants when immigrants come from countries that do not have well organized and computerized criminal justice systems.

VRAG, SVR-20 and STATIC-99

Dempsey (2002) used a small sample of 31 Aboriginal and 20 non-Aboriginal male sexual offenders to conduct a file-based review of four different risk assessment instruments. The four tests were the STATIC-99 (Hanson & Thornton, 1999), the Violence Risk Appraisal Guide (VRAG, Quinsey, Harris, Rice, & Cormier, 1998, 2006), the Sexual Violence Risk – 20 (SVR-20, Boer, Hart, Kropp, & Webster, 1997), and the Violent Offender Risk Assessment Scale (VORAS, Howell, Watt, Hall, & Baldwin, 1997). This head-to-head test of four different risk assessment instruments showed that all four were as reliable for Aboriginal sexual offenders as they were for non-Aboriginal sexual offenders. Some caution must be used interpreting the outcome for the VORAS as it was normed on Australian male violent offenders released from institutions and the use of this instrument is not recommended at this time as some experts (Ward & Dockerill, 1999) have argued that there is limited validation of the instrument and methodological issues in the original publication are cause for concern.

If We Choose Not To Use Actuarial Tools With Offenders From Different Cultural Groups, How Should We Assess Risk?

Concerns about cultural differences in the assessment and treatment of various racial and cultural groups are not new (Anastasi, 1988; Starr, 1978; Weekes, Morison, Millson, & Fettig, 1995). The need for better risk prediction of violent behaviours and cultural sensitivity in the assessment and treatment of Aboriginal offenders has long been recognized by the CSC (Correctional Service Canada, 1989). Hence, it is not surprising that policy and decision makers question whether risk assessment technologies validated on non-Aboriginal samples are appropriate for Aboriginal offenders. This is critical given that offenders' risk levels should inform decisions that have an impact on many areas including public safety and personal liberty. The Canadian context adds additional weight to these concerns as Canadian sentencing guidelines, as laid out in the Canadian Criminal Code (C.C.C.), dictate that all offenders be held in "the least restrictive placement" (C.C.C., S. 718.2 (d)).

The question must be asked; "how should we assess risk to reoffend in Aboriginal peoples and other cultural groups should formalized static and dynamic risk assessment not be used?" Hanson & Morton-Bourgon (2007) outline the two possible options, unstructured clinical assessment and structured professional judgement.

Unstructured clinical assessment does not use a risk instrument *per se* as this process does not use an established or agreed-upon list of risk factors prepared in advance. The clinician assesses those risk factors that seem pertinent to the case and there are no agreed-upon weights for these risk factors nor is the order or manner in which these risk factors are combined decided upon in advance. Additionally, each clinician has their own list of favoured risk factors and while there would generally be considerable overlap in the factors used by various assessors, there would be variation of content and procedure across assessments within even the same institution. This process is generally referred to as "clinical judgement" and is based upon "clinical experience". This form of assessment is highly variable and relies upon the clinician's knowledge of the literature, is based upon idiographic characteristics using a process that is by its very nature opaque, non-replicable, and non-verifiable. Clinical judgement has been shown to assess risk little better than chance and is not supported by the research (Menzies, Webster, McMain, Staley, & Scaglione, 1994; Quinsey & Ambtman. 1979; Steadman & Cocozza, 1974).

Structured professional judgement involves the rating of a list of pre-determined risk factors to inform a clinical judgement. However, how much weight to give each of the listed risk factors is

not pre-determined and the final decision on how "risky" an individual is – is determined by the clinical judgement of the evaluator (see Boer et al., 2007). This once again makes the process idiosyncratic, non-transparent, and non-replicable. However, as Hanson and Morton-Bourgon (2007) have noted, "Structured professional judgement has been promoted as providing clinically meaningful case formulations while avoiding the dismal predictive accuracy associated with the unstructured clinical approach" (Douglas, Cox, & Webster, 1999; Hart, 1998, p. 3).

Decisions based upon unstructured clinical judgement are known to be unsound as the research has shown that even experienced professionals consistently overestimate the risk of future violent behaviour in offenders (Steadman & Cocozza, 1974) and that intelligent, untrained, laypeople are capable of the same predictive accuracy in judging risk for future violence as mental health experts (Menzies, Webster, McMain, Staley, & Scaglione, 1994; Quinsey & Ambtman, 1979).

Hanson and Morton-Bourgon (2007) report the results of a large meta-analysis that reviewed a total of 69 separate scientific studies into the nature of risk prediction for sexual offenders. As shown below in Table 4, actuarial risk assessments outperformed both "unstructured clinical assessment" and "structured professional judgment" by a wide statistical margin. In addition, it should be noted that this paper reports on 55 different studies into the predictive accuracy of actuarial risk assessments while the other forms of risk evaluation are much less efficient and much less studied. Succinctly said, there is no question that actuarial methods of risk prediction out-perform clinical methods (Douglas, Cox, & Webster, 1999; Grove & Meehl, 1996; Grove, Zald, Lebow, Snitz, & Nelson, 2000; Hanson & Morton-Bourgon, 2007).

As a result, not using empirically-based risk assessments with First Nations, Métis, Inuit and offenders from other cultural backgrounds risks denying these people the benefits of objective, transparent, replicable, and accountable risk assessment.

Table 4
Comparative Accuracy of Risk Assessment Methodologies: Sexual Offenders (From Hanson and Morton-Bourgon, 2007)

Hanson & Morton-Bourgon (2007)	Subjects	Studies	*d*
Unstructured clinical assessment	1,723	9	.43
Structured professional judgement	844	5	.42
Actuarial risk scales (for sexual offenders)	14,160	55	.70

Note. Results are provided in terms of "Effect Size", noted as "*d*", a measure of mean difference between two populations or samples.

Responding to Cultural Differences: Responsivity

The Responsivity Principle, as outlined by Andrews and Bonta (1994, 2006), states that treatment and correctional programming must be delivered in such a way that offenders can benefit from it, taking into account each offender's abilities, cultural needs, experiences, and learning style. For example, having an illiterate offender in a psycho-educational group that uses an exercise book with written homework is not efficient, effective, nor fair to the offender. Interventions that apply the responsivity principle allow for the development of suitable interventions that take into account the individual experiences, insights, culture, and heritage of Aboriginal peoples. The primary avenue of access to this technology resides in the Risk-Needs-Responsivity (RNR) model (Andrews & Bonta, 2006) of offender rehabilitation. This rehabilitation model has been used in recent years to guide interventions in the field of corrections throughout the world and has resulted in reduction of recidivism rates and safer communities (Ward, Melser, & Yates, 2007). The Responsivity Principle requires that accommodations be made to present treatment materials in a way that is understandable and culturally relevant to the participant. For First Nation, Métis, and Inuit offenders, this could include consultations with Elders, taking into account special responsivity factors such as the increased incidence of Foetal Alcohol Spectrum Disorders (Kysan & Moore, 2005; Square, 1997; Szemko, Wood, & Thurman, 2006), and generally placing greater emphasis upon group adhesion and traditional values. There is reason to consider the Risk, Needs, Responsivity (RNR) model as a fruitful approach for all offenders as a recent meta-analysis found that

correctional programs that adhered to the RNR model showed the largest reductions in sexual and general recidivism (Hanson, Bourgon, Helmus, & Hodgson, 2009).

There is no question that accommodation should be made for Aboriginal culture and experience. Indeed, Canadian law clearly states that the nature and context of Aboriginal life and the cultural experiences of Aboriginal people must be taken into consideration when reviewing criminal sanctions and interventions (*R. v. Gladue, 1999)*. The place for these differences to be explored and used to promote healing and safe reintegration of eligible offenders is in the intervention, supervision, and treatment programs tailored for the Aboriginal experience (Andrews & Bonta, 2006). This would ensure that programs and other correctional interventions take into account Aboriginal culture and experience, using examples and references that are reflective of the rich and various cultural backgrounds of Aboriginal peoples. Research on factors related to the successful reintegration of Aboriginal offenders has been undertaken in partnership with Aboriginal communities (Heckbert & Turkington, 2001) and this path may be one of the most promising.

Summary

This paper has presented a number of validated and reliable risk assessment tools that assess risk in Aboriginal offenders as well as they do in non-Aboriginal offenders. Table 5 summarises the tools and the outcome measures they assess.

Table 5
Risk Assessment Instruments That Have Been Shown to Reliably Predict Risk of Recidivism in Aboriginal Offenders

Name of Risk Tool	What it assesses	Reference
Level of Service Inventory – Revised (LSI-R)	Risk of general recidivism using both static and dynamic factors	Bonta & Andrews, 1995
SIR Scale	Risk of general recidivism	Nuffield, 1982 Nafekh & Motiuk, 2002 Hann & Harman, 1993
Dynamic Factors Intake Assessment (DFIA)	Dynamic risk factors that predict general recidivism	Brown & Motiuk, 2005
Manitoba Risk Needs Scale	Risk of general recidivism and treatment/intervention needs	Bonta, LaPrairie, & Wallace-Capretta, 1997
STATIC-99	Risk of sexual recidivism for sexual offenders	Nicholaichuk, 2001 Dempsey, 2002
Violence Risk Assessment Guide (VRAG)	Risk of violent and sexual recidivism (Note: PCL-R embedded in this instrument)	Dempsey, 2002
Sexual Violent Risk-20 (SVR-20)	Risk of sexual and violent recidivism (Note: PCL-R embedded in this instrument)	Dempsey, 2002

Within correctional populations, accurately estimating the potential of future violence and other recidivism is necessary in order to manage risk and properly develop plans for the safe return of eligible offenders from custody to their communities. The prediction of dangerousness and future violence is a difficult, complex, and controversial issue in the behavioural sciences (Borum, 1996).

The existing literature suggests, without exception, that there are minimal differences between the major risk factors used to assess risk in non-Aboriginal offenders and Aboriginal offenders (Andrews & Bonta, 1995; Gendreau, Little, & Goggin, 1996; Nuffield, 1982; Rugge, 2006). The types of factors that are used to estimate risk, such as those listed in Table 3, are not determined by culture but reflect personal history. There is no scientific reason to assume that an Aboriginal offender would demonstrate a different risk pattern given the same risk markers as a non-Aboriginal offender (Andrews & Bonta, 1994, 2006). This being said, it is prudent and within the spirit of Canadian correctional law (R. V. Gladue, 1999) to recommend ongoing research review of assessment tools in the context of cultural needs to ensure these needs are addressed. CSC currently engages in a program of ongoing reviews and re-evaluations of its risk assessment measures to ensure validity and efficiency. Some commentators are of the opinion that these re-validations should be done every two years (Wormith & Gladstone, 1984).

Research studies have demonstrated little empirical support for the development of culture specific risk assessment tools (Allen & Dawson, 2004; Skelton et al., 2006). This finding is most likely due to the high degree of similarity in offenders' responses and characteristics regardless of culture and findings which indicate that Aboriginal responses vary within the various Aboriginal groups (Bonta, Laprairie, & Wallace-Capretta, 1997); indicating that Aboriginal sub-groups do not appear to be homogenous (Cooke, Kosson, & Michie, 2001; Weekes et al., 1995).

As Rugge (2006) emphasizes in her paper, it is important that we do not try to "re-invent the wheel". Future research on risk assessment should be built upon the firm foundation of what is already known. Research has had no success in distinguishing differential risk factors based upon cultural groups. This is an important finding as an "Aboriginal Specific" risk assessment instrument would not only have to predict violent or sexual reoffence within a First Nations, Métis, or Inuit sample but to be of any utility, it would have to predict violent or sexual reoffence significantly better than the tools already available. This would be, indeed, a high hurdle.

In conclusion, it should be noted that the authors do not recommend wholesale, uncritical adoption of all risk assessment instruments for use with Aboriginal males. Rather, we recommend a program of ongoing scientifically rigorous research comparing the relative and differential effectiveness of these measures between cultural groups. Should some theoretical or empirical variable be found that differentially enhances the accuracy, validity, or reliability of an Aboriginal or culturally based risk assessment, this variable should be thoroughly explored by research and tested empirically. To date, no such variable has come to light.

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