_____ **Research Report** _____

Use of the Custody Rating Scale
with Male Offenders

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The Custody Rating Scale as Applied to Male Offenders

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Executive Summary

Key words: *Custody Rating Scale, initial security classification*

Periodic revalidations of instruments used in assessing and classifying offenders are necessary given that offender populations can change over time. It is important to ensure that instruments continue to be valid and to measure what they purport to measure despite changes in the populations to which they are applied. This is particularly true for instruments used in security classification as this classification impacts penitentiary placement and can influence access to programs and interventions, as well as conditional release decisions.

In determining offenders' initial security classification, CSC uses the Custody Rating Scale (CRS), which measures offenders' institutional adjustment and security risk. The CRS is a 12-item empirically-derived actuarial instrument that provides a security classification recommendation which is then considered together with the clinical judgment of experienced and specialized professional staff and, in some cases, psychological assessment.

Given changes in the offender population since the CRS's development, a revalidation was undertaken. The study was limited to male offenders and included a total of 11,438 CRSs completed between January 1, 2008 and December 31, 2009.

Analyses demonstrated that the CRS continues to be appropriate for use in the determination of initial security classifications. Offenders receiving higher CRS security classification recommendations tended to be higher risk and less well adjusted than their counterparts receiving lower recommendations. CRS recommendations were consistent with ratings on measures of risk, need, motivation, reintegration potential, and, for non-Aboriginal offenders, scores on a measure of the likelihood of recidivism. CRS recommendations were also predictive of involvement in minor and major institutional incidents, conviction of serious institutional charges, and the granting of discretionary release (used as a measure of manageability of risk).

Though slightly higher proportions of Aboriginal offenders than of non-Aboriginal offenders received higher CRS security classification recommendations, the CRS was able to predict involvement in serious institutional misbehaviours and the granting of discretionary release at comparable rates for offenders of each ethnicity. This pattern suggests that the difference in security classification recommendation distributions for Aboriginal and non-Aboriginal offenders reflect underlying differences in risk rather than over-classification. Results were therefore supportive of the continued use of the CRS with Aboriginal offenders.

Finally, whether domains not included in the CRS are also useful predictors of institutional adjustment and security risk was examined. Measures of antisocial attitudes and antisocial associates were found to be related to involvement in institutional misbehaviour. Relationships were sufficiently strong to indicate that if and when modifications are made to the current security classification approach, there may be value in considering the inclusion of measures of antisocial attitudes and antisocial attitudes, as well, perhaps, as other measures.

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Introduction

Initial security classification is one of the most important decisions made upon an offender's admission to federal correctional custody. Classification impacts penitentiary placement (CSC, 2010a) and can influence access to programs and interventions (CSC Reintegration Programs Division, 2009), as well as temporary absence, work release, and discretionary release decisions (Motiuk, 1997). Given its potential consequences, it is key that security classification decisions be reached in a manner that is reliable, equitable, and transparent. To meet this goal, most jurisdictions, including the Correctional Service of Canada (CSC), use actuarial instruments together with clinical appraisals by trained professional staff.

However, since actuarial instruments are based on the characteristics of the sample used to develop them, and carceral populations change over time, it is important that these instruments be periodically re-examined to ensure that they continue to perform as intended (Austin, 2003). For this reason, a revalidation of the Custody Rating Scale (CRS; Solicitor General of Canada, 1987), the empirically-derived actuarial instrument used by CSC in its initial security classification procedure for all offenders, was undertaken.

Security Classification

According to the *Corrections and Conditional Release Act* (CCRA; 1992), CSC's guiding legislation, all offenders held in federal custody are to be accorded a security classification of minimum, medium, or maximum security. Classification determinations must reflect an offender's institutional adjustment, escape risk, and risk to the public in the event of an escape, all while ensuring the offender the restrictive measures to which the offender is subjected are appropriate and consistent with public safety.

The *Corrections and Conditional Release Regulations* (CCRR; 1992) sets out a number of specific factors that must be considered in evaluating the three broad areas outlined in the CCRA, such as severity of current offence, sentence length, age at the time of sentencing, street stability, and alcohol and drug use. In keeping with *R.* v. *Gladue* (1999), CSC's policy documents also require that unique systemic or background factors that may have influenced Aboriginal offenders' lives be considered in determining security classifications for offenders of Aboriginal ethnicity (CSC, 2010a; 2010b).

In keeping with the extensive body of empirical literature that demonstrates that the accuracy of decision-making is increased when actuarial instruments are used (see Ægisdóttir, 2006), CSC uses actuarial instruments as a principal component in the classification process. At admission – including re-admission after a suspension or revocation – security classification is informed by the CRS. Security classifications are updated periodically to capture changes in an offender's institutional behaviour and risk[1] and are informed by the Security Reclassification Scale (SRS; Luciani, Taylor, & Motiuk, 1998) and the Security Reclassification Scale for Women (SRSW; Blanchette, 2005) for male offenders and their female counterparts respectively. All three of these instruments were constructed to reflect factors empirically demonstrated to be associated with the three areas dictated by legislation.

That being said, at times, additional case-specific factors that are relevant to security classification arise and it is key that a mechanism be in place to capture these factors in reaching classification decisions. Determining security classification through both the application of an actuarial instrument and the completion a clinical appraisal allows for the higher levels of predictive accuracy associated with the use of actuarial instruments while simultaneously ensuring that all relevant case-specific factors are considered. According to CSC policy, during both the initial security classification and subsequent classification reviews, the results of actuarial instruments are considered jointly with the clinical judgment of experienced and specialized professional staff, and, in some cases, psychological assessments (CSC, 2010a; 2010b). In cases where the staff's judgment diverges from the instrument's recommendation, the staff member documents what factors have led him or her to submit a classification recommendation different than that of the instrument. The actual classification applied to the offender reflects the Institutional Head's decision based on the results of the CRS, the staff member's clinical judgment, and the psychological assessments, if applicable.

The Custody Rating Scale (CRS)

The CRS was developed and piloted starting in 1987 and was fully implemented as part

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[1] Legislation requires that these reviews be conducted at a minimum of annually, in most cases (CCRA, 1992). That being said, offenders serving a life sentence for first or second degree murder undergo security reviews bi-annually, while those classified as minimum security undergo reviews if their behaviour suggests this level is no longer appropriate. In addition, CSC's internal policy documents require that security reviews of women offenders classified as maximum security be conducted at a minimum of semi-annually in order to facilitate their transition to medium security as soon as is appropriate (CSC, 2010b).

of the initial security classification process in 1991 (Luciani, Motiuk, & Nafekh, 1996; Porporino, Luciani, Motiuk, Johston, & Mainwaring, 1989). Since this time, a number of validation studies have been completed (e.g., Blanchette, Verbrugge, & Wichmann, 2002; Blanchette & Motiuk, 2004; Grant & Luciani, 1998; Luciani et al., 1996). These reports detail the CRS's reliability, concurrence rates between CRS recommendations and actual placement, the extent of convergence between CRS recommendations and conceptually related measures, and the ability of CRS recommendations to predict institutional incidents, escapes, the granting of discretionary release, and post-release outcome. Overall, study results provided support for the continued use of the CRS with Aboriginal and non-Aboriginal offenders of both genders.

Critiques of the Custody Rating Scale

About a dozen years after the CRS's implementation, governmental (e.g., Auditor General of Canada, 2003; Bonta, Hanson, & Yessine, 2004; Canadian Human Rights Commission, 2003; Office of the Correctional Investigator, 2006) and non-governmental stakeholders (e.g., Canadian Association of Elizabeth Fry Societies, 2004), as well as academics (e.g., Webster & Doob, 2004), began to argue that the CRS was not as reliable and valid as had originally been believed. Though some of these criticisms were general, many authors contended that the CRS's reliability and validity were questionable when applied to specific sub-groups of offenders, namely women and Aboriginal offenders.

Some authors (e.g., Bonta et al., 2004; Webster & Doob, 2004) have contended that in examinations of the CRS's reliability and predictive validity, researchers' conclusions have been more positive than their studies' results support. Critics have also highlighted that some studies (e.g., Blanchette et al., 2002) have demonstrated that certain CRS items are not statistically predictive or are only weakly predictive of the outcomes of interest for certain groups. Though the inclusion of these items is reflective of legislative requirements, it has been suggested that the requirement that the factors be considered in reaching security classification decisions does not, in turn, require that the factors be included within the actuarial tool used for this purpose (Bonta et al., 2004). These authors put forward that the consideration of these factors by professional staff as part of their clinical appraisal would meet legislative requirements and be more statistically appropriate.

In their review of the CRS, Bonta and his colleagues (2004) pointed out that the body of

literature on the correlates of institutional misconduct has continued to develop in the nearly quarter-century since the CRS's 1987 development. Specifically, they contended that the current body of knowledge in this area would suggest that a small number of items within the CRS (e.g., sentence length and severity of current offence) are poor predictors of institutional adjustment and that other, stronger predictors of institutional adjustment have been overlooked. For instance, in a 1997 meta-analysis, Gendreau, Goggin, and Law identified antisocial attitudes and antisocial peers as particularly strong predictors of institutional misconduct – neither of which is included in the CRS. In addition, though it was not included in the meta-analysis conducted by Gendreau and his colleagues, there has recently come to be a research focus on the possible association of gang affiliation or membership with institutional misconduct. So far, studies suggest that gang membership or affiliation is indeed associated with greater involvement in misconducts, especially those of a violent nature (e.g., Gaes, Wallace, Gilman, Klein-Saffran, & Suppa, 2002; Griffin & Hepburn, 2006; Huebner, 2003).

Critiques specific to Aboriginal offenders

Though much of the research on the CRS conducted by CSC has included a disaggregation of findings by Aboriginal ethnicity and found satisfactory results for both groups (e.g., Luciani et al., 1996; Blanchette & Motiuk, 2004), it is undeniable that, relative to non-Aboriginal offenders, greater proportions of Aboriginal offenders are classified to medium and to maximum security. Considering both initial classification and reclassifications (i.e., classifications involving the CRS, SRS, and SRSW), 68.2% and 63.8% of Aboriginal and non-Aboriginal offenders respectively are classified to medium security, and 17.7% and 14.7% are classified to maximum security (Public Safety Canada, 2010). A recent report on federal corrections for Aboriginal offenders commissioned by the Office of the Correctional Investigator summarized findings specific to the CRS (Office of the Correctional Investigator, 2007, in Mann, 2009) and indicated that relative to their non-Aboriginal counterparts, Aboriginal offenders were both more likely to received a CRS recommendation of medium or maximum security and more likely to be ultimately classified to a higher security level than their CRS recommendation.

Certain stakeholders (e.g., Office of the Correctional Investigator, 2007) have argued that the higher CRS recommendations of Aboriginal offenders and their over-representation at higher levels of security represent over-classification. It has also been contended that the classification tools used by CSC are "culturally insensitive" (Office of the Correctional Investigator, 2008, p.

11) and introduce a "systemic bias" (Office of the Correctional Investigator, 2006, p. 23) against Aboriginal offenders. However, it is important to distinguish between *over-classification* and *over-representation*. Though Aboriginal offenders are over-represented at higher levels of security, this over-representation only constitutes over-classification if the Aboriginal offenders' levels of risk do not support their security classification. Indeed, a considerable body of literature demonstrates both that Aboriginal offenders tend to have higher levels of many factors associated with increased risk of recidivism (e.g., Brzozowksi, Taylor-Butts, & Johnson, 2006; Finn, Trevethan, Carriere, & Kowalski, 1999; Holsinger, Lowenkamp, & Latessa, 2003; Moore, 2003; Moore, Trevethan, & Conley, 2004) and that these risk factors are similarly relevant for Aboriginal and non-Aboriginal offenders (e.g., Bonta, LaPrairie, & Wallace-Capretta, 1997; Bonta, Lipinski, & Martin, 1992; Rugge, 2006). This pattern suggests that a possible alternative explanation for the over-representation of Aboriginal offenders at higher levels of security is that these classifications are reflective of differences in the risk of recidivism of Aboriginal and non-Aboriginal offenders (see Rugge, 2006, for a more in-depth presentation of this argument).

A recent revalidation of the Security Reclassification Scale explicitly examined this question and found that though there were very few differences in the reliability and validity of the scale for Aboriginal and non-Aboriginal offenders, in the few instances where small differences were present, the scale was actually more predictive for Aboriginal offenders (Gobeil, 2008). The author concluded that data derived from over 30,000 security reclassification reviews did not provide any evidence of over-classification of Aboriginal offenders. However, this earlier study focused solely on security reclassification reviews and did not examine initial security classification decisions.

That said, it is important to acknowledge that even if over-classification is not occurring, reducing the over-representation of Aboriginal offenders (and closing the correctional gap between Aboriginal and non-Aboriginal offenders in general) is nonetheless of great importance. CSC has identified a greater capacity to provide interventions to Aboriginal offenders as one of its strategic goals for several consecutive years (CSC, 2009), and is working to close the correctional gap between Aboriginal and non-Aboriginal offenders

The Present Study

As such, the focus of the present study is an examination of the extent to which the CRS continues to be appropriate for use in the initial security classification of both Aboriginal and non-Aboriginal male offenders. As previously mentioned, the periodic revalidation of any

actuarial instrument allows an examination of the extent to which the instrument continues to be reliable and valid given changes in an offender population (Austin, 2003).

The revalidation of the CRS will include an examination of the extent to which its recommendations concur with other theoretically relevant data and of the ability of the scale's recommendation to predict involvement in institutional incidents, escapes and escape-related behaviours (if base rates allow), the granting of discretionary release, and post-release outcome. The ability of actual security classifications to predict these outcomes will also be examined. Comparisons of results by ethnicity will shed light on the question of whether the CRS is over-classifying Aboriginal offenders. Given that the CRS has been critiqued as failing to include items reflective of constructs that have recently been established as predictive of institutional adjustment (e.g., antisocial attitudes, antisocial peers), ratings in these areas will also be assessed for their ability to predict outcomes. Similar ratings that overlap with those already present in the CRS (e.g., substance abuse) will also be considered, given that the manner of measuring these constructs may also have evolved since the implementation of the CRS.

Method

Sample

The study sample corresponded to 11,438 CRSs completed with male offenders between January 1, 2008 and December 31, 2009. Because offenders could be admitted more than once during this time period (and therefore have more than one CRS), these corresponded to 10,720 male offenders. Given the nature of the research questions in this project, male offenders were identified as Aboriginal ($n = 2{,}174$; 20%) or not ($n = 8{,}546$; 80%). The Aboriginal category was comprised of those offenders who reported their ethnicity at intake as being First Nations (i.e., North American Indian), Métis, or Inuit. The non-Aboriginal category comprised all other offenders, including those whose ethnicity was not provided ($n = 53$).

Given that the selection strategy used in this study was exhaustive, and all CRSs completed with male offenders in the relevant time frame were included, the group of CRSs represent a population rather than a sample. Therefore, inferential statistics were inappropriate and results are discussed in terms of their practical rather than statistical significance.

Data

For each individual, additional information was obtained from the Offender Management System, CSC's computerized database of offender information. In particular, information was obtained on each CRS, including item scores, subscale totals, and scale recommendation, as well as on the actual security classification decision. In addition, data were drawn on the offenders' demographic characteristics; their risk, need, motivation, and reintegration potential ratings; their involvement in institutional incidents, institutional charges, and escapes; their releases; and, their post-release outcomes. Finally, the offender's Dynamic Factor Identification and Analysis (DFIA) domain need ratings and indicator ratings related to gang membership were also included.

Measures

The CRS is comprised of a total of 12 items divided into two subscales: Institutional Adjustment (five items) and Security Risk (seven items). Each scale item is assigned a weight according to policy considerations and empirical data stemming from the development and

validation studies, and the weighted items are then summed to produce subscale total scores. Cutoff scores apply to each subscale and correspond to minimum, medium, or maximum security classification. The subscale score corresponding to the higher classification determines the overall CRS security classification recommendation (CSC, 2010a).

Actual security classification decisions corresponding to each CRS were also examined. These correspond to the security classification approved by the Institutional Head based on the Parole Officer's clinical appraisal of the case, psychological assessments (in certain cases), and the results of the CRS.

Risk, need, motivation, and reintegration potential are all components of the Offender Intake Assessment, a comprehensive assessment completed by the Parole Officer at the start of an offender's sentence (CSC, 2007a, 2007b).[2] All four measures are assessed as *low*, *moderate*, or *high* based on consideration of specific items. Risk is rated by the Parole Officer based on consideration of static criminal risk factors relating to criminal history, offence severity, and sex offence history. Need is also rated by the Parole Officer and represents his or her impression of the offender's overall dynamic needs in seven specific domains: employment, marital / family, associates / social interactions, substance abuse, community functioning, personal / emotional orientation, and attitudes. (These seven domains comprise the DFIA, which will be discussed later.) The assessment of motivation reflects the staff member's professional judgment regarding the extent to which the offender is self-motivated and will actively address problem areas and complete the programs and interventions outlined in his or her correctional plan. Reintegration potential is calculated automatically by the Offender Management System based on other information gathered as part of the Offender Intake Assessment. For male non-Aboriginal offenders, reintegration potential is calculated from scores on the CRS; the Statistical Information on Recidivism – Revised 1 scale (Nuffield, 1982), a measure of potential recidivism; and, the risk rating. For women and Aboriginal offenders, reintegration potential is calculated from CRS scores, the risk rating, and the need rating.

The DFIA domain ratings referred to earlier as being components of the need rating were also included, as were the indicator ratings relating to gangs. Each of the seven DFIA domains – employment, marital / family, associates / social interaction, substance abuse, community

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[2] Some of these are re-assessed throughout the offender's sentence, but the original assessment is of most interest in this context as analyses were based on the assessments occurring closest in time to the completion of the CRS.

functioning, personal / emotional orientation, and attitude – is comprised of numerous individual indicators that are assessed as being absent or present by the Parole Officer. Taking these indicators into account, the Parole Officer then assigns each domain a rating ranging from being asset to community adjustment to having a need for improvement.

In September 2009 (within the time period from which CRSs were drawn for inclusion in this study), the Dynamic Factor Identification and Analysis – Revised (DFIA-R) was implemented. This revision involved a reduction of the number of indicators, changed wording for certain indicators, and a change in the rating scale for the domain need ratings. Integration of the domain ratings from prior to and after the implementation of the revised measure proceeded according to the method supported by Zakaria and Ryan's (in preparation) work, while the integration of the gang-related indicators from prior to and after implementation was in keeping with Gileno and Scott's (in preparation) analysis of the equivalence of the indicators from each version. Both of the approaches ensured that the data from prior to and after implementation could be appropriately and meaningfully combined in analyses.

Finally, institutional incidents and institutional charges were both included as complementary indices of institutional behaviour. The measures are related but not identical, and the inclusion of two separate indices of institutional behaviour facilitated comparisons with the results of other examinations. Institutional incidents were categorized as minor or major. Minor incidents included damage to government or personal property, possession of unauthorized items, information technology incidents, theft, fire, minor disturbance, disciplinary problems, and being under the influence. Major incidents included murder, hostage-taking, major disturbances, fights and assaults, sexual assaults, possession and transportation of contraband, and escape-related incidents.

When institutional charges are laid, they are categorized as minor or serious based on their severity (rather than on the type of behaviour leading to the charge) and the institutional categorizations were retained in this report. Only charges where the offender was found guilty in institutional court were considered. Charges included disobeying rules and orders, refusal to work, being in a prohibited area, theft and possession of stolen property, possession of an unauthorized item or contraband, gambling, fighting, escaping or assisting in an escape, using intoxicants, and failure to provide a urine sample.

Analytic Approach

A series of analyses were conducted focusing on sample and scale descriptives, consistency between scale classification recommendations and actual security decisions, consistency between scale recommendations and conceptually related measures (risk, need, motivation, and reintegration potential), and the CRS, its subscales, and the actual security classification's ability to predict institutional adjustment, escapes, discretionary release, and post-release outcome. The DFIA domains and gang indicators' associations with these outcomes of interest were also examined. Fixed follow-up periods were used for the latter two groups of analyses.[3]

Notably, though they are commonly included in reports of scale validations, analyses of internal consistency *were* not completed as part of this examination. All measures of internal consistency focus on the extent to which scale items are cohesive or measure the same thing, yet items within the CRS as a whole and within its two subscales clearly do not measure the same construct. These items are simply expected to be predictive of the same outcomes. Moreover, CRS data are not well suited for parametric correlational analyses given that not all values are possible for each item (see CSC, 2010b) – that is, though data for the items appear continuous given the presence of minimum and maximum values, they are not. Instead of proceeding with inappropriate internal consistency analyses, individual scale items were included in the predictive validity analyses in order that their independent contributions could be evaluated.

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[3] For many analyses, dichotomized or categorical versions of variables are used over continuous versions (e.g., CRS security classification recommendations rather than CRS scores) given that this is how they are used in practice. For other variables, dichotomization is used to correct for considerable skew (e.g., whether or not an incident occurred as opposed to the number of incidents occurring). It is important to note that this dichotomization of underlying data, however, results in a deflation in the magnitude of the measures of association reported in this report (see Cohen, 1983). In other words, many of the associations in this report are likely under-estimated.

Results

Sample Descriptive Information

A total of 11,438 CRSs (corresponding to 10,720 individual offenders) were completed with male offenders in the two year period between January 1, 2008 and December 31, 2009. Of these, 9,088 (corresponding to 8,546 individuals) involved non-Aboriginal offenders, while 2,350 (corresponding to 2,174 individuals) involved Aboriginal offenders. Table 1 presents further details on the ethnicity of offenders in each group. Further, on average, Aboriginal offenders were younger ($M = 33$ years; $SD = 9.7$) than their non-Aboriginal counterparts ($M = 36$ years; $SD = 11.4$) at the time of CRS completion.

Table 1

Ethnicity

	Percentage (Number) of Offenders	
Ethnicity	Aboriginal	Non-Aboriginal
North American Indian	72 (1,556)	
Métis	24 (519)	
Inuit	4 (93)	
White		82 (6,992)
Black		9 (763)
Latin American		1 (91)
Asian / East Indian		6 (498)
Other / Unknown		2 (202)

Note. $N_{\text{Aboriginal}} = 2,174$. $N_{\text{Non-Aboriginal}} = 8,546$. The 'other/unknown' ethnicity category corresponds to Offender Management System entries of 'other' or 'unknown'. No specified ethnicities were collapsed into this category.

Most Aboriginal and non-Aboriginal (96% of each; $n = 2,087$ and $n = 8,204$ respectively) offenders were serving determinate sentences; the remainder were serving indeterminate sentences (i.e., life sentences or dangerous offender designations). For those serving determinate sentences, the average sentence length for Aboriginal and non-Aboriginal offenders was of 3.6 years ($SD = 2.7$) and 3.9 years ($SD = 3.2$) respectively.

Table 2 presents a distribution of the offences for which these offenders were convicted.

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Overall, a greater percentage of Aboriginal offenders (70%) than of non-Aboriginal offenders (58%) were convicted of at least one violent offence. In turn, similar percentages of Aboriginal and of non-Aboriginal offenders received at least one conviction for a non-violent offence (74% and 75% respectively). Other than the 'other non-violent offence' category, which includes many such offences as failure to attend court or unlawfully at large, the most common offences were property offences, robbery, assault (for Aboriginal offenders) and other violent offences; with the exception of the assault category, these patterns were similar for both groups of offenders.

Table 2

Offences of Conviction

Offence Category	Percentage (Number) of Offenders			
	Aboriginal		Non-Aboriginal	
Violent Offences				
Homicide & Attempted Homicide	8	(163)	4	(319)
Sexual Offences	13	(283)	10	(807)
Robbery	24	(525)	24	(1,993)
Assault	24	(510)	13	(1,141)
Other Violent Offences	27	(576)	28	(2,403)
Non-Violent Offences				
Drug Offences	7	(150)	11	(973)
Property Offences	43	(937)	48	(4,042)
Other Non-Violent Offences	64	(1,385)	63	(5,378)

Note. $N_{\text{Aboriginal}} = 2,163$. $N_{\text{Non-Aboriginal}} = 8,475$. Offence data were missing for 11 Aboriginal and 61 non-Aboriginal offenders. Percentages sum to more than 100 because many offenders were convicted of more than one type of offence.

CRS Descriptive Information

Though each CRS item is assigned a numerical score, possible scores do not represent continuous values for each item – that is, for certain items, only specific scores are possible within the range (see CSC, 2010a). As such, calculating mean item and subscale total scores was not appropriate, and instead, the procedure followed in Blanchette et al. (2002) was followed.

For both the Aboriginal and non-Aboriginal groups, scores for each item were split into low and high scores. Any value falling below the total (i.e., Aboriginal and non-Aboriginal) group's median score on the item was assigned to the low group; those falling above were assigned to the high group. However, given the highly skewed distribution for certain items, this procedure did not always result in evenly-numbered low and high groups.

Table 3 presents the distribution of cases with scores lower and higher than the median on each of the CRS subscales' component items. In contrasting Aboriginal and non-Aboriginal offenders, different distributions were apparent for most items. For only one item (s*entence length*) was there a greater proportion of Aboriginal than of non-Aboriginal offenders in the low score group, and in this case, the difference was only three percentage points. For the remaining items, greater proportions of Aboriginal than of non-Aboriginal offenders had high scores on each item. The difference was greatest (25 percentage points) for the *alcohol / drug use* item included within the Institutional Adjustment subscale.

Table 3

Distribution of High and Low Scores on CRS Items

CRS Subscale Items	Percentage of Scores			
	Aboriginal		Non-Aboriginal	
	Low	High	Low	High
Security Risk Subscale				
Number of prior convictions	49	51	59	41
Most serious outstanding charge	78	22	80	20
Severity of current offence	31	69	39	61
Sentence length	79	21	76	24
Street stability	41	59	60	40
Prior parole / statutory release	48	52	56	44
Age at first federal admission	40	60	52	48
Institutional Adjustment Subscale				
History of institutional incidents	33	67	39	61
Escape history	75	25	85	15
Street stability	42	58	61	39
Alcohol / drug use	29	71	54	46
Age at time of sentencing	49	51	62	38

Note. $N_{\text{Aboriginal}} = 2{,}350$. $N_{\text{Non-Aboriginal}} = 9{,}088$

For slightly more than a quarter of the full population of cases (29%), the CRS produced a recommended classification of minimum security. For nearly three-fifths of cases (59%), the recommended classification was medium security. Finally, 12% corresponded to maximum security.[4] The distribution of security classifications differed by ethnicity (see Table 4). Relative to non-Aboriginal offenders, the CRS produced maximum security recommendations for a greater proportion of Aboriginal offenders and minimum security recommendations for a lower proportion of Aboriginal offenders. In fact, the percentage of Aboriginal offenders

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[4] The distribution of overall recommendations does not parallel the distribution of security classifications of incarcerated offenders at a given time point (e.g., Public Safety Canada, 2010) because offenders' security classifications are periodically reviewed and possibly changed after admission (CSC, 2010b).

recommended to minimum security was about half the corresponding percentage of non-Aboriginal offenders.

Table 4

Distribution of CRS Subscale and Overall Security Classifications

Security Classification	Percentage (Number) of Offenders	
	Aboriginal	Non-Aboriginal
Security Risk Subscale		
Minimum Security	19 (454)	34 (3,092)
Medium Security	78 (1,843)	64 (5,822)
Maximum Security	2 (53)	2 (174)
Institutional Adjustment Subscale		
Minimum Security	78 (1,8440	86 (7,809)
Medium Security	8 (184)	5 (441)
Maximum Security	14 (322)	9 (838)
Overall CRS Classification		
Minimum Security	17 (407)	32 (2,923)
Medium Security	67 (1,583)	57 (5,191)
Maximum Security	15 (360)	11 (974)

Note. $N_{\text{Aboriginal}} = 2{,}350$. $N_{\text{Non-Aboriginal}} = 9{,}088$. Percentages may not sum to 100 due to rounding.

Table 4 also presents the distribution of classifications corresponding to each of the CRS subscales. As mentioned, the two subscales produce independent security classification recommendations, and the actual CRS security classification recommendation corresponds to the higher of these. As can be seen, for both Aboriginal and non-Aboriginal offenders, the Institutional Adjustment subscale most frequently corresponded to a minimum security classification, with over three-quarters of CRSs falling into this category. That said, the Institutional Adjustment subscale classifications also identified a group of CRSs corresponding to maximum security. In turn, the Security Risk subscale resulted in relatively few maximum security classifications, but did differentiate to a greater extent than the Institutional Adjustment subscale between minimum and medium security. Therefore, the total number of CRS maximum security classification recommendations represents just slightly less than the sum of

the numbers corresponding to a maximum security classification for each of the two subscales. Notably, a follow-up analysis revealed that in relatively few cases did both subscales correspond to a maximum security classification.

CRS Recommendation and Actual Decisions

The CRS recommendation, the results of psychological assessments and the Parole Officer's professional judgement are considered together in reaching an actual security classification decision; therefore, final security classification decisions are not necessarily consistent with CRS recommendations. As such, the extent to which actual security classification decisions and CRS classification recommendations were consistent was examined.

As can be seen in Table 5, the rate of concordance between CRS recommendations and actual security classification decisions was of 77% for Aboriginal offenders and 72% for non-Aboriginal offenders. Patterns of inconsistencies were similar for both groups. The actual security classification was higher than the CRS recommendation in 12% of cases (or 52% of inconsistent cases) for Aboriginal offenders and in 15% of cases (or 55% of inconsistent cases) for non-Aboriginal offenders. Notably, for both Aboriginal and non-Aboriginal offenders, actual classifications tended more toward medium security than did the CRS recommendations. In other words, there were fewer actual security classifications to both minimum and maximum security than were recommended by the CRS. Indeed, the number of cases where a maximum security classification was ultimately decided upon was about two-thirds of the number so recommended by the CRS.

Table 5

CRS Recommendations and Actual Security Classification Decisions

	Actual Security Classification							
	Min.		Med.		Max.		Total	
CRS Recommendation	%	(*n*)	%	(*n*)	%	(*n*)	%	(*N*)
Aboriginal Offenders								
Minimum	8	(181)	10	(225)	0	(1)	17	(407)
Medium	3	(79)	61	(1,442)	3	(62)	67	(1,583)
Maximum	0	(8)	7	(175)	8	(177)	15	(360)
Total	11	(268)	78	(1842)	10	(240)		(2,350)
Non-Aboriginal Offenders								
Minimum	19	(1,756)	13	(1,157)	0	(10)	32	(2,923)
Medium	7	(640)	48	(4,342)	2	(209)	57	(5,191)
Maximum	1	(19)	5	(483)	5	(472)	11	(974)
Total	27	(2,415)	66	(5,982)	8	(691)		(9,088)

Note. Concordant cases appear on the diagonal. Percentages may not sum to 100 due to rounding.

Associations between the CRS and Relevant Measures

Convergent validity, or the extent to which the CRS produces results that are consistent with those stemming from conceptually related measures – in this case, risk, need, reintegration potential, and motivation – was then examined (see Table 6).[5] As was expected, classifications stemming from each of the CRS subscales as well as the overall CRS classification recommendation were positively related to ratings of risk and need and inversely related to ratings of motivation and of reintegration potential.[6] All relationships were moderate and were in the expected directions.

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[5] These relationships were examined using Goodman-Kruskal's index of relationship (γ), a measure of the association between two ordinal variables.

[6] In interpreting the relationship between CRS subscales and reintegration potential, caution is necessary. Reintegration potential, as mentioned earlier, is a composite measure of risk, need, scores on the Statistical Information for Recidivism – Revised 1 scale (non-Aboriginal offenders only) and CRS scores. This overlap means that the relationship between CRS subscales and reintegration potential will be somewhat inflated.

Table 6

CRS Security Classifications and Ratings on Conceptually Related Measures

| | Index of Relationship (γ) | | |
| | CRS Subscale | | Overall CRS Classification |
Measure	Institutional Adjustment	Security Risk	
	Aboriginal Offenders		
Risk	.32	.38	.36
Need	.50	.32	.41
Motivation	-.36	-.32	-.34
Reintegration Potential	-.56	-.47	-.55
	Non-Aboriginal Offenders		
Risk	.54	.45	.47
Need	.63	.42	.48
Motivation	-.47	-.29	-.34
Reintegration Potential	-.72	-.58	-.65

Note. $N_{\text{Aboriginal}} = 2,090$. $N_{\text{Non-Aboriginal}} = 8,360$. (Temporally relevant risk, need, reintegration potential, and motivation data were not available for all cases.)

Relationships between the conceptually related measures and each of the CRS subscales and the overall CRS classification were of slightly greater magnitude for the non-Aboriginal offenders than for their Aboriginal counterparts. Also, for both Aboriginal and non-Aboriginal offenders, the Institutional Adjustment subscale was more strongly related to the related measures than was the Security Risk subscale. The exception to this was that for Aboriginal offenders, risk was more strongly related to the Security Risk subscale than to the Institutional Adjustment subscale.

For non-Aboriginal offenders only, the associations between scores on the Statistical Information on Recidivism – Revised 1 scale and each of the CRS subscales, as well as with the overall CRS classification, were also examined.[7] Clear linear relationships, in the expected direction, were obtained with scores on this measure (see Table 7).

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[7] The Statistical Information on Recidivism – Revised 1 scale is only used with male non-Aboriginal offenders.

Table 7

CRS Security Classifications and Statistical Information on Recidivism – Revised 1 (SIR-R1)
Scores: Non-Aboriginal Offenders

	Mean (*SD*) SIR-R1 Score		
	CRS Subscale		Overall CRS Classification
Security Classification	Institutional Adjustment	Security Risk	
Minimum	1.7 (15.2)	5.5 (14.6)	6.0 (14.4)
Medium	-3.6 (16.9)	-1.5 (15.7)	-1.0 (15.4)
Maximum	-5.5 (17.0)	-6.7 (11.6)	-5.6 (16.1)

Note. $N_{\text{Non-Aboriginal}}$ = 9,088.   Higher SIR-R1 scores suggest a lower likelihood of recidivism.

Predictive Validity

Next, analyses were conducted to examine the CRS's predictive validity, or the extent to which CRS security classification recommendations made at admission are able to predict future outcomes. The predictive validity of actual security decisions was also examined, and the two were contrasted. For both CRS security classification recommendations and actual security decisions, predictive validity was examined with respect to institutional incidents and charges, escapes, discretionary release, and post-release outcome. Though the CRS is not intended nor used to predict discretionary release decision-making or post-release outcome, these outcomes were included as indirect measures of risk, which the CRS *does* assess. Specifically, the granting of discretionary release by the Parole Board of Canada reflects Board members' perceptions that an offender's risk is manageable. Similarly, post-release outcome has been used in previous research as a reflection of the offenders' risk, though it must be underscored that scales specific to the prediction of re-offence exist.

Institutional behaviour

For the analyses involving institutional behaviour, involvement in institutional incidents and convictions for institutional charges were examined. In both cases, a six-month follow-up period was used. This period ensured sufficient rates of institutional misbehaviour, but also maximized the number of CRS cases available for analyses. Six months of data were available for analysis for over two-thirds of the CRSs (70% and 66% for Aboriginal and non-Aboriginal

offenders respectively). The remainder had been released or, in a small number of cases, had died. Both institutional incidents and institutional charges were examined.

Overall, 26% of the sample was involved in an incident (either minor or major), with virtually no difference in this percentage between Aboriginal (26%) and non-Aboriginal offenders (27%). Table 8 presents a breakdown of the rates of involvement in incidents based on security classification. For Aboriginal and non-Aboriginal offenders, the rate of involvement in minor and major incidents increased linearly with security classification, both when CRS recommendation and actual security classification were considered.

Table 8

Institutional Incidents and Security Classification

	Cases Involved in Institutional Incidents (%)			
	Aboriginal Offenders		Non-Aboriginal Offenders	
Security Classification	Minor	Major	Minor	Major
CRS Recommendation				
Minimum	7	6	9	7
Medium	13	17	15	15
Maximum	28	32	34	32
Actual Classification				
Minimum	5	3	9	6
Medium	13	16	15	15
Maximum	33	39	45	39

Note. $N_{Aboriginal} = 1,647$. $N_{Non-Aboriginal} = 6,036$. Minor incidents include damage to government or personal property, possession of unauthorized items, information technology incidents, theft, fire, minor disturbance, disciplinary problems, and being under the influence. Major incidents include murder, hostage-taking, major disturbances, fights and assaults, sexual assaults, possession and transportation of contraband, and escape-related incidents.

Table 9 shows the rank-biserial correlations of the CRS subscale security classification recommendations, the overall CRS recommendation and the actual security classification with involvement in minor and major incidents. Not surprisingly, the Institutional Adjustment subscale had a stronger association with institutional involvement than did the Security Risk subscale for both Aboriginal and non-Aboriginal offenders. That said, the association of the overall CRS recommendation was still stronger, demonstrating that the inclusion of the Security

Risk subscale in determining security classification leads to an overall classification more strongly associated with involvement in incidents than would be the case if this subscale were omitted. Overall, the associations between the CRS recommendations and involvement in institutional incidents were of slightly greater magnitude than were those between the actual security classification and involvement in incidents.

Table 9

Association of Security Classification with Involvement in Institutional Incidents

| | Rank-Biserial Correlation Coefficient (r_{rb}) | | | |
| | Aboriginal Offenders | | Non-Aboriginal Offenders | |
Security Classification	Minor Incident	Major Incident	Minor Incident	Major Incident
CRS Subscales				
Security Risk	.07	.09	.13	.17
Institutional Adjustment	.22	.21	.19	.18
Overall CRS Recommendation	.23	.24	.24	.27
Actual Classification	.20	.22	.22	.24

Note. $N_{Aboriginal} = 1,647$. $N_{Non-Aboriginal} = 6,036$. Minor incidents include damage to government or personal property, possession of unauthorized items, information technology incidents, theft, fire, minor disturbance, disciplinary problems, and being under the influence. Major incidents include murder, hostage-taking, major disturbances, fights and assaults, sexual assaults, possession and transportation of contraband, and escape-related incidents.

The associations of each of the CRS component items with involvement in institutional incidents was also examined (see Appendix A). For Aboriginal men, higher scores on *street stability*, *age at first federal admission*, *age at time of sentencing*, *history of institutional incidents*, and *history of escapes* were all positively associated with involvement in institutional incidents. For Non-Aboriginal men, higher scores on each of these items as well as on *number of prior convictions*, *seriousness of outstanding charge*, *alcohol / drug use*, and *prior parole / statutory release* (minor incidents only) were also positively associated with incident involvement.

These analyses were followed by the calculation of a series of receiver operating characteristic (ROC) curves. ROC curves are a commonly-used index of predictive ability, and incorporates both prediction successes and prediction errors. ROC's most common metric in this

context is the area under the curve (AUC), which is an estimate of the likelihood that a higher score on the measure of interest is associated with the outcome of interest. Possible AUC values range from .50 (chance) to 1.00 (perfect association). The commonly accepted threshold for 'acceptable' predictive accuracy in the social sciences is of .60, while the threshold for 'good' predictive accuracy is of .70 (see Hosmer & Lemeshow, 2000).

As can be seen in Table 10, the AUC values obtained for the CRS security classification recommendation and the actual security classification were of similar magnitude. All AUC values fell in the 'acceptable' prediction range. Although the obtained values were consistently very slightly higher for the CRS recommendation than for the actual classification, in practical terms this difference was non-significant. For both Aboriginal and non-Aboriginal offenders, prediction was very slightly better for major institutional incidents.

Table 10

ROC Analyses: Predictive Ability of Security Classification for Institutional Incidents

	Area Under the Curve (AUC)	
Model	Aboriginal Offenders	Non-Aboriginal Offenders
Minor Institutional Incident		
CRS Recommendation	.61	.62
Actual Classification	.60	.61
Major Institutional Incident		
CRS Recommendation	.62	.64
Actual Classification	.61	.62

Note. $N_{\text{Aboriginal}} = 1,647$. $N_{\text{Non-Aboriginal}} = 6,036$.

A series of similar analyses were then conducted with respect to conviction of institutional charges. Again, the percentages of Aboriginal and non-Aboriginal offenders convicted of an institutional charge during the follow-up period were similar (40% and 39% respectively).   For both groups, the rates of conviction for minor and serious institutional charges increased together with security classifications, as measured both by the CRS and by actual classification (see Table 11).

Table 11

Institutional Charges and Security Classification

Security Classification	Cases Convicted of Institutional Charges (%)			
	Aboriginal Offenders		Non-Aboriginal Offenders	
	Minor	Serious	Minor	Serious
CRS Recommendation				
Minimum	17	7	25	8
Medium	34	18	31	19
Maximum	36	28	38	34
Actual Classification				
Minimum	20	2	27	6
Medium	31	18	30	19
Maximum	41	30	40	39

Note. $N_{Aboriginal} = 1{,}647$. $N_{Non\text{-}Aboriginal} = 6{,}036$. Institutional charges are categorized as minor or serious based on their severity, regardless of the action leading to the charge.

Generally speaking, the relationships of all the security classifications with conviction of minor charges were relatively weak (see Table 12). Results for serious charges, however, were similar to those for institutional incidents. Again, relative to the Security Risk subscale, the Institutional Adjustment subscale was more strongly associated with conviction of serious charges. The overall CRS classification was also more strongly associated with conviction of serious charges than was either CRS subscale alone, again supporting the use of both subscales. Finally, the associations of the overall CRS classification with conviction of serious charges was equal to (Aboriginal offenders) or slightly greater than (non-Aboriginal offenders) that of the actual security classification.

Table 12

Association of Security Classification with Conviction of Institutional Charges

Security Classification	Rank-Biserial Correlation Coefficient (r_{rb})			
	Aboriginal Offenders		Non-Aboriginal Offenders	
	Minor Charge	Serious Charge	Minor Charge	Serious Charge
CRS Subscales				
Security Risk	.10	.13	.06	.18
Institutional Adjustment	.08	.14	.07	.17
Overall CRS Recommendation	.13	.19	.09	.26
Actual Classification	.08	.19	.05	.23

Note. $N_{Aboriginal} = 1{,}647$. $N_{Non\text{-}Aboriginal} = 6{,}036$. Institutional charges are categorized as minor or serious based on their severity, not on the type of action leading to the charge.

Again, CRS subscale item-level analyses are presented in Appendix A. For both Aboriginal and non-Aboriginal men, higher scores on *street stability*, *age at first federal admission*, *history of institutional incidents*, and *age at time of sentencing* were all associated with greater involvement in institutional charges. In addition, for non-Aboriginal men, *most serious outstanding change*, *prior parole / statutory release*, and *alcohol / drug use* were also positively related. Of note, higher scores on *most serious outstanding charge*, *sentence length*, and *severity of current offence* (minor charges only) were all negatively associated with conviction of institutional charges for non-Aboriginal women.

Finally, though the differences were again very small, the AUC values obtained for the CRS security classification recommendation were slightly higher than those for the actual security classification (see Table 13). Both measures produced 'acceptable' AUC values for the serious institutional charges, but neither reached that threshold for minor institutional charges, which were predicted at rates only very slightly better than chance. In general, predictive ability was very slightly higher for non-Aboriginal offenders, though the differences was likely insufficient to have practical implications.

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Table 13

ROC Analyses: Predictive Ability of Security Classification for Institutional Charges

	Area Under the Curve (AUC)	
Model	Aboriginal Offenders	Non-Aboriginal Offenders
Minor Institutional Charge		
CRS Recommendation	.56	.55
Actual Classification	.54	.52
Serious Institutional Charge		
CRS Recommendation	.60	.63
Actual Classification	.58	.61

Note. $N_{Aboriginal} = 1,647$. $N_{Non-Aboriginal} = 6,036$.

Escapes

The next series of predictive validity examinations focused on escapes and escape-related behaviours. Given the infrequency of escapes, analyses in this domain used a one-year follow-up. Data were available for 58% of Aboriginal cases and 51% of non-Aboriginal cases. Overall, of the 5,979 offenders for whom one year of follow-up data were available, only 18 (0.3%) escaped in this time frame. Most of these ($n = 12$) were escapes from minimum security while the remainder were escape attempts ($n = 5$) or a failure to return from an unescorted temporary absence ($n = 1$). These base rates were too low to allow for examination of predictive validity related to escape and escape-related behaviours.[8]

Discretionary release

Analyses focused on discretionary release included any releases taking place within one year of the security classification decision.[9] Though these results represented nearly half of the

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[8] Given the low numbers of offenders escaping in the first year after the completion of their CRS, examinations of the numbers escaping at any point after their CRS until the date of data collection (a period of up to 50 months) were also conducted. Even with this expanded follow-up period, however, only 36 escapes and escape-related behaviours were recorded; this number was still low for follow-up analyses.

[9] There are two situations were releases can occur within the first year after admission even though federal offenders are sentenced to two years or more. First, because parole eligibility is reached after having served less than a third of the sentence, offenders with relatively short sentences' parole eligibility dates would occur within that year. Second, the admission may not be the offender's first on the sentence, and therefore the offender may already have served a portion of his or her sentence. This could occur if the offender has been released and subsequently had his or her release revoked (due, for example, to breaching the conditions of parole) and was re-admitted.

CRSs (49% and 42% for Aboriginal and non-Aboriginal offenders respectively), this approach results in under-representation of offenders sentenced to longer periods of incarceration, especially those who had been admitted under new sentences. Of the offenders who had been released within the first year of their incarceration, 39% were granted discretionary release. When ethnicity was considered, however, a much larger proportion of released non-Aboriginal offenders were granted discretionary release (43%) than was the case for Aboriginal offenders (20%). This may be partially attributable to differences in proportions of offenders in each ethnicity group who were convicted of a violent offence (70% and 58% for Aboriginal and non-Aboriginal offenders respectively), as rates of conditional release for violent offenders are lower than those for non-violent offenders (e.g., Turpin-Petrosino, 1999).

Table 14 presents a breakdown of the percentage of offenders at each security classification who were granted discretionary release within a year of the security classification decision. For both Aboriginal and non-Aboriginal offenders, the percentage being granted discretionary release was inversely related to security classification; this was true both when considering CRS security classification recommendation and when considering actual security classification. Larger proportions of non-Aboriginal offenders than of Aboriginal offenders were granted discretionary release at virtually every security classification.

Table 14

Release Type by Security Classification

	Discretionary Release (%)	
Security Classification	Aboriginal Offenders	Non-Aboriginal Offenders
CRS Recommendation		
Minimum	57	68
Medium	12	32
Maximum	7	6
Actual Classification		
Minimum	62	77
Medium	13	26
Maximum	1	0

Note. $N_{\text{Aboriginal}} = 988$. $N_{\text{Non-Aboriginal}} = 4,449$.

The associations of each of the CRS subscales, the overall CRS recommendation, and the actual security classification decision with release type were negative and generally of moderate magnitude for both ethnicity groups (see Table 15). In other words, the higher the security classification, the less likely that a release within the first year was to be discretionary. Consistent with what would be expected given the purposes of each subscale, the associations of the Security Risk subscale with release type were stronger than were those of the Institutional Adjustment subscale. Again, however, the association of the overall CRS recommendation with release type was stronger than were those of either subscale.

Table 15

Association of Security Classification with Granting of Discretionary Release

	Rank-Biserial Correlation Coefficient (r_{rb})	
Security Classification	Aboriginal Offenders	Non-Aboriginal Offenders
CRS Subscales		
Security Risk	-.40	-.37
Institutional Adjustment	-.20	-.18
Overall CRS Recommendation	-.46	-.43
Actual Classification	-.51	-.56

Note. $N_{Aboriginal} = 988$. $N_{Non-Aboriginal} = 4,449$.

For both Aboriginal and non-Aboriginal offenders, all subscale items except *severity of current offence* and *age at time of sentencing* (non-Aboriginal offenders only) were significantly associated with release type (see Appendix A). Associations were generally of small-moderate magnitude, with *prior parole / statutory release*, not surprisingly, the most strongly related to release type. *History of institutional incidents* was the second most strongly related item.

ROC curves were then computed (see Table 16). These demonstrated that both the CRS recommendation and the actual security classification decision predicted discretionary release at a 'good' to 'strong' level. Actual security classification was slightly more predictive than was the overall CRS security recommendation.

Table 16

ROC Analyses: Predictive Ability of Security Classification for the Granting of Discretionary Release

	Area Under the Curve (AUC)	
Model	Aboriginal Offenders	Non-Aboriginal Offenders
CRS Recommendation	.73	.72
Actual Classification	.76	.78

Note. $N_{Aboriginal} = 988$. $N_{Non-Aboriginal} = 4,449$.

Post-release outcome

The final series of CRS analyses focused on post-release outcome. Though the CRS is not intended to predict post-release performance, it is a measure of risk, and post-release outcome is thought to reflect risk or its manageability. Post-release outcome analyses included the 3,962 offenders who had been released and for whom one year of post-release follow-up was available.[10] Of these, 23% returned to custody for any reason within the year, with a somewhat greater percentage of the released Aboriginal offenders (28%) than of the non-Aboriginal offenders (22%) returning. In total, 10% of offenders (or 42% of those who returned for any reason) returned with a new offence, either as a result of a revocation with a new offence or due to a new conviction resulting in a federal sentence.

The percentage of non-Aboriginal offenders returned to custody – both in general and with a new offence – increased linearly with both CRS classification recommendations and with actual security classification decisions (see Table 17). For Aboriginal offenders, the difference between rates of return for those classified to minimum and medium security was as expected, but that for maximum security was actually lower than that for medium security. The exception was for actual classification and any return, where the rates of return increased with security classification.

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[10] The time frame chosen in developing the study sample (which allowed for use of a cross-reference table and therefore greater confidence in linking CRS and final security decisions) was relatively recent. As such, for some offenders, a full year post-release had not yet elapsed by the date the data were collected from the Offender Management System.

Table 17

Returns to Custody and Security Classification

Security Classification	Offenders Returned to Custody (%)			
	Aboriginal Offenders		Non-Aboriginal Offenders	
	Any Return	Return with Offence	Any Return	Return with Offence
CRS Recommendation				
Minimum	25	11	17	5
Medium	29	15	23	10
Maximum	28	9	34	14
Actual Classification				
Minimum	18	5	15	4
Medium	30	15	25	11
Maximum	33	10	30	13

Note. $N_{Aboriginal} = 733$. $N_{Non-Aboriginal} = 3,229$.

Table 18 presents the associations of each of the CRS subscales, the overall CRS recommendation, and the actual security classification decision with returns to custody. All associations were in the expected direction but magnitudes, especially for returns with offence, were relatively weak. Again, the relative strength of associations for each subscale were consistent with expectations, with the Security Risk subscale outperforming the Institutional Adjustment subscale in terms of association strength. The overall CRS recommendation and the actual security classification decision had the strongest associations.

Table 18

Association of Security Classification with Return to Custody

| | Rank-Biserial Correlation Coefficient (r_{rb}) | | | |
| | Aboriginal Offenders | | Non-Aboriginal Offenders | |
Security Classification	Any Return	Return with Offence	Any Return	Return with Offence
CRS Subscales				
Security Risk	.12	.08	.16	.17
Institutional Adjustment	.07	.03	.10	.07
Overall CRS Recommendation	.14	.06	.21	.20
Actual Classification	.12	.06	.26	.26

Note. $N_{Aboriginal} = 733$. $N_{Non-Aboriginal} = 3,229$.

The associations of the CRS items with return to custody were also calculated (see Appendix A). For Aboriginal offenders, "age at first federal admission" and "age at time of sentencing" were related to any return, and "street stability" was related to return with a new offences. For non-Aboriginal offenders, all the subscale items save "sentence length" were associated with returns, both in general and with a new offence. All significant associations were of small magnitude and were in the expected direction, except for the "severity of current offence", which was inversely correlated with return to custody.

The AUC values of the calculated ROC curves demonstrated that while both the CRS classification recommendation and the actual security classification could acceptably predict returns to custody – in general or with a new offence – for non-Aboriginal offenders, they did not reach this threshold for Aboriginal offenders (Table 19). For this latter group, predictive ability with respect to return to custody with a new offence was particularly poor, reaching a level virtually no better than chance. In interpreting these results, however, it is important to recall that the CRS is neither intended nor used to predict post-release outcome in practice. In other words, less-than-acceptable predictive strength for Aboriginal offenders in this regard is irrelevant to the CRS's ability to meet its stated goals.

Table 19

ROC Analyses: Predictive Ability of Security Classification for Return to Custody

	Area Under the Curve (AUC)	
Model	Aboriginal Offenders	Non-Aboriginal Offenders
Any Return to Custody		
CRS Recommendation	.57	.61
Actual Classification	.56	.63
Return with a New Offence		
CRS Recommendation	.53	.60
Actual Classification	.53	.63

Note. $N_{Aboriginal} = 733$. $N_{Non-Aboriginal} = 3,229$.

Possible Alternative or Additional Predictors

In response to critiques that the CRS fails to include items reflective of certain constructs that have been found, since the implementation of the scale, to be related to institutional adjustment and risk, a final series of exploratory analyses was conducted. Specifically of interest were the seven DFIA domain need ratings – Employment, Marital / Family, Associations / Social Interaction, Substance Abuse, Community Functioning, Personal / Emotional orientation, and Attitude – and of the gang affiliation indicator. All DFIA indicators were used in these analyses though the constructs represented by some overlap those already in the CRS (e.g., the DFIA Substance Abuse domain and the CRS *alcohol / drug use* item; he DFIA Community Functioning domain and *street stability* as assessed in the CRS), given that the manner of operationalizing these constructs considered most appropriate with respect to predicting institutional misconduct may have evolved since the CRS's development.

Appendix B presents the associations amongst CRS items and the DFIA domains and indicator. Though some associations are strong (e.g., the rank-biserial correlation between the CRS *alcohol / drug use* item and the DFIA Substance Abuse domain was of .77), most were much more modest. In particular, the DFIA Employment, Marital / Family, Associates / Social Interaction, and Community Functioning domains, as well as the gang membership / affiliation indicator, had mainly weak associations with CRS items. The lack of strong associations

between the DFIA measures and the CRS demonstrate that at least some of the DFIA measures may be tapping constructs that are distinct from those captured by the CRS.

The associations of each of the DFIA indicators with the outcomes of interest, namely involvement in institutional incidents, conviction of institutional charges, type of release granted, return to custody, and return to custody with a new offence, were calculated (Table 20 presents results for Aboriginal offenders while Table 21 presents results for non-Aboriginal offenders). Escapes were omitted from this analysis given the very low base rate with which they occurred. Contrasting the magnitude of the associations found for these domains and indicators with those found for the CRS scale and subscales allowed for a preliminary examination of the extent to which these untapped factors may eventually be incorporated to increase predictive ability.

Table 20

Association of DFIA Domains and Indicators with Outcomes of Interest: Aboriginal Offenders

	Strength of Association						
DFIA Domain or Indicator	Minor Incident	Major Incident	Minor Charge	Serious Charge	Release Type	Any Return	Return with Offence
Employment Domain	.10	.12	.06	.12	-.29	.12	.11
Marital / Family Domain	-.07	-.08	-.05	-.12	-.25	-.04	-.09
Associates / Social Interaction Domain	.15	.17	.06	.20	-.23	.11	.15
Substance Abuse Domain	.03	.03	.02	.03	-.35	.09	.09
Community Functioning Domain	.18	.06	-.01	.05	-.19	.09	.19
Personal / Emotional Orientation Domain	.09	.07	.01	.04	-.38	.10	.11
Attitude Domain	.27	.16	.07	.16	-.18	.11	.19
Gang Membership / Affiliation Indicator	.00	.13	.12	.12	-.21	.00	.00
N	1,647			988			733
Follow-Up Period	6 months			1 year			1 year from release

Note. For the DFIA domains, analyses compared three levels: (1) those with the factor seen as an asset, no immediate need for improvement, or low need for improvement (DFIA-R only), (2) those having some (DFIA) or moderate (DFIA-R) need for improvement, and (3) those having considerable (DFIA) or a high (DFIA-R) need for improvement. The gang membership/affiliation indicator was dichotomous (yes or no). Strength of association was calculated using rank-biserial correlations (r_{rb}) for the DFIA domains and Cramer's Phi (r_{ϕ}) for the gang membership/affiliation indicator.

Table 21

Association of DFIA Domains and Indicators with Outcomes of Interest: Non-Aboriginal Offenders

	Strength of Association						
DFIA Domain or Indicator	Minor Incident	Major Incident	Minor Charge	Serious Charge	Release Type	Any Return	Return with Offence
Employment Domain	.21	.21	-.01	.13	-.18	.09	.11
Marital / Family Domain	.05	-.02	-.03	-.01	-.22	.04	.04
Associates / Social Interaction Domain	.21	.22	.08	.17	-.13	.01	.04
Substance Abuse Domain	.09	.13	.12	.14	-.44	.19	.17
Community Functioning Domain	.14	.11	.01	.08	-.21	.07	.12
Personal / Emotional Orientation Domain	.07	.06	.09	.00	-.47	.10	.12
Attitude Domain	.21	.16	.08	.14	-.25	.08	.09
Gang Membership / Affiliation Indicator	.05	.07	.03	.05	-.07	.00	-.01
N			6,036		4,449		3,229
Follow-Up Period			6 months		1 year		1 year from release

Note. For the DFIA domains, analyses compared three levels: (1) those with the factor seen as an asset, no immediate need for improvement, or low need for improvement (DFIA-R only), (2) those having some (DFIA) or moderate (DFIA-R) need for improvement, and (3) those having considerable (DFIA) or a high (DFIA-R) need for improvement. The gang membership/affiliation indicator was dichotomous (yes or no). Strength of association was calculated using rank-biserial correlations (r_{rb}) for the DFIA domains and Cramer's Phi (r_{ϕ}) for the gang membership/affiliation indicator.

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Certain DFIA domains and indicators had associations with the outcomes of interest of similar magnitude to those found for the CRS subscales and overall CRS recommendations. With respect to the institutional behaviour outcomes, both the Associates / Social Interaction and the Attitude domains consistently had associations of relatively high magnitude. This pattern held for both Aboriginal and non-Aboriginal offenders, though for the latter, the Employment domain was also relatively strongly associated with involvement in institutional incidents and conviction of serious institutional charges.

A number of DFIA domains were also found to have important associations with the discretionary release and return to custody outcomes. For both Aboriginal and non-Aboriginal offenders, the Substance Abuse and Personal / Emotional Orientation domains were most strongly associated with the granting of discretionary release. For Aboriginal offenders, the Employment domain and the gang indicator were also associated with discretionary release. This latter finding may reflect the fact that Aboriginal and non-Aboriginal offenders tend to become involved in different types of gangs (e.g., Grekul & LaBoucane-Benson, 2008).

In keeping with results of the CRS predictive validity analyses, associations of the DFIA domains with return to custody differed according to ethnicity. For Aboriginal offenders, all of the DFIA domains had associations of magnitudes comparable to those found for the Security Risk subscale and the CRS as a whole for at least one of the return to custody outcomes. The gang indicator, however, was not associated with return to custody. Conversely, for non-Aboriginal offenders, only the Substance Abuse domain was relatively strongly associated with return to custody.

Discussion

Security classification continues to be one of the key decisions made as part of the management of incarcerated offenders. As such, this study was undertaken to examine the CRS, the actuarial assessment instrument used by CSC, together with professional judgment and psychological assessments, in determining inmates' initial security classifications. The study focused on male offenders and had three inter-related focal points, including a revalidation of the CRS and an examination of its appropriateness for use with Aboriginal offenders. The last focal point was a preliminary examination of the extent to which factors other than those in the CRS are associated with the outcomes of interest, with a view toward determining whether such factors should be considered for inclusion in future security classification measures.

CRS Revalidation Findings

Periodic revalidation of any actuarial instrument is important because it allows an examination of the extent to which the instrument continues to meet its stated goals (Austin, 2003). Change in the population to which it is applied can affect an instrument's validity; indeed, the federal correctional population in Canada has changed considerably in the nearly quarter-century since the CRS's development (e.g., Public Safety Canada, 2010). Given these population changes, a revalidation study was timely.

Overall, results were positive and demonstrated that the CRS continues to be valid with respect to initial security classification for male offenders. CRS recommendations were consistent with ratings on related measures. Specifically, higher CRS classifications were associated with higher levels of risk and of need and with lower levels of motivation and of reintegration potential. For non-Aboriginal offenders, with whom the Statistical Information on Recidivism – Revised 1, a measure of risk of recidivism, is used, scores on this measure were also associated with CRS security classification recommendations.

The scale's ability to predict involvement in minor and major institutional incidents, conviction of minor and serious institutional charges, granting of discretionary release, return to custody, and return to custody with offence was also examined. In general, results were satisfactory. For all outcomes, the associations of the CRS subscales with the examined outcomes were consistent with the subscales' different purposes. Specifically, the Institutional

Adjustment subscale demonstrated a stronger association with the measures of institutional misbehaviour than did the Security Risk subscale, while the latter demonstrated a stronger association with the granting of discretionary release and with the indices of return to custody. Examination of the associations of the overall CRS recommendations, however, demonstrated that in virtually all cases, the *combination* of the two subscales led to a stronger association with the outcome of interest than did consideration of either of the two subscales individually.

With respect to institutional adjustment, the CRS's predictive validity reached the level considered acceptable for involvement in both minor and major incidents and for prediction of serious institutional charge. It did not, however, attain this level for conviction of minor institutional charges. The reasons for CRS's difficulty in reaching the appropriate threshold with respect to this latter outcome are unclear. Convictions for institutional charges (both minor and major) require a guilty verdict, and in some cases, charges are withdrawn or dismissed due to insufficient evidence, paperwork errors, elapsed time frames, or other reasons not related to guilt. It is conceivable that this influenced results. Alternatively, this finding may simply reflect that the CRS is more able to predict more serious misconduct – almost half of minor institutional charges stem from disobeying rules, while nearly another 20% is collectively attributable to disobeying orders or to disrespecting staff (CSC, 2011). Behaviours such as possession of contraband, damaging property, assaults, using intoxicants, and jeopardizing safety are all more likely to result in serious charges. Given this distribution, it seems clear that conviction of serious charges is a better reflection of institutional adjustment than is conviction of minor charges; in this light, the CRS's greater predictive ability with respect to more serious indices of institutional misconduct is appropriate.

The CRS's ability to predict the granting of discretionary release was also examined. This outcome was used as a way of measuring risk, as the Parole Board of Canada's decisions to grant discretionary release are reflective of the Board members' perceptions that risk is manageable within the community. Results were quite good, demonstrating that CRS security classification recommendations were predictive of the Parole Board of Canada's perception of the offenders' risk. That said, in interpreting this result, it is important to acknowledge that research has also demonstrated that an offender's security classification can influence the granting of discretionary release (Luciani, 1997). It was impossible to assess the extent to which this influence may have played a role in the current context, but the predictive ability was

sufficiently strong that even if its measurement included an inflation attributable to security classification's influence on Board member decision-making, the true predictive ability very likely still reaches or exceeds the level considered acceptable.

Finally, CRS classification recommendations were less able to predict post-release outcome. While predictive ability was acceptable for Non-Aboriginal offenders, it did not reach this level for their Aboriginal counterparts. That said, the results may be partially attributable to the timelines used in this study – one year of post-release follow-up data was available for less than a third of the Aboriginal offenders (and less than 40% of non-Aboriginal offenders). Though the results for the two indices of risk – discretionary release and post-release outcome – are somewhat inconsistent, overall results seem promising. For non-Aboriginal offenders, predictive validity for both indices of risk was acceptable or better. For Aboriginal offenders, repeating the analyses on post-release outcome once more post-release outcome data are available may increase the confidence with which these results can be interpreted.

Overall, these revalidation results are positive. With the exception of conviction of minor charges and, for Aboriginal offenders, post-release outcome, the outcomes of interest were predicted at acceptable levels. That said, the strength of the CRS's predictive ability for most outcomes, though considerably greater than what would be expected without the use of an actuarial measure (see Ægisdóttir et al., 2006; Grove, Zald, Lebow, Snitz, & Nelson, 2000), could nonetheless be improved.

Similarly, the predictive ability of a small number of subscale items could also be improved. Focusing only on the subscales most relevant to each type of outcome, it was found that for the outcomes related to institutional adjustment, associations of the *alcohol / drug use* and *escape history* items within the Institutional Adjustment subscale were inconsistent and/or weak. That said, the latter is not surprising, given that low base rates precluded the calculation of any institutional adjustment analyses specific to escapes. With respect to the outcomes related to risk, the *severity of current offence* and *sentence length* items of the Security Risk subscale demonstrated weak and/or inconsistent associations. Given the results specific to Aboriginal offenders and post-release outcome, it is unsurprising that the associations of subscale items with this outcome were poor for Aboriginal offenders; again, this area will require further research attention.

In summary, though there is certainly room for improvement with respect to the CRS's

predictive ability, the present findings are positive and demonstrate that the scale can appropriately continue to be used in determining offenders' initial security classification. In an operational context, and especially when considering human behaviour, prediction can never be perfect. Even relatively modest gains in predictive accuracy – as represented by the use of the CRS over professional judgment alone, given findings that unstructured professional judgment predicts at rates little better than chance (Grove et al., 2000) – can translate into significant operational gains. Increases of any magnitude in appropriate classification benefit offenders in that their access to interventions and services is the least restrictive possible; benefit institutional staff and the public in that they contribute to fewer incidents and escapes; and are cost-effective, in that the increased costs associated with accommodating offenders at unnecessarily high levels of security are avoided.

CRS Security Classification Recommendations and Actual Security Classifications

As a part of the revalidation, CRS security classification recommendations and actual security classifications were contrasted. The rate of concordance between CRS recommendations and actual security classifications remained virtually the same as those reported in 1995 and 1997 (Grant & Luciani, 1998) for both Aboriginal and non-Aboriginal offenders. This concordance rate can be considered a measure of face validity, or the extent to which staff believe the scale is accurately measuring what it is intended to measure. From this point of view, the current results suggest that staff members' perceptions of the accuracy of the scale are relatively unchanged over the intervening fifteen years.

A more detailed examination of the cases where the CRS security classification recommendation and the actual security classification were inconsistent provided interesting results. Relative both to Grant and Luciani's (1998) previous revalidation of the CRS and to a recent revalidation of the measure used as part of the security reclassification process for male offenders (Gobeil, 2008), a greater percentage of the inconsistencies in this study represented cases where the actual security classification was lower than the CRS recommendation. This was true for offenders of both ethnicities; indeed, a slightly smaller percentage of Aboriginal offenders than of non-Aboriginal offenders were actually classified at a level higher than that recommended by the CRS (52% of inconsistent cases or 12% overall vs. 55% of inconsistent cases or 15% overall). This finding suggests that Parole Officers are using their professional judgment to ensure compliance with CSC's legislative requirement to classify offenders to the

appropriate level of security while maintaining public safety.

For all of the outcomes examined, the predictive ability of the CRS and of actual classifications were very similar. The only instance in which the difference was more than one or two points in either direction was with respect to the granting of discretionary release, where actual classification outperformed the CRS recommendation. This is likely attributable to the fact, previously mentioned, that Parole Board members are more likely to grant discretionary release to those classified at lower levels of security (Luciani, 1997); if actual security classifications influenced discretionary release decisions, this would lead to a stronger association for actual classification than for CRS recommendations.

Contrasting the results specific to CRS security classification recommendation and actual security classifications provided an indication of the effectiveness of the combination of an actuarial measure and professional judgment. This area has recently come to receive an increased amount of attention. While some researchers contend that the addition of professional judgment to actuarial measures leads to reductions in predictive accuracy (e.g., Rice, 2007), others have found that the addition of professional judgment strengthens accuracy (e.g., de Vogel & de Ruiter, 2006; van den Brink, Hoojischuur, van Os, Savenije, & Wiersma, 2010). The present results demonstrated that the predictive ability of the CRS and of the CRS in combination with professional judgment (i.e., the actual security classification) were roughly equivalent. In other words, findings from this study were consistent with neither of these schools of thought.

Use of the CRS with Aboriginal Offenders

As expected, relative to their non-Aboriginal counterparts, slightly higher percentages of Aboriginal offenders were classified to maximum security and to medium security, while a lower percentage was classified to minimum security. This was true both when CRS security classification recommendations and when actual security classifications were considered.

That said, results of analyses of convergent and predictive validity produced similar results for Aboriginal and non-Aboriginal offenders. While there were some differences in the associations of the CRS and its subscales with the examined variables for Aboriginal and non-Aboriginal offenders, no clear patterns emerged. For instance, the CRS was more strongly associated with risk, need, motivation, and reintegration potential for the non-Aboriginal offenders. Conversely, the Institutional Adjustment subscale of the CRS tended to exhibit

stronger associations with the measures of institutional outcome for Aboriginal offenders.

Overall, however, both the CRS security classification recommendation and the actual security classification were able to predict involvement in institutional incidents and conviction of serious institutional charges at similar and acceptable rates for offenders of both ethnicities. Similarly, despite small differences in patterns of association, both the CRS recommendations and actual classifications were predictive of the granting of discretionary release. On the other hand, returns to custody were more successfully predicted for non-Aboriginal offenders. As mentioned earlier, it is possible that this last finding be due to the relatively small proportion of the Aboriginal offenders who were included in these analyses. Conclusions with respect ot his final outcome, then, remain tentative.

What can be concluded from these analyses is that in the two areas where the CRS is most strongly predictive – institutional outcomes and granting of discretionary release – results were very similar for Aboriginal and non-Aboriginal offenders. In other words, the CRS is able to predict involvement in serious institutional misbehaviours and Parole Board members' perceptions of the manageability of the offenders' risk at comparable rates for offenders of both ethnicities.

Collectively, these results suggest that the difference in the security classification distributions of Aboriginal and non-Aboriginal offenders reflect underlying differences in risk. Indeed, the current findings are consistent with the extensive body of research that demonstrates that Aboriginal offenders tend to exhibit more characteristics associated with institutional maladjustment and risk than do non-Aboriginal offenders (e.g., Brzowowski et al., 2006; Finn et al, 1999; Holsinger et al., 2003; Moore 2003; Moore et al., 2004). That said, when sufficient data are available, a further exploration of the return to custody analyses will allow greater confidence in this interpretation. Until then, however, the present results are not sufficient to support the argument that Aboriginal offenders are over-represented. Given their appropriate classification, efforts to address Aboriginal offenders' representation at higher levels of security would perhaps best be focused on interventions relating to risk and institutional adjustment.

Emerging Literature on the Correlates of Institutional Maladjustment

Development of the CRS began in 1987, and since this time, the body of literature on the correlates of institutional maladjustment has continued to evolve (e.g., Gendreau, Goggin, & Law, 1997). As such, a short series of analyses was conducted to examine to what extent

indicators of criminogenic need in seven domains and of gang affiliation, already collected by CSC in another context, might be related to institutional misconduct. A number of these indicators – specifically, antisocial attitudes, associates / social interaction, substance use, gang affiliation (Gaes et al., 2002; Gendreau et al.,1997) – have been identified by researchers as being related to institutional misconduct.

While there is some overlap between the indicators of criminogenic need and the CRS items (e.g., needs relating to employment, associates / social interaction, community functioning, and attitudes could all be conceived of as representing aspects of the CRS *street stability* item), an examination of the relationships of the indicators of criminogenic need to the CRS items demonstrated limited association. The exception to this was that criminogenic need relating to substance abuse was strongly related to the CRS *alcohol / drug use* item. The limited associations indicate that most of the indicators of criminogenic need examined in these analyses reflect constructs different from those included in the CRS. That said, it is important to note that this does not mean the constructs are not reflected in the security classification decision as a whole. Parole officers' professional judgment is an important component of the security classification decision, and it may well be that they consider areas such as these criminogenic need domains in their professional appraisals.

Regardless, associations were found between the criminogenic need domains and the outcomes of interest. In keeping with the results of a meta-analysis on institutional misconduct (Gendreau et al., 1997), criminogenic need related to antisocial attitudes and to associates / social interaction were found to be associated with involvement in institutional incidents and conviction of institutional charges. A number of these associations were of magnitudes comparable to those of the Institutional Adjustment subscale of the CRS (the subscale most relevant to these outcomes).

Patterns with regard to the outcomes related to risk were somewhat less clear. Though criminogenic need relating to substance abuse and to personal / emotional orientation were relatively strongly associated with the granting of discretionary release (as were criminogenic need relating to employment and gang affiliation, for Aboriginal offenders), patterns with respect to return to custody were ambiguous. As was stated earlier, repeating analyses when a greater number of offenders have been released and been followed in the community to determine their post-release outcome may be helpful in determining patterns specific to returns to custody.

Extensive empirical examination would be required to assess the extent to which these criminogenic need indicators or similar constructs might fruitfully be incorporated in a security classification instrument, and, given the satisfactory predictive validity of the CRS, there is currently no need for such an examination. That said, the associations found were sufficiently strong to indicate that if and when modifications are made to the current approach to making security classification decisions, there may be value in considering the systematic inclusion of measures of antisocial attitudes and of antisocial associates, and perhaps other measures as well. The current analyses are not sufficient to demonstrate that they should be included in a new instrument. It may be that after statistically accounting for the predictive strength of other possibly predictive items (including those already in the CRS), these items do not make a strong unique contribution in predicting institutional adjustment or security risk. Conclusions in this area are premature based on the present findings, which instead simply identify an area for further future exploration.

Conclusions

In sum, the results of this study demonstrate that the CRS continues to be appropriate for use, together with professional staff members' clinical judgment and psychological assessments, in determining male offenders' initial security classification. Aboriginal and non-Aboriginal offenders receiving higher CRS security classification recommendations tended to be higher risk (as shown by higher risk ratings and lower rates of discretionary release) and to be less well adjusted (as shown by higher levels of need, lower levels of reintegration potential, and higher rates of institutional misconducts) than their counterparts who received lower classification recommendations.

Furthermore, the current study did not support the contention that the use of the CRS contributes to over-classification of Aboriginal offenders (Office of the Correctional Investigator, 2008). Indeed, the CRS was equally predictive of institutional misconduct and the granting of discretionary release – an indicator of the manageability of risk, as assessed by Parole Board members – for Aboriginal and non-Aboriginal offenders.

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Appendices

Appendix A: Associations of CRS Items with Outcomes of Interest

Table A1

Association of CRS Items and Involvement in Institutional Incidents

	Extent of Association (r_Φ)			
	Aboriginal		Non-Aboriginal	
CRS Items	Minor Incident	Major Incident	Minor Incident	Major Incident
Security Risk Subscale				
Number of prior convictions	.06	-.02	.09**	.07**
Most serious outstanding charge	.07	-.03	.07**	.07**
Severity of current offence	-.02	.00	-.03	-.01
Sentence length	.00	.02	-.02	-.02
Street stability	.08*	.10**	.08**	.08**
Prior parole / statutory release	.07	.02	.05**	.04
Age at first federal admission	.12**	.13**	.13**	.17**
Institutional Adjustment Subscale				
History of institutional incidents	.17**	.15**	.13**	.12**
Escape history	.12**	.09*	.07**	.05**
Street stability	.08*	.10**	.08**	.09**
Alcohol / drug use	.05	.05	.05**	.08**
Age at time of sentencing	.12**	.17**	.13**	.18**

Note. $N_{Aboriginal} = 1,647$. $N_{Non-Aboriginal} = 6,036$.
*$p < .001$ (equivalent to $p < .05$ after application of Bonferroni correction). **$p < .0002$ (equivalent to $p < .01$ after application of Bonferroni correction).

Table A2

Association of CRS Items and Conviction of Institutional Charges

CRS Items	Extent of Association (r_Φ)			
	Aboriginal		Non-Aboriginal	
	Minor Charge	Serious Charge	Minor Charge	Serious Charge
Security Risk Subscale				
Number of prior convictions	-.07	-.02	.04	.06**
Most serious outstanding charge	.03	.05	.06**	.09**
Severity of current offence	-.03	-.03	-.10**	-.03
Sentence length	-.01	.00	-.08**	-.05*
Street stability	.10**	.08*	.11**	.11**
Prior parole / statutory release	-.01	.04	.04*	.06**
Age at first federal admission	.18**	.19**	.15**	.21**
Institutional Adjustment Subscale				
History of institutional incidents	.15**	.14**	.16**	.14**
Escape history	.05	.06	.03	.06**
Street stability	.10**	.09**	.11**	.11**
Alcohol / drug use	.03	.04	.09**	.09**
Age at time of sentencing	.20**	.20**	.15**	.21**

Note. $N_{Aboriginal} = 1{,}647$. $N_{Non\text{-}Aboriginal} = 6{,}036$.
*$p < .001$ (equivalent to $p < .05$ after application of Bonferroni correction). **$p < .0002$ (equivalent to $p < .01$ after application of Bonferroni correction).

Table A3

Association of CRS Items and Granting of Discretionary Release

CRS Items	Extent of Association (r_Φ)	
	Aboriginal	Non-Aboriginal
Security Risk Subscale		
Number of prior convictions	-.23**	-.39**
Most serious outstanding charge	-.12**	-.10**
Severity of current offence	-.08	-.04
Sentence length	-.14**	-.16**
Street stability	-.33**	-.41**
Prior parole / statutory release	-.63**	-.67**
Age at first federal admission	-.23**	-.21**
Institutional Adjustment Subscale		
History of institutional incidents	-.42**	-.58**
Escape history	-.18**	-.26**
Street stability	-.32**	-.40**
Alcohol / drug use	-.22**	-.37**
Age at time of sentencing	-.12**	-.01

Note. $N_{\text{Aboriginal}} = 1,647$. $N_{\text{Non-Aboriginal}} = 6,036$.
*$p < .002$ (equivalent to $p < .05$ after application of Bonferroni correction). **$p < .0004$ (equivalent to $p < .01$ after application of Bonferroni correction).

Table A4

Association of CRS Items and Returns to Custody

| CRS Items | Extent of Association (r_Φ) | | | |
| | Aboriginal | | Non-Aboriginal | |
	Any Return	Return with Offence	Any Return	Return with Offence
Security Risk Subscale				
Number of prior convictions	.01	.01	.14**	.07**
Most serious outstanding charge	.05	.06	.09**	.06**
Severity of current offence	.01	-.07	-.07**	-.07**
Sentence length	.01	-.05	.02	.01
Street stability	.10	.11*	.14**	.10**
Prior parole / statutory release	.03	.02	.13**	.09**
Age at first federal admission	.16**	.09	.10**	.09**
Institutional Adjustment Subscale				
History of institutional incidents	.08	.05	.12**	.08**
Escape history	.08	.00	.11**	.06**
Street stability	.09	.11*	.15**	.10**
Alcohol / drug use	.09	.06	.16**	.09**
Age at time of sentencing	.14**	.10	.07**	.07**

Note. $N_{Aboriginal} = 733$. $N_{Non-Aboriginal} = 3,229$.
*$p < .001$ (equivalent to $p < .05$ after application of Bonferroni correction). **$p < .0002$ (equivalent to $p < .01$ after application of Bonferroni correction).

Appendix B: Associations of DFIA Domains and Indicators with CRS Items

	Extent of Association							
	DFIA Domains							DFIA Gang Indicator
CRS Items	Employment	Marital/ Family	Associates/ Social Interaction	Substance Abuse	Community Functioning	Personal/ Emotional Orientation	Attitude	
Security Risk Subscale								
Number of prior convictions	.15	.15	.09	.35	.19	.17	.29	-.02
Most serious outstanding charge	.05	.02	.08	.07	.04	.02	.07	.05
Severity of current offence	.02	.10	.04	-.11	-.06	.10	-.08	.10
Sentence length	-.01	.01	.03	-.04	.01	.11	.05	.06
Street stability	.16	.09	.16	.37	.22	.25	.26	.11
Prior parole / statutory release	.06	.05	.07	.30	.14	.21	.22	.04
Age at first federal admission	.19	-.07	.24	.10	.08	.11	.15	.14
Institutional Adjustment Subscale								
History of institutional incidents	.09	.05	.18	.28	.14	.27	.33	.12
Escape history	.15	.09	.13	.27	.18	.19	.25	.04
Street stability	.16	.10	.15	.39	.22	.26	.25	.10
Alcohol / drug use	.12	.14	.06	.77	.16	.23	.05	-.01
Age at time of sentencing	.22	-.08	.26	-.01	.03	.01	.00	.16

Note. For the DFIA domains, analyses compared three levels: (1) those with the factor seen as an asset, no immediate need for improvement, or low need for improvement (DFIA-R only), (2) those having some (DFIA) or moderate (DFIA-R) need for improvement, and (3) those having considerable (DFIA) or a high (DFIA-R) need for improvement. The gang membership/affiliation indicator was dichotomous (yes or no). Strength of association was calculated using rank-biserial correlations (r_{rb}) for the DFIA domains and Cramer's Phi (r_ϕ) for the gang membership/affiliation indicator.