

APPENDIX A

NOTICE OF PAROLE BOARD ACTION FORM

NOTICE OF COLORADO PAROLE BOARD ACTION

<input type="checkbox"/> Full Board Review <input type="checkbox"/> Amend <input type="checkbox"/>	Date: 07- -2008 Tape No: PED/MAND PAR PD - 5 Yrs Sentence Type:	TRINIDAD Location
Name: _____	DOC #: _____	_____
Offense: 1: SMUGHUMANS	Cls Gov County: 3 B JEFFERSON	Case #: _____
	Min Sent: 2-0-0	MAX Sent: 2-0-0
	Typ: IN	SVP: _____
		09-27-2008 PED
		09-27-2009 MRD
		SDD

Pursuant to authorization of the Colorado Parole Board, adjustments will be made on qualifying MRD/MRP/PED releases if the release date falls on a weekend day (Fri-Sun) or on a State recognized Holiday.

DEFER TO: _____ (DATE)

AGGRAVATING FACTORS/INADEQUATE TIME SERVED
(Circumstances of Offense)

PUBLIC RISK (Substantial Parole Risk; Prior Criminal Record)

SVP (SEXUALLY VIOLENT PREDATOR) FINDINGS:

JUDICIAL: NONE

PAROLE BOARD: NONE

SVP ASSESSMENT: _____

DISCIPLINARY INFRACTION (Conduct in Correctional Facility)

RISK CONTROL PROBLEMS

Needs Continued Correctional Treatment
 Psychological Reports Indicate Problems
 Incomplete/Unacceptable Parole Plan

WAIVED

To Discharge
 To Complete Program(s)
 Awaiting Admittance Into Program
 Parole Plan Difficulties

OUT TO COURT / IN JAIL

TRANSFERRED

OTHER _____

RELEASE * DETAINER *****

Parole/Reparole to: _____

Period of: _____

Effective Release Date: _____

TABLED

For Approved Plan
 Must Remain Report Free and Program Compliant
 Marginal

In addition to C.R.S. 17-2-201(5)(f)(I) the following Special Conditions are added:

Mental Health
 Drug/Alcohol Program
 Monitored Antabuse/Alternative if medically able
 No Alcohol Intake or Possession
 ISP 180 days @ CPO discretion
 Obtain AA/NA Sponsor
 No Liquor Establishments
 No Driving w/o P.O approval
 No Contact With
 No Return to USA, if deported
 Vocational Rehabilitation
 Day Reporting Center
 Curfew
 No Checking Accounts or other Credit Devices
 Other _____

State Parole Board Signatures: The undersigned hereby certify that all, but not limited to, parole guidelines set forth in C.R.S. 17-22.5-404(2), (3) and (4), were taken into consideration as per statute. *

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

Restitution Per Court Order:

County	Mittimus	Amount
JEFFERSON	07CR3278	\$559.00

Payment Total: \$559.00

To be scheduled by the Parole Officer.

Release Pursuant to CRS 17-22.5-404

Acceptable Parole Plan
 Other: _____

Distribution: Parole Board Time Comp Inmate
 DOC Records Working File

To:

The COLORADO STATE BOARD OF PAROLE in session at **Walsenburg, Colorado** on **October 22, 2007** considered your application for parole and, believing that you can abide by the conditions of your parole agreement, hereby orders your parole to become effective **January 29, 2008**. Your parole will discharge on **January 29, 2010** unless sooner terminated by order of the Board on the motion of your Parole Officer or the Parole Board.

PAROLE AGREEMENT

Parolee will be directed and supervised by Officers and Supervisors of the Division of Adult Parole Supervision, Department of Corrections, and will be accountable for his actions and conduct during this period of parole.

Parolee will abide by all conditions of parole set forth in this agreement and any additional conditions and directives set forth by Parole Officer, consistent with the laws of the State of Colorado. Any violation of this agreement and /or any conditions thereof, can lead to the revocation of parole.

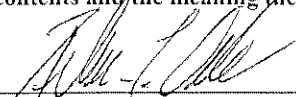
CONDITIONS OF PAROLE

As a condition of every parole:

1. **Release:** Upon release from the Institution, Parolee shall go directly to **Lakewood Warrant 04T12227/Arapahoe County, Colorado** as designated by the Board of Parole. **If released by the above authority prior to the stipulated Colorado parole expiration date, report to Melissa Duncan, 3642 South Galapago Street, Englewood, Colorado 80110, Phone: 800/426-9143, Fax:303/761-3703** in person or as directed.
2. **Residence:** Parolee shall establish a residence of record and shall reside at such residence in fact and on record; shall remain at the residence of record each night unless otherwise authorized by the Parole Officer; shall not change this place of residence without the consent of his Parole Officer; and shall not leave the area paroled to or the State paroled to without permission of the Parole Officer.
3. **Conduct:** Parolee shall obey all State/Federal laws and Municipal ordinances. Parolee shall follow the directives of the Parole Officer at all times.
4. **Report:** Parolee shall make written, and in person, reports as directed by the Parole Officer; and shall permit visits to his place of residence as required by the Parole Officer.
 - a. Parolee further shall submit urinalysis or other tests for narcotics or chemical agents upon the request of the Parole Officer, and is required to pay for all tests.
 - b. Parolee further agrees to allow the Parole Officer to search his person, or his residence, or any premises under his control, or any vehicle under his control.
5. **Weapons:** Parolee shall not own, possess, nor have under his control or in his custody, firearms or other deadly weapons.
6. **Association:** Parolee shall not associate with any person with a criminal record without the permission of the Parole Officer.
7. **Employment:** Parolee shall seek and obtain employment, or shall participate in a full time educational or vocational program, unless waived by the Parole Officer.
8. **Alcohol/Drugs:** Parolee shall not abuse alcoholic beverages, or possess and/or use illegal drugs.
9. **Child Support:** Parolee shall comply with any court or administrative order to pay child support.
10. **Additional Conditions:** a.Parolee shall participate in a drug/alcohol treatment program. b.Parolee shall have no alcohol intake or possession. c.Parolee shall participate in Intensive Supervision while on parole for 120 days at Parole Officer's discretion. d.Parolee shall do no driving without permission from the Parole Officer. e.Parolee shall work on obtaining GED. f.Parolee shall pay restitution in the amount of \$372.50 in payments to be scheduled by the Parole Officer until paid in full.

I agree to abide by all the conditions of my parole heretofore set forth, and I do hereby waive extradition to the State of Colorado from any state or territory of the United States or from the District of Columbia, and agree that I will not contest any effort to return me to the State of Colorado at any time before the expiration of my maximum sentence.

I have read the forging document or have had it read to me and I have full and intelligent understanding of the contents and the meaning thereof; and I have received a copy of this document.



FOR THE COLORADO STATE BOARD OF PAROLE

SIGNATURE OF PAROLEE

Date: _____

Witness

Distribution: PBD/DF/WR/Inmate/Time-Release

APPENDIX B

**REVIEW DOCUMENTS:
2008 COLORADO ACTUARIAL RISK ASSESSMENT SCALE (VERSION 5)**



**COLORADO
DEPARTMENT
OF PUBLIC SAFETY**

Division of Criminal Justice
Jeanne M. Smith, Director
700 Kipling Street
Suite 3000
Denver, CO 80215-5865
(303) 239-4442
FAX (303) 239-4491

To: Pete Weir, Director CDPS
From: Kim English, Director ORS
Date: October 4, 2009
Re: External Evaluation of the Colorado Actuarial Risk Assessment Scale, Ver. 5

Following the re-development and re-validation of version 4 of the Colorado Actuarial Risk Assessment Scale (CARAS), the Office of Research and Statistics sought external reviews of the methods and processes undertaken for this effort. This Ver. 5 update, as required by legislative mandate, was completed in November 2008 by actuarial scale consultant Marshall Costantino of Analysis, Research and Design, Inc.

Two experts were recommended to conduct a review of the CARAS. Gerald G. Gaes, Ph.D. is a Research Faculty member at the Center for Criminology and Public Policy Research at Florida State University and former Director of Research (1988-2002) and Researcher (1980-'86) at the Federal Bureau of Prisons (1980-'86). S. Christopher Baird is the Executive Vice President of the National Council on Crime and Delinquency directing the Children's Research Center for that organization since 1985. Please see the attached reviewer bio document for additional background information for the reviewers and Mr. Costantino.

In brief, Dr. Gaes indicates that Mr. Costantino employed techniques that "are quite systematic and technically proficient" and that the ability of the CARAS to differentiate recidivists from nonrecidivists is "quite good." Gaes summarizes by stating, "Taking everything together, this was a competent and well executed scale development process...." The complete review by Dr. Gaes is attached.

Mr. Baird, who reports being involved with risk assessment research since 1972, introduces his review by stating that he found the CARAS-5 "quite innovative." He concludes by offering, "The CARAS-5 is a well constructed scale with discriminatory power rivaling (and for the most part, surpassing) other risk models used across the nation." The complete review by Mr. Baird is attached.

Both reviewers offered valuable advice for future versions and further development of the CARAS. The Office of Research and Statistics and consultant Mr. Costantino are studying these suggestions to further improve the performance of the CARAS.

Bill Ritter, Jr.
GOVERNOR
Peter A. Weir
EXECUTIVE DIRECTOR
Colorado State
Patrol
Colorado Bureau
of Investigation
Division of
Criminal Justice
Office of Preparedness,
Security, and Fire Safety



Reviewer and Consultant Bios

Colorado Actuarial Risk Assessment Scale, version 5

Gerald Gaes, Ph.D.

Gerald Gaes, Ph.D. received his doctorate in social psychology from the State University of New York at Albany in 1980. He worked for the Federal Bureau of Prisons for 20 years, including as the director of the Office of Research. He served as a visiting scientist at the National Institute of Justice for five years; he also served a two-year detail at the United States Sentencing Commission. Gaes is first author of *Measuring Prison Performance: Government Privatization and Accountability*; he has published extensively in professional journals, including *Crime and Delinquency*, *Criminal Justice Review*, *Criminology and Public Policy*, *Justice Quarterly*, and *Punishment & Society*. In July 2000, he received the U. S. Department of Justice Attorney General's Distinguished Service Award for the correctional research that he conducted during his BOP career. (Complete vitae as of August 2009 available upon request.)

S. Christopher Baird

Christopher Baird is the Executive Vice President of the National Council on Crime and Delinquency/Children's Research Center and has directed the Midwest Office in Madison, Wisconsin since 1985. He has designed risk assessment, classification and case management systems for child welfare, adult probation and parole, and juvenile justice systems. He developed and managed the National Institute of Corrections Model Probation and Parole program which was implemented in 31 state agencies and hundreds of county probation departments throughout the United States. Mr. Baird served as principal investigator on two grants from the National Institute of Justice, including a comprehensive evaluation of the Florida Community Control Program. From 1990-1997, he directed NCCD's Children's Research Center which developed risk assessment and decision making systems used in Child Protection Services for over 50 state and county agencies in the United States and Australia. He and colleagues wrote a comprehensive evaluation of the system in Michigan assessing its impact on subsequent abuse and neglect. He directed and authored a national study funded by the Office of Child Abuse and Neglect (OCAN) that compared child protective services risk assessment systems in four jurisdictions. He is currently conducting research for the Casey Foundation's workforce initiative.

Mr. Baird has authored numerous journal articles and other publications on research, program development and management issues in child welfare, juvenile justice, and corrections. In 1992, he received the University of Cincinnati Award from the American Probation and Parole Association for outstanding research contributions to the field. In 2001, he and his colleague Dennis Wagner received the Pro Humanitate Literacy Award for "The Relative Validity of Actuarial and Consensus-Based Risk Assessment Systems" from the North American Resource Center for Child Welfare. In 2004, he received the Grace B. Flandeau Award for his contributions to child welfare. His educational background includes a Masters degree in Economics.

Marshall Costantino

Marshall Costantino's academic training includes a Bachelor of Science degree in Applied Mathematics and a Master of Science degree in Quantitative Economics with a minor in Operations Research. His business and government experience varies among the consumer and commercial credit industry, Federal Government procurement financial analysis, worker's compensation insurance and criminal justice. For the last 33 years, he has been involved in at least 50 consumer and/or commercial credit scoring developments and implementations. During his 12 years with Citigroup, he headed departments participating in credit policy development and implementation for a number of start-up and turnaround businesses. Citigroup had a number of quantitative financial risk management groups whose charge was to identify potential bad accounts and to administer quantitatively based credit policy. Because of his work with these groups, Marshall was placed on a team of internal consultants who were called upon to "put out fires" anywhere in the world at any time.

Marshall formed Analysis, Research & Design, Inc. in 1981 in order to take advantage of the consulting opportunities that arose as a result of guest speaking engagements at conferences all over the world. Between 1981 and 1987, AR&D was a part-time venture but in 1988 it became a full-time business. Since then, Marshall has split his professional time between consulting and teaching undergraduate and graduate courses at various colleges and universities in the Denver area. Currently, he serves as adjunct faculty at the University of Denver's University College. He has taught courses ranging from Business 101 to graduate level economics, statistics, finance, operations research and legal compliance.

Eleven years ago, Marshall built the first claim scoring system for Pinnacol Assurance, Colorado's quasi-government/private partnership in worker's compensation insurance, saving Pinnacol Assurance \$56,000 in prevented fraud losses during the first six months. Over the past 11 years, he has analyzed the legal function, sought to identify medical provider fraudulent transactions using Benford's Law, and devised four policy renewal scoring systems. Over the last 10 years he has been retained by two sub-prime auto lenders.

Visit ARD's website to review some of the major projects in which Marshall's agency has been involved, at <http://www.arddenver.com> .

Review of CARAS, Colorado Actuarial Risk Assessment Scale

Gerald G. Gaes

Florida State University, Criminal Justice Consultant

September 9, 2009

Review of CARAS, Colorado Actuarial Risk Assessment Scale

Marshal Costantino, Analysis, Research and Design, Inc., was contracted to develop the new CARAS instrument. In this report, I review the scale development methods and the statistics that indicate how well the scale performs. Most of my comments in this review are based on the document entitled “CARAS Information Request”, a follow up memo from Costantino entitled “Clarification Response to your Questions on the DOC Information Request” in which he replied to questions I had about the original document,. I also used a spreadsheet Costantino sent showing how the weights for CARAS were computed, and other documents which were primarily memos indicating progress and decisions made throughout the CARAS development.

Recidivism Definition and Technical Violators

One of the crucial decisions in the scale development was the definition of outcomes for the purpose of classification. Under guidance from the Division of Criminal Justice, Colorado Department of Public Safety (DCJ), Costantino divided the post-release events into returns to prison based on a new felony filing (call these recidivists), returns based on technical violations, and people who remained in the community (call these non-recidivists). The rationale behind this decision is that DCJ considers recidivism to mean harm to members of the community and revocations due to technical violations are due to failures to follow terms of supervision. I suspect that the public policy goal of returning some technical violators to prison is to preclude crimes that they may commit. Therefore, as noted by Costantino, they are removed from the pool of parolees possibly prior to their committing a new crime. Since we cannot know whether they would have committed crimes had they continued to technically violate conditions of their supervision (or perhaps were committing crimes but had not been arrested), this is a difficult problem to handle. Most analysts treat returns to prison based on a technical violation as the same event as a return for a new felony filing. There are different ways to examine the relationship between the classification predictors and the different outcomes. One could use a form of regression, multinomial regression to see if the same factors that predict returns for new felony filings are similar to returns for technical violations. Another way to model the prediction of failure is to use survival methods and treat technical violations as a censoring event for returns based on felony filings. Then one treats technical violation returns as the event of interest with returns to prison based on a felony filing as a censoring event.

While these use regression to estimate the predictive power of variables, Costantino chose the more traditional way of classification, and what he did is consistent with the way most analysts develop classification tools in criminal justice. Costantino chose to model the parolees returned to prison based on 1 or more felony filings relative to those who remained on parole with no felony filing

excluding people who were returned to prison for a technical violation. The document entitled “CARAS Information Request” provides the following explanation:

Analysis performed during the development process indicated that 2/3rds of the technical violators were more similar to and could be combined with the nonrecidivists and 1/3rd of the technical violators were more similar to and could be combined with the recidivists for the purpose of developing the final scoring table. Were the scoring table developed using only the information on the known recidivists and nonrecidivists, it would misrepresent the actual population to which it is to be applied. Similarly, had all technical violators arbitrarily been combined with the recidivists, the scoring scheme would misrepresent those who appear more similar to the nonrecidivists. (p. 2)

Once Costantino had completed the development of the classification scale excluding the technical violators (TV’s), he compared the TV’s to the recidivists (R’s) and the non-recidivists (NR’s). This comparison is documented in Appendix A of the “CARAS Information Request” document. On page 3 of the report it indicates that the distribution of TV’s into the 5 categories of risk (very low, low, medium, high, very high) was very even. It was argued that if TV’s looked more like recidivists, then their risk category distributions would look more like recidivists than non-recidivists. In fact, it looks like neither. This indicates to me that the characteristics of technical violators as summarized by their risk scalar value seems to be midway between the recidivists and non-recidivists, where the classification development was based on returns to prison based for felony filings.

I have dwelled on this part of the scale development because it is a major concern of the DCJ. It is clear to me that their choice to use only the returns to prison based on felony filings was a valid choice.

Development Method

Variables. The techniques Costantino used to develop and validate the risk classification system are quite systematic and technically proficient. The sample sizes are large. He used a development and validation sample. The pool of automated risk predictors is also quite large and very comprehensive. The fact that the Level of Supervision Inventory (LSI) is only one of a host of potential predictors culled from their automated system shows the richness of the pool of predictors. The LSI does include criminal history information in its scoring, yet Costantino demonstrates the prediction can be improved with other risk factors including criminal history elements. Also, the fact that all of these are automated elements means that there is a built in efficiency to the process. No extra paperwork has to be done.

I looked closely at the variable list in Appendix C. The factors are quite comprehensive including socio-demographic, extensive criminal history including juvenile record, psycho-social factors, mental health, education, peer relationships, drug history, attitudes and emotions, employment prior to prison, characteristics of the current offense, and conduct in prison.

The technical steps in the scale development are outlined in Appendix D. I asked Mr. Costantino for clarification of some of these steps and he provided me with a lengthy exposition which was extremely helpful. In fact, his memo could be incorporated into any further CARAS development documentation.

Post-release period. After getting the data, the first major step for Costantino was to determine an optimal time frame for the recidivism analysis. Costantino used procedures to choose the most optimal post-release period to develop the risk classification procedure. He selected a prediction set of variables that could be used for a 2,3,4, or 5 year post-release time frame. He then evaluated the percentage of the correct classification of parole successes excluding the TV's. He also evaluated the overall correct classification of the prediction set over time and found that the highest percent of correct classification for both successes and failures occurred at three years.

Missing data. Missing data were handled in an appropriate way similar to the method the U. S. Census Bureau uses in its "hotdeck" procedure. Because missing data could be present when CARAS is used to score offenders, DCJ needed a system to incorporate missing data into the final score. An analyst could have used modern missing data imputation procedures to do the scale development; however, when missing data did occur as staff tried to use the new scale, this would have been a big problem and would delay classification until the data were entered.

Predictor selection. To select items from the pool of 177 as the best predictor set, Costantino describes using divergence tests composed of standardized difference test in the mean values for the recidivists and non-recidivists. This allowed him to pare down the original large pool of predictors into 25. He then used a discriminate analysis procedure entering all 25 variables simultaneously to uncover predictors that were highly correlated. He then did a stepwise discriminate analysis to see how individual predictors affected the both the discriminant power of other variables and the overall correct classification rate. This led to the final set of 9 variables.

Costantino translated the 9 predictors into Rate Increase Factor form. He applied this weighting to the recidivists, non-recidivists and technical violators. Even though the scale development excluded the TV's, he wanted to see how they would score on the CARAS to compare their "risk" levels to the

recidivists and non-recidivists. This is where they appear to be somewhat more like the non-recidivists although they are equally distributed over the five risk categories – very low to very high.

Costantino compared logit and OLS regression to see which produced better weights for purposes of classification. The logit estimation procedure was better. Using the logit weights, he reclassified the TV's into recidivists and non-recidivists based on their classification result. As I have already said, although this was not the only way to approach this problem, however, this was a reasonable way to address the issue.

The final scale values were based on translating the coefficients for the logistic prediction equation. A "Rate Increase Factor" (RIF) was based on forming the ratio of the recidivism percentage in a given category to the lowest ranked category for a given variable. For example, the variable arrested under the age of 16 has a no and yes category. The lowest recidivism percentage is the "no" category and this receives a RIF of 1.0. Comparing the recidivism percentage of those who had an arrest prior to 16 (47.1%) versus those that did not (38.75%) produces the ratio $47.1/38.75 = 1.46$. This is the Rate Increase Factor. The logit coefficient for this variable was 1.13. The final weight was the logit coefficient times the Rate Increase Factor times 10 rounded to the nearest integer. In this case, that produced a weight of 11 for those offenders who did not have an arrest under the age of 16 and a weight of 17 for those that did. The intercept was also weighted as well. Using this composite set of weights, an offender can get a score between 1 and 79.

Classification. The acid test of a classification system is how well it discriminates between recidivists and non-recidivists and the extent to which people are not being correctly classified. CARAS has a correct classification percentage of about 71 percent and receiver operating characteristic AUC (area under the curve) of .76. This latter measure is a summary of correct classification to incorrect classification. These are quite good. The scale divergence criterion is also good, close to a 1 unit standardized difference. Of course, future validation will insure that population characteristics may not change the scale validity values.

The "CARAS Review Request" also has a short discussion on reliability. This is the psychometric notion that different people will score the scale the same way (inter rater reliability) or that if the scale is measured over time on the same person and the risk items do not change, one will get the same scale result. I think the best way to handle inter rater reliability is to do auditing of the data entry to insure it is being done correctly.

There was a special discussion of CARAS's ability to classify violent and sex offenders. On pages 14-17 of the document "CARAS Information Request," there are data on how each of the scale items compares for the violent versus non-violent subgroups and the sex offender versus non sex

offender subgroups. CARAS rank orders these subgroups correctly for each of the scale categories very low to very high risk. There is very little difference between the average scores on each of the scale items for the violent versus non violent, and sex offender versus non sex offender subgroups. The correct classification levels are comparable for the sex offender and the overall sample on which CARAS was developed and validate. The correct classification percentage for the violent subgroup may be slightly better than the overall sample. These data show the validity of CARAS for predicting whether someone will return to prison for a new felony filing whether they are violent offenders or sex offenders.

Summary

Taking everything together, this was a competent and well executed scale development process and the fact that this is based on automated items makes it an efficient process going into the future.

Future steps. One issue DCJ should be aware of for future scale development is that criminologists are now questioning how risk classification and the criminal justice response affects outcomes. There is a seminal paper by Bushway and Smith, (2007). The argument is that risk classification and other predictive criminal justice tools are not used in a vacuum. So that people who get a high risk classification may have their parole delayed or may have closer supervision when released to the community. The former may decrease recidivism (age, maturation effect). The latter may increase the possibility of a technical violation (closer scrutiny, more conditions of supervision). This is a complication most analysts are ignoring when they do scale development and it is a very difficult issue. I thought that it is important to point out that criminologists are beginning to tackle this problem and that DCJ should be aware of the issue for future scale development. There are also a host of new techniques that are being experimented within criminal justice to classify populations. One important technique is a recursive partitioning procedure called classification and regression trees (CART). CART has been used by Berk (2008) to uncover classification rules for quite rare criminal justice events. Again, this and similar tools are cutting edge and are not yet widely accepted. Nor are there readily available tools to do these analyses. CART is available in SPSS, but not some of the additional tools to refine the classification tree. There are procedures implemented in the R statistical set of packages. The advantage to regression trees is that it can reveal complicated underlying relationships between variables that are not readily revealed with standard classification procedures.

References

Berk, R. A. (2008) *Statistical Learning from a Regression Perspective*, New York” Springer

Bushway, S., & Smith, J. (2007). Sentencing Using Statistical Treatment Rules: What We Don't Know

Can Hurt Us. *Journal of Quantitative Criminology* , 377-387.



M E M O R A N D U M

to: Kim English, Ph.D., Research Director, Colorado Division of Criminal Justice
from: Christopher Baird, Executive Vice President, National Council on Crime and Delinquency
subject: Review of CARAS-5
date: September 3, 2009

Thank you for the opportunity to review all of the analyses conducted to develop the CARAS-5. Prior to discussing the CARAS-5, I want to provide a short summary of my experience.

I have been involved in risk assessment research since 1972, working in adult corrections, juvenile justice, and child welfare. Over the last 20 years, Dr. Dennis Wagner and I have completed over 50 development and validation studies of risk instruments. The risk assessment model we developed for child welfare, Structured Decision Making[®], is the most widely used case management system in the world. In 1980, I developed a probation and parole risk assessment system for the National Institute of Corrections. As recently as 2001, a National Institute of Justice survey found that this system was still used by 60% of the probation and parole agencies that responded to the survey. Our research on risk assessment has garnered several national awards over the years.

Overall, I found the research supporting the CARAS-5 to be very solid; in some respects it was quite innovative. Established research protocols were used and all of the statistical methods employed were appropriate. The study cohort was large (5,850 cases) and was appropriately divided into development and validation samples. The follow-up period (36 months) is actually longer than what is found in most studies and adds to the strength of the analysis. The level of discrimination attained between risk groups was excellent, rivaling anything the National Council on Crime and Delinquency (NCCD) has developed or reviewed. I should note that it is always preferable to use a risk instrument developed for a specific state's population, rather than importing a generic system such as LSI or COMPAS. The CARAS-5 will undoubtedly outperform such models.

There are two issues that are critical to evaluating the efficacy of a risk assessment instrument. First, it is important that each risk level contains enough cases to make each designation meaningful. The dispersion of cases across CARAS-5 risk levels is quite good, ranging from a low of nearly 13% for the very low risk category to 31.6% for the very high risk category. Second, recidivism rates observed should increase significantly as risk levels increase. The "spread" attained for CARAS-5 (17.2% to 76.1%) is very impressive. It is also impressive that the spread attained was replicated in the validation sample.

Separate analyses were conducted to test the utility of the CARAS-5 in assessing risk for violent offenders and for sex offenders. The CARAS-5 does very well with both groups. As expected, violent offenders have a lower overall rate of recidivism than property offenders—about half of all violent offenders rate low or very low risk, with a combined recidivism rate of under 15%—while the recidivism rate for very high risk violent offenders was nearly 74%. The level of discrimination attained for sex offenders was somewhat lower, but still impressive, ranging from 15% for the lowest risk group to 62% for the highest risk group.

Technical violators (TVs) were treated differently than what NCCD usually encounters. However, I feel the actions taken were not only appropriate, but innovative. TVs were omitted from the initial scale construction effort, based on the fact that they were neither “failures”—no new crime was reported—nor were they successes, as they had been returned to prison following parole. Omitting these offenders from the initial analyses allowed for the development of a pilot risk instrument based on cases that were either “true failures” or “true successes.” Scoring the TVs on the pilot scale revealed that most (two thirds) fell into the lower risk levels and therefore were likely “successes.” This finding may indicate that Colorado parole officers are initiating revocations too quickly. This would correspond with trends NCCD has seen in the other states where rates of technical violation have increased in recent years. To the extent that this adds to the time that offenders representing little risk to public safety spend in prison, it is a misallocation of resources.

TVs were added to the analysis to derive the final scale. While the manner in which TVs were added is different than the typical approach used by correctional researchers, I am convinced that the integrity of the analysis was preserved and that there was minimal impact on the model’s ability to correctly classify offenders into different risk levels. In fact, given the high rate of technical violations, I believe that the approach taken in the Colorado analysis is superior to simply categorizing all TVs as recidivists (an approach frequently used by other researchers).

NCCD does have three recommendations. First, while the 2002 validation sample indicates that the CARAS-5 is quite robust (that is, it will work well across populations and perhaps over time) further analysis would prove beneficial. Given the potential value of the instrument in assisting the parole board and parole officers with public safety issues, it would be wise to further validate the CARAS-5 using release cohorts from 2003, 2004, and 2005. These cohorts would provide a minimum of a three-year follow-up after release from prison and test the instrument’s validity on more recent parolees. NCCD sees this step as critically important. If the CARAS-5 works well with these populations, its validity cannot be questioned, and the results should engender greater confidence in those who use the instrument to assist with decision making.

Second, we suggest further study of technical violators. It is clear that a significant number of low risk parolees are being returned to prison for technical violations of parole. Steps could be implemented that would enhance parole success rates and lower the cost of corrections. Such steps could include the following:

- Identifying lower risk parolees who are most at risk of a technical violation and alerting parole officers so that proactive actions can be taken;
- Providing parole with a system of graduated sanctions that keeps these offenders in the community whenever possible;

- Training officers to more effectively supervise these offenders in the community; and
- Training parole officers to use sanctions other than prison when possible.

Finally, while the CARAS-5 is valid across racial groups and for female offenders, there are some “overlaps” in the recidivism rates by risk level between groups. For example, low risk males had a recidivism rate of 23.5%; moderate risk females had a recidivism rate of 22.6%. Thus, these two groups, in terms of their risk of recidivating, are very similar, but the risk labels attached to each group may result in different actions by either the parole board or parole officers. These issues are easily addressed, either by policy or changes in risk labeling that better reflect the base expectancy rates established for each subgroup. One possible solution for female offenders is presented in the table below.

Risk Group	Recidivism Rates		
	Males	Females	Possible Solution: Female Risk Categories
Very Low	18.0%	7.3%	Very Low
Low	23.5%	18.5%	
Medium	33.6%	22.6%	Moderate
High	46.8%	36.5%	
Very High	76.1%	76.3%	Very High

Combining risk groups for females into three categories—very high, moderate, and very low—would provide greater equity and eliminate “crossover” of recidivism rates among risk groups. Obviously, there are other possible solutions to these issues, but to ensure equity, the “overlap issue” should be addressed.

Summary

The CARAS-5 is a well-constructed scale with discriminatory power rivaling (and for the most part, surpassing) other risk models used across the nation. Great attention was paid to details often overlooked by researchers, and the developer introduced a creative method for dealing with technical violators. The CARAS-5 has substantial value to decision makers in Colorado and should be quickly validated using more recent release cohorts. NCCD’s experience suggests their instrument will prove robust over time in Colorado.

Please feel free to contact me with questions or if additional information is needed. It was a pleasure to work with your development team and to review work of this quality.

APPENDIX C

**RESEARCH REQUEST FORM
(OPA 93-R-1)**

RESEARCH REQUEST FORM - OPA 93-R-1

Colorado Department of Corrections
Office of Planning and Analysis
Research and Evaluation Project Request Requirements

Pursuant to the Colorado Department of Corrections administrative regulation 1400-03, both outside research proposals and internal research proposals must be reviewed by the manager of Planning and Analysis, and recommended to the executive director for approval, prior to the start of any research or evaluation project. The requirements for submitting research proposals include the following:

1. Title of project.
Ongoing Parole Guidelines Study per C.R.S. 17-22.5-404.5 and SB09-135
2. Principal researcher (name, address, telephone number, supporting agency).
Kim English, DCJ, 700 Kipling, Denver, 80215 303.239.4453
3. Research persons (names, addresses, telephone numbers, supporting agency).
Linda Harrison, Kevin Ford, Christine Adams, Kerry Lowden, same as above
4. Study goal(s).
Comply with Colorado statute; identify reasons for parole board release and revocation decisions.
5. Study justification.
See above #5.
5. Study start date/completion date.
Immediately, ongoing.
6. Institutional DOC employee, contract worker, or volunteer liaison.
For DOC to decide
7. DOC resources, DOC employees, contract workers and volunteers required.
For DOC to decide.
9. Study facility(ies).
n/a
10. Sampling procedure.
No sampling; all cases required.
11. Sampling criteria.
n/a
12. Research instruments.
CARAS, Supplemental Information Form, LSI scores on individual items, data elements from all forms provided to the parole board by case managers
13. Data items required.
See #12 above. Data items are drive by information considered by the board members and ALJs when making decisions about release and revocation. NOTE THAT THESE ITEMS MAY CHANGE OVER TIME.

14. Data collection instruments.
See #12 and #13 above.

15. Security procedures to protect privacy of participants.

Data Storage. All data will remain in electronic format, housed on the Colorado Department of Public Safety's main server. Data security is of utmost concern to the Department. Department-wide security conventions are already in place, and all research-related materials are protected by these measures. All desktop computers in the Department are password protected.

Confidentiality. Since it is necessary that individual identifiers remain intact in order to track criminal justice system involvement, no such identifiers will be included on any analysis output. All data presented to others will be in aggregate form only.

16. Prospective impact on institutional operations.
n/a

17. IRB or Interagency Committees (IAC) Privacy and Research Review Board approval.
DCJ included the cost of an IRB in the fiscal note for SB09-135. Fiscal analyst received verbal commitment from DOC representatives that the IRB would be waived for this ongoing study.

Submitted May, 2009

APPENDIX D

2008 COLORADO ACTUARIAL RISK ASSESSMENT SCALE (VERSION 5)

2008 Colorado Actuarial Risk Assessment Scale (CARAS) 9-Item Instrument

The 2008 CARAS predicts the following events for those released from prison:

- *rearrest for any crime,*
- *rearrest for a violent crime, and*
- *new court filing.*

New court filing was the outcome measure used in the development of the instrument.

**** CONSTANT -88 ****

1. NUMBER OF CURRENT CONVICTION CHARGES

The total number of criminal conviction charges associated with the current incarceration.

	<u>Points</u>
1	12
2	21
3 to 4	23
Missing & 5 or More	33

2. NUMBER OF COPD VIOLATION CONVICTIONS

The total number of COPD infractions offender has been convicted of (this incarceration as well as prior incarcerations).

None	6
1 to 3	8
4 to 9	9
10 or More	12

3. LSI TOTAL SCORE

The total of the 54 Level of Supervision Inventory (LSI) items

20 or Lower	6
21 to 29	10
Missing & 30 to 38	12
39 or More	15

4. ARRESTED UNDER AGE 16

Offender was arrested for criminal activity before age 16, according to LSI instrument.

Missing & No	11
Yes	17

5. AGE AT RELEASE

Age offender attains when released this time on parole.

47 or Older	9
40 to 46	18
39 or Younger	23

6. ASSESSED CUSTODY LEVEL

Offender is assessed at minimum or minimum restrictive custody level supervision at time of release.

Yes	5
No	8

7. PRIOR PAROLE RETURN ON NEW CRIME

Offender has been returned to prison from a prior parole as a result of a new crime. Does not include returns for technical violations. Includes all prior incarcerations at DOC.

No	4
Yes	6

8. INCARCERATION #

The number of prison incarcerations resulting from a new court commitment offender has experienced. This does not include returns to prison for parole violations.

1	23
2	30
3 or More	35

9. SUBSTANCE ABUSE NEED LEVEL

The DOC case management level of need for substance abuse treatment determined during the initial needs assessment

Missing & 1 or 2	13
3 or More	18

Brief Description

- The scale was built and validated on a group of all offenders released from DOC in FY2002 (611 women and 4769 men; 470 sex offenders; 5850 total).
 - The scale was validated on a hold-out sample and again on sex offenders.
 - The scale's predictive accuracy held almost perfectly on the validation sample, meaning that the scale is very stable.
- More than 175 possible predictors were analyzed. The 9 final CARAS risk factors captured the maximum predictive power resident in the development database.
- The scale's accuracy depends on using the instrument with ALL the 9 items. Using the items individually will not predict recidivism accurately.
- One-third of the technical violators statistically resembled the recidivists, and two-thirds statistically resembled the NON-recidivists.
- For the purpose of developing the scale, recidivism was defined as new court filing within 3 years; however the scale also predicts any new arrest following release from prison.
 - For each increasing risk category, risk for
 - any new arrest increases 81%;
 - risk for a violent arrest increases 30%.
- The overall new court filing recidivism rate of the group of the 2002 release group was 47%.
- The new CARAS has 5 risk categories: (1) very low, (2) low, (3) medium, (4) high, and (5) very high.

<u>CARAS Risk</u>	<u>Recidivism(New Felony Filing) Rate</u>
Very Low	17.2%
Low	23.0%
Medium	32.4%
High	45.6%
<u>Very High</u>	<u>76.1%</u>
Overall	45.5%

- About 1/3 of the 2002 releases were very high risk, with 76% recidivating (3 out of 4).
- The very low risk groups recidivates at less than half the rate of the entire sample, at about 23% (about 1:5), demonstrating that the scale discriminates among risk groups very well.

- The scores range from 1-79.
 - This large score range significantly increases the precision of the instrument, and would be impossible to implement (with confidence that it would be consistently scored and added correctly) if the CARAS had to be hand-completed.
 - BT at DOC will ensure that the instrument is self-populating in DCIS.
- The average score for men is 38.1 and for women is 38.5 (no statistically significant difference).
- The scale can be used at various decision points in the release process, and can provide risk assessment information to the parole board, community corrections boards, and parole officers in the community.

Additional information about those in the risk categories:

- There is no real difference in gender across risk categories
- There is no real difference in ethnicity across risk categories
- There is no difference in mental health scores (P code), but those with high medical needs are about twice as likely to be low/lower risk
- There is no difference in risk level across incoming crime type. The categories for this analysis were violent, drug, escape, property, other nonviolent
- Those with NO escape charges or 1 escape charge are in the lower risk/med risk categories
- Those in the lower/low risk categories tend to have good attitudes, good companions, OK employment and substance abuse histories

Lower risk groups

- Nearly everyone in the low and lowest risk categories were classified as a “new court commitment” or a parole return/no new crime (DOC “most recent prison admission type”)
- Half of the lower/low offenders have a Felony Class 1 or 2 index crime (there were only 51 among the 2002 releases, about 1 percent of all those released on parole)
- The lower risk group is slightly more likely to be comprised of F6s
- Many of the low risk folks have very high vocational needs
- Many had poor family support on the LSI

High risk groups

- Those in the high risk group are much more likely to have anger problems
- Those in the high risk categories are likely to be serving a sentence for multiple drug counts
- Those with multiple violent index crimes are about twice as likely to fall in the very high risk category
- Those with MULTIPLE counts of escape are in the very high risk category
- Those in the very high risk category tend to have a bad attitude
- Those in the very high risk category are likely to be in medium and close custody

2002 DEVELOPMENT & SEX OFFENDERS COMBINED									
Low	High								
Final	Final							Ratio	Recidivism Rate
Scale	Scale	Risk	Non-			% of	Recidivis	to	Incremental
<u>Valu</u>	<u>Valu</u>	<u>Group</u>	<u>Recidivist</u>	<u>Recidivist</u>	<u>Total</u>	<u>Total</u>	<u>m</u>	<u>Very</u>	<u>Increase</u>
<u>e</u>	<u>e</u>		<u>s</u>	<u>s</u>			<u>Rate</u>	<u>Low</u>	
								<u>Very</u>	
								<u>Low</u>	
1	23	Very Low	610	127	737	12.60%	17.23%	Low	Very Low
24	31	Low	821	245	6	18.22%	22.98%	1.33	33%
32	36	Medium	604	290	894	15.28%	32.44%	1.88	41%
					1,30				
37	43	High	710	595	5	22.31%	45.59%	2.65	41%
		<u>Very</u>			<u>1,84</u>				
<u>44</u>	<u>79</u>	<u>High</u>	<u>441</u>	<u>1,407</u>	<u>8</u>	<u>31.59%</u>	<u>76.14%</u>	<u>4.42</u>	<u>67%</u>
					<u>5,85</u>	<u>100.00</u>			
All	All	All	3,186	2,664	0	%	45.54%		

2002 CARAS DEVELOPMENT SAMPLE									
Low	High								
Final	Final							Ratio	Recidivism Rate
Scale	Scale	Risk	Non-			% of	Recidivis	to	Incremental
<u>Valu</u>	<u>Valu</u>	<u>Group</u>	<u>Recidivist</u>	<u>Recidivist</u>	<u>Total</u>	<u>Total</u>	<u>m</u>	<u>Very</u>	<u>Increase</u>
<u>e</u>	<u>e</u>		<u>s</u>	<u>s</u>			<u>Rate</u>	<u>Low</u>	
								<u>Very</u>	
								<u>Low</u>	
1	23	Very Low	472	102	574	10.67%	17.77%	Low	Very Low
24	31	Low	716	225	941	17.49%	23.91%	1.35	35%
32	36	Medium	554	272	826	15.35%	32.93%	1.85	38%
					1,24				
37	43	High	680	564	4	23.12%	45.34%	2.55	38%
		<u>Very</u>			<u>1,79</u>				
<u>44</u>	<u>79</u>	<u>High</u>	<u>421</u>	<u>1,374</u>	<u>5</u>	<u>33.36%</u>	<u>76.55%</u>	<u>4.31</u>	<u>69%</u>
					<u>5,38</u>	<u>100.00</u>			
All	All	All	2,843	2,537	0	%	47.16%		

2002 SEX OFFENDER SAMPLE									
Low	High								
Final	Final						Recidivism	Ratio	Recidivism
Scale	Scale	Risk	Non-	Recidivist		% of	m	to	Incremental
<u>Value</u>	<u>Value</u>	<u>Group</u>	<u>s</u>	<u>s</u>	<u>Total</u>	<u>Total</u>	<u>Rate</u>	<u>Very</u>	<u>Increase</u>
<u>e</u>	<u>e</u>							<u>Low</u>	
								<u>Very</u>	
1	23	Very Low	138	25	163	34.68%	15.34%	Low	Very Low
24	31	Low	105	20	125	26.60%	16.00%	1.04	4%
32	36	Medium	50	18	68	14.47%	26.47%	1.73	65%
37	43	High	30	31	61	12.98%	50.82%	3.31	92%
		<u>Very</u>							
<u>44</u>	<u>79</u>	<u>High</u>	<u>20</u>	<u>33</u>	<u>53</u>	<u>11.28%</u>	<u>62.26%</u>	<u>4.06</u>	<u>23%</u>
						100.00			
All	All	All	343	127	470	%	27.02%		