Research Fact Sheet

Replications of the *Violence Risk Appraisal Guide* or *Sex Offender Risk Appraisal Guide* in Assessing Violence Risk

This list summarizes all known tests of the VRAG and SORAG. The average ROC area* for the prediction of violent recidivism here is .72 for the VRAG and .73 for the SORAG (based on samples that overlap with neither the development sample nor each other). When scored according to recommended procedures for violent recidivism, the VRAG and SORAG exhibit large mean predictive effects, and no evidence of "allegiance" (Harris, G.T., Rice, M.E., & Quinsey, V.L. (2010). Allegiance or fidelity? A clarifying reply. *Clinical Psychology: Science and Practice, 17*, 82-89.). ROC areas are larger when actuarial instruments are scored with high reliability, without dropping or substituting items, and when there is little variation in the length of the follow-up. (Harris, G.T. & Rice, M.E. (2003). Actuarial assessment of risk among sex offenders. *Annals of the New York Academy of Sciences, 989*, 198-210.)

Actuarial assessments predict criminal, violent or sexual recidivism better than unaided clinical judgment and better than structured professional discretion or empirically-guided approaches. The VRAG and SORAG are the most accurate assessments available for violent or sexual recidivism. (Hanson, R.K. & Morton-Bourgon, K.E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis. *Psychological Assessment, 21*, 1-21; Campbell, M., French, S., & Gendreau, P. (2009). The prediction of violence in adult offenders: A meta-analytic comparison of instruments and methods of assessment. *Criminal Justice and Behavior, 36*, 567-590; Table 1).

71. Smid, W. J., Kamphuis, J. H., Wever, E. C., & Van Beek, D. J. (in press). A comparison of the predictive properties of nine sex offender risk assessment instruments. *Psychological Assessment.*

> In a sample of 330 Dutch sex offenders released from secure custody and followed up for an average of 12 years, the base rate of violent recidivism (some of which was not actually violent) was 34%. SORAG scores predicted dichotomous violent recidivism with an ROC area of .73, and also significantly predicted rapsheet sexual recidivism, the number of violent (and rapsheet sexual) reoffenses, and the rapidity of reoffending. No assessment outperformed the SORAG for either outcome while it was more accurate than the SVR-20. At the item level, there was a significant association between predictive accuracy and scoring reliability.

70. Rossegger, A., Endrass, J., Gerth, J., & Singh, J.P. (2014). Replicating the Violence Risk Appraisal Guide: A total forensic cohort study. *PLoS One, 9*: e91845.

In 206 male offenders from one Swiss canton, VRAG scores predicted violent recidivism (base rate = 18%) with an ROC area of .72. Observed proportions of violent recidivists (based mainly on convictions) in some VRAG categories were significantly lower than those based on charges and convictions combined, previously given as VRAG norms.

69. Pouls, C., Jeandarme, I., & Habets, P. (2014). Risicotaxatie bij daders met een verstandelijke beperking. Eerste toepassing Nederlandstalige VRAG. *De Psycholoog, 1,* 42-51. English title: Risk assessment in offenders with intellectual disability: A first application of the Dutch VRAG.

In 52 Belgian offenders with intellectual disability, the VRAG (scored with very high reliability, $r = .90$) predicted subsequent physical aggression scored via a staff rating scale (base rate = 12%) with an ROC area = .74, $p < .05$, 1-tailed.

68. Fitzgerald, S., Gray, N.S., Alexander, R.T.,… & Snowden, R.J. (2013). Predicting institutional violence in offenders with intellectual disabilities: The predictive efficacy of the VRAG and the HCR-20. *Journal of Applied Research in Intellectual Disabilities, 26*, 384–393.

In a sample of 70 (55 male; 25 qualifying for a diagnosis of intellectual disability) capable and volunteering medium security patients, VRAG scores (scoring reliability not reported) predicted the frequency and severity of institutional aggression recorded in hospital notes over six months with large effects. Predicting dichotomous violence and severe violence yielded ROC areas approximately = .70 and .71, respectively (base rates not reported). Overall, VRAG and HCR20 performance did not significantly differ.

67. Rossegger, A., Gerth, J., Singh, J., & Endrass, J. (2013). Examining the predictive validity of the SORAG in Switzerland. *Sexual Offender Treatment, 8* (2).

In a sample of 137 treated sex offenders released from Swiss institutions, SORAG scores (scored with modest reliability) predicted violent recidivism with an ROC area = .69 (rate of violent recidivism = 16%). In this sample, the observed category-by-category rates of violent recidivism sometimes differed from published norms for seven years of opportunity, but the mean duration of this follow-up was not reported, clearly shorter than seven years, and not corrected for opportunity.

66. Chu, C.M., Thomas, S.D.M., Ogloff, J.R.P., & Daffern, M. (2013). The short- to medium-term predictive accuracy of static and dynamic risk assessment measures in a secure forensic hospital. *Assessment, 20*, 230-241.

In a sample of inpatients, VRAG scores (scored from hospital records without assessing reliability) were positively associated with which patients were recorded as exhibiting

interpersonal aggression over one month (n = 66, base rate =15%), three months (n = 48, base rate = 23%), and six months (n = 31, base rate = 26%), but not statistically significantly. Some measures were significant predictors over the shorter periods, but none met the authors' criteria for significance over six months.

65. Eisenbarth, H., Osterheider, M., Nedopil, N., & Stadtland, C. (2012). Recidivism in female offenders: PCL-R lifestyle factor and VRAG show predictive validity in a German sample. *Behavioral Sciences and the Law, 30*, 575-584.

In a sample of 80 released female offenders followed up after a mean of 8 years, VRAG scores had the largest predictive relationship with recidivism (31% general, 5% violent) with an ROC area = .72. HCR20 unrelated to any outcome.

64. Eher, R., Matthes, A., Schilling, F., Haubner-MacLean, T., & Rettenberger, M. (2012). Dynamic risk assessment in sexual offenders using STABLE-2000 and the STABLE-2007 : An investigation of predictive and incremental validity. *Sexual Abuse: A Journal of Research and Treatment, 24*, 5-28.

In a sample of 263 sex offenders released from prison in Austria and followed-up after 6.4 years, the base rate of violent recidivism was 40% and the SORAG (scored with high reliability, ICC = .93) predicted violent recidivism with an ROC area =. 75, larger than any of three other formal assessments evaluated. For violent recidivism, no other assessment made a statistically significant incremental contribution after consideration of SORAG scores.

63. Vitacco, M.J., Gonsalves, V., Tomony, J., Smith, B., & Lishner, D.A. (2012). Can standardized measures of risk predict inpatient violence? *Criminal Justice and Behavior, 39*, 589-606.

In a sample of 103 male forensic inpatients, VRAG scores (with the PCL-R eliminated) assessed in routine clinical practice predicted which would engage in a violent episode within six months (base rate = 21%) with an ROC area = .72. The complete VRAG predicted violence with an ROC area greater than .80.

62. Doyle, M., Carter, S., Shaw, J., & Dolan, M. (2012). Predicting community violence from patients discharged from acute mental health units in England. *Social Psychiatry and Psychiatric Epidemiology, 47,* 627-637.

In a sample of 114 volunteer psychiatric patients (38% female) released to the community, VRAG scores (partly based on interview) predicted subsequent violence (partly based on self-report) in a 20-week follow-up (base rate = 25%) with an ROC area

= .65, not significantly different from two other formal risk assessments. VRAG scores also predicted the frequency of subsequent violence.

61. Verbrugge, H.M., Goodman-Delahunty, J., & Frize, M.C.J. (2011). Risk assessment in intellectually disabled offenders: Validation of the suggested ID supplement to the HCR-20. *International Journal of Forensic Mental Health, 10*, 83-91.

In a sample of 59 intellectually disabled violent offenders, the VRAG (scored with modest reliability, ICC = .66) predicted which would be charged with a subsequent violent offense (base rate = 78%), in a 3.5 to 8.5-year follow-up, with an ROC area = .79 (ROC area = .92 for general recidivism), indistinguishable from two versions of HCR20.

60. Rossegger, A., Laubacher, A., Moskvitin, K., Villmar, T., Palermo, G., Endrass, J. (2011). Risk assessment instruments in repeat offending: The usefulness of FOTRES. *International Journal of Offender Therapy and Comparative Criminology, 55*, 716-731.

In a sample of 109 violent offenders released from a Swiss prison and followed-up nine years post-release, the VRAG (inter-rater reliability = .95) significantly predicted repetition of the index offense (base rate = 9%) with an ROC area of .70.

59. Hastings, M.E., Krishnan, S., Tangney, J.P., & Stuewig, J. (2011). Predictive and incremental validity of the Violence Risk Appraisal Guide scores with male and female jail inmates. *Psychological Assessment, 23*, 174-183.

In a sample of 328 male jail inmates, VRAG scores predicted the occurrence and frequency of institutional misconduct and aggression. In a one-year follow-up of 206 cases, VRAG scores predicted self-reported violent community recidivism (base rate = 20%) with an ROC area = .76, and were also correlated (r = .37) with the number of violent reoffenses. VRAG scores also predicted the occurrence and frequency of nonviolent community recidivism. In a sample of 83 female offenders, the base rates of recidivism were considerably lower and VRAG scores were also positively associated with occurrence and frequency of violent and nonviolent recidivism. Though lower, VRAG accuracies for females were not statistically significantly different from those for male offenders.

58. McDermott, B.E., Dualan, I.V., & Scott, C.L. (2011). The predictive ability of the Classification of Violence Risk (COVR) in a forensic psychiatric hospital. *Psychiatric Services, 62*, 430-433.

In a sample of 146 volunteer male and female forensic inpatients, VRAG scores predicted which would be recorded as having engaged in assaultive behavior over a 20-week period

(base rate = 15%) with an ROC area of .72, not significantly different from three other assessments tested.

57. Snowden, R.J., Gray, N.S., & Taylor, J. (2010). Risk assessment for future violence in individuals from an ethnic minority group. *International Journal of Forensic Mental Health, 9*, 118-123.

In a sample of 579 discharged forensic patients in a fixed two-year follow-up, VRAG scores predicted violent re-offending (base rate = 12%) with an ROC area = .76 (approximately .80 for males). In this study, the VRAG was significantly more accurate than the HCR-20 and each of its subscales.

56. Eher, R. (2010, September). *Clinical Aspects of risk assessment in pedosexual offenders*. Presented at the International Association for the Treatment of Sex Offenders Conference. Oslo, Norway.

In a sample of 127 child molesters followed-up after a mean of 6.4 years, SORAG scores predicted violent recidivism (base rate = 12%) with an ROC area = .75; equal to or larger than any other assessment examined. ROC area for the SORAG's prediction of "sexual recidivism" (half of which were "nonviolent") was .81.

55. Kingston, D.A., Seto, M.C., Firestone, P., & Bradford, J.M. (2010). Comparing indicators of sexual sadism as predictors of recidivism among adult male sexual offenders. *Journal of Consulting and Clinical Psychology, 78,* 574-584. [Overlaps with: Yaghoub, M.B., Fedoroff, J., Curry, S., & Amundsen, D.E. (2010). A time series modeling approach in risk appraisal of violent and sexual recidivism. *Law and Human Behavior, 34*, 349-366. Kingston, D.A., Yates, P.M., Firestone, P., Babchishin, K., Bradford, J.M. (2008). Long-term predictive validity of the Risk Matrix 2000: A comparison with the Static-99 and the Sex Offender Risk Appraisal Guide. *Sexual Abuse: A Journal of Research and Treatment, 20*, 466-484. Nunes, K.L., Firestone, P., Bradford, J.M., Greenberg, D.M., & Broom, I. (2002). A comparison of modified versions of the Static-99 and Sex Offender Risk Appraisal Guide. *Sexual Abuse: A Journal of Research and Treatment, 14*, 253-269.]

In 436 sex offenders (85% child molesters) assessed at an outpatient forensic psychiatric clinic followed up for an average of almost 11 years, SORAG scores predicted rap sheet sexual, violent, and general recidivism (base rates = 17%, 28%, and 37%, respectively) with ROC areas of .71, .74, and .75, respectively.

54. Rettenberger, M., Matthes, A., Boer, D., Eher, R. (2010). Prospective actuarial risk assessment: A comparison of five risk assessment instruments in different sexual offender subtypes. *International Journal of Offender Therapy and Comparative Criminology, 54,* 169-186.

In a sample of 394 adult male sex offenders released from Austrian institutions and followed-up after an average of 3 years, the SORAG yielded the best accuracy in predicting violent reconviction (base rate 12%) with an ROC area of .72.

53. Wanner, J.L. (2009). *Differential prediction of institutional misconduct: An examination of the Violence Risk Appraisal Guide (VRAG) across ethnicity and mental illness.* Unpublished dissertation. University of Tulsa.

In a sample of 50 correctional inmates, VRAG scores (administered by interview without assessing reliability, and not blind to outcome) had a small association with prior institutional aggression in 10 years of records (ROC area = .56), but did predict officially recorded and self-reported subsequent violent institutional misconduct (ROC area = .69) over three months.

52. Snowden, R.J., Gray, N.S., Taylor, J., & Fitzgerald, S. (2009). Assessing risk of future violence among forensic psychiatric inpatients with the Classification of Violence Risk (COVR). *Psychiatric Services, 60*, 1523-1526.

In 52 forensic patients, VRAG scores best predicted which ones committed at least one act of physical aggression over a two-year period with an ROC area = .77. VRAG scores also best predicted the frequency of aggression, $r = .54$.

51. Ho, H., Thomson, L., & Darjee, R. (2009). Violence risk assessment: The use of the PCL-SV, HCR-20, and VRAG to predict violence in mentally disordered offenders discharged from a medium secure unit in Scotland. *The Journal of Forensic Psychiatry & Psychology, 20*, 523–541.

Among 96 patients from a Scottish medium security psychiatric unit, VRAG scores predicted any and serious subsequent violence over a two-year follow-up (base rates = 41% and 4%) with ROC areas of .68 and .74, respectively. Several subjects were lost to follow-up, but were nevertheless included in the sample. Some scoring was not blind to outcomes and reliability was not assessed. The VRAG was the best performing assessment examined.

50. Coid, J., Yang, M., Ullrich, S., Sizmur, S., Roberts, C., Farrington, D.P., & Rogers, R.D. (2009). Gender differences in structured risk assessment: Comparing the accuracy of five instruments. *Journal of Consulting and Clinical Psychology, 77*, 337-348. [Overlaps completely with: Coid, J., Ullrich, S., Zhang, T., Sizmur, S., Farrington, D., & Rogers, R. (2011). Most items in structured risk assessment instruments do predict violence. *Journal of Forensic Psychiatry and Psychology, 22,* 1-21.]

In a sample of 1343 male volunteers imprisoned in Britain mostly for violent offenses, pre-selected to be high risk, and then followed-up after less than two years, the VRAG (principally scored by interview without assessing reliability) predicted violent post-release reconviction (base rate = 13%) with an ROC area = .70. For violent recidivism, no assessment and no optimal combination of items from all instruments yielded significantly better accuracy, while VRAG scores were significantly more accurate than the PCL-R, and each subscale of the HCR20. VRAG scores also significantly predicted acquisitive reconviction (base rate = 22%) and reconviction overall (45%), and significantly predicted all three outcomes among 302 released women prisoners.

49. Lindsay, W.R., Hogue, T., Taylor, J.L., Steptoe, L., Mooney, P., O'Brien, G., Johnston, S., & Smith, A.H.W. (2008). Risk assessment in offenders with intellectual disability: A comparison across three levels of security. *International Journal of Offender Therapy and Comparative Criminology, 52*, 90-111.

In 212 adult male forensic patients with intellectual disability, most of whom had a history of prior violent or sexual offenses, the VRAG yielded an ROC area of .71 in predicting violent recidivism (assessed by nursing notes) in a one-year follow-up. Among several assessments evaluated, the VRAG was outperformed by none while it was more accurate than some.

48. McDermott, B.E., Quanbeck, C.D., Scott, C.L., Edens, F., & Busse, D. (2008). Examining the role of static and dynamic risk factors in the prediction of in-patient violence. *Law and Human Behavior, 32,* 325-338.

In 108 volunteers (84% male) from a 1,200-bed psychiatric hospital, VRAG scores predicted which would have any physical aggression (base rate = 16%) toward staff members recorded in incident reports over a 2.5 year period (ROC area = .65); VRAG scores not significantly associated with reports of aggression to patients.

47. Endrass, J., Rossegger, A., Frischknecht, A., Noll, T., & Urbaniok, F. (2008). Using the Violence Risk Appraisal Guide (VRAG) to predict in-prison aggressive behavior in a Swiss offender population. *International Journal of Offender Therapy Comparative Criminology, 52*, 81-89.

In 106 male Swiss prisoners with a violent or sexual offense and a psychiatric evaluation, the authors stated that VRAG score (independent of other variables evaluated) predicted recorded institutional infractions (ambiguously defined) over an average of 4.6 years, significantly for verbal aggression and nonsignificantly for violence.

46. Hilton, N.Z., Harris, G.T., Rice, M.E., Houghton, R.E., & Eke, A.W. (2008). An indepth actuarial assessment for wife assault recidivism: The Domestic Violence Risk Appraisal Guide. *Law and Human Behavior, 32*, 150-163.

In 649 high-risk wife assaulters, the VRAG (missing 3 items) predicted wife assault recidivism as recorded in police data bases with an ROC area = .67. VRAG scores also predicted the number of recidivistic assaults, the total amount of injury to victims of recidivism, the number of severe assaults, and the seriousness of recidivism as indexed by the Cormier-Lang scale (*r*'s from .23 to .32).

45. Rosales, A.V. & Rossegger, A. (2008, April). *Validation and calibration of the VRAG in a Switzerland*. Presentation to the European Congress of Psychiatry. Nice, France.

In 103 released Swiss male prisoners, the VRAG (scored with a reliability of .95) yielded a statistically significant ROC area of .62 in predicting violent reconviction (base rate = 19%), and .78 for any reconviction (base rate = 58%). Duration of opportunity for violent recidivism was unclear.

44. Thomson, L., Davidson, M., Brett, C., Steele, J., & Darjee, R. (2008). Risk assessment in forensic patients with schizophrenia: The predictive validity of actuarial scales and symptom severity for offending and violence over 8-10 years. *International Journal of Forensic Mental Health, 7,* 173-189.

In 135 forensic patients (90% male) with schizophrenia, VRAG scores predicted violent recidivism (base rate = 5%) with an ROC area = .80. Psychotic symptoms and their severity were unrelated or inversely related to all measures of subsequent violence. VRAG scores were significantly positively related to discharge from high security and access to the community, and also to readmission -- objectively higher risk schizophrenic patients were more likely to be released.

43. Gray, N.S., Fitzgerald, S., Taylor, J., MacCulloch, M.J., & Snowden, R.J. (2007). Predicting future reconviction in offenders with intellectual disabilities: The predictive efficacy of VRAG, PCL-SV and the HCR-20. *Psychological Assessment, 19*, 474-479.

In a 5-year follow-up of 406 released male and female psychiatric patients, VRAG scores predicted conviction for a violent offense with an ROC area = .74, the largest effect of all instruments evaluated. VRAG scores were also the best predictor of general recidivism (ROC area = .73). VRAG accuracy was equivalent for intellectually disabled and other patients.

42. Snowden, R.J., Gray, N., Taylor, J., & MacCulloch, M.J. (2007). Actuarial prediction of violent recidivism in mentally disordered offenders. *Psychological Medicine, 37*, 1539-1549.

In 421 male forensic patients released from four institutions followed for 6.2 years, VRAG scores predicted which would be convicted of a violent offense (final base rate = 13%). ROC areas ranged from .86 to .76 in follow-up periods from 6 months to 5 years.

41. Langton, C.M., Barbaree, H.E., Seto, M.C., Peacock, E.J., Harkins, L., & Hansen, K.T. (2007). Actuarial assessment of risk for reoffense among adult sex offenders. *Criminal Justice and Behavior, 34*, 37-59.

In 468 sex offenders (93% of whom participated in prison-based treatment) followed for an average of six years, the base rate of violent recidivism, based on convictions, was 25%. ROC area for the VRAG was .70 and .71 for the SORAG, higher than four other actuarial tools studied. VRAG and SORAG scores also significantly predicted rap sheet sexual re-conviction. Predictive accuracy was generally greater when no items were missing and follow-up duration was constant.

Also: Barbaree, H.E., Seto, M.C. Langton, C.M. & Peacock. E.J. (2001). Evaluating the predictive accuracy of six risk assessment instruments for adult sex offenders. *Criminal Justice and Behavior, 28*, 490-521. And: Barbaree, H.E., Langton, C.M., & Peacock, E.J. (2006). The factor structure of static actuarial items: Its relation to prediction. *Sexual Abuse: A Journal of Research and Treatment, 18*, 207-226. And: Barbaree, H.E., Langton, C.M., & Peacock, E.J. (2006). Different actuarial risk measures produce different risk rankings for sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 18*, 423-440.

The first publication showed that a guided clinical assessment did not predict recidivism in 215 released sex offenders and that clinical assessments of treatment progress worsened accuracy. In the second, among all the instruments, the SORAG was best correlated with factors that predicted either violent or "sexual" recidivism. In the third, the distribution of SORAG scores closely matched the norms. For the VRAG, sex offenders tended to receive higher scores than normative samples of generally violent offenders. For instruments designed for different outcomes, the mean inter-correlation was .34; for those designed for “sexual” recidivism, mean inter-correlation was .52; and for violent recidivism, the inter-correlation was .84 (VRAG & SORAG).

40. Kroner, C., Stadtland, C., Eidt, M., & Nedopil, N. (2007). The validity of the Violence Risk Appraisal Guide (VRAG) in predicting criminal recidivism. *Criminal Behaviour and Mental Health, 17*, 89-100.

In 136 German forensic patients at risk for an average of 58 months, VRAG scores predicted re-conviction (base rate = 38%) with an ROC area = .70. For an estimated follow-up opportunity of 7 years, there was a very high association between observed rates and VRAG norms, $r = .941$.

39. Rettenberger, M. & Eher, R. (2007). Predicting reoffence in sexual offender subtypes: A prospective validation study of the German version of the Sex Offender Risk Appraisal Guide (SORAG). *Sexual Offender Treatment, 2*, 1-12. [Overlapped with: Eher, R., Rettenberger, M., Schilling, F., & Pfafflin, F. (2008). Failure of Static-99 and SORAG to predict relevant reoffense categories in relevant sexual offender subtypes: A prospective study. *Sexual Offender Treatment, 3*, 1-14.]

> In 254 sex offenders released from Austrian prisons and followed-up after an average of 39 months, the base rate of violent reconviction was 15%. ROC area for the prediction of violent reconviction was .76, and .82 for violent reconviction leading to imprisonment. Similar predictive accuracies were obtained for the prediction of violent recidivism among rapists and child molesters separately. In the overlapping sample, observed rates in 3.6 years of follow-up were lower than norms based on 7 years of opportunity.

38. Johansen, S.H. (2007). *Accuracy of predictions of sexual offense recidivism: A comparison of actuarial and clinical methods*. Dissertation Abstracts International: Section B: The Sciences and Engineering Vol 68(3-B), p. 1929.

> In 280 sex offenders followed-up for a minimum of 7 years, VRAG and SORAG (using the CATS instead of the PCL-R) predicted violent recidivism based on criminal charges (base rate = 18%) with an ROC area = .76, significantly better than clinical judgments (Static-99 = .72; RRASOR not significant). In simultaneous logistic regression, neither clinical judgments nor Static-99 scores made any significant improvement upon predictions made by the VRAG.

37. Knight, R.A. & Thornton, D. (2007). *Evaluating and improving risk assessment schemes for sexual recidivism: A long-term follow-up of convicted sexual offenders*. Unpublished report to the US Department of Justice. [Also Parent, G., Guay, J., & Knight, R. (2011). An assessment of long-term risk of recidivism by adult sex offenders. *Criminal Justice and Behavior, 38,* 188-209.]

> In 537 released sex offenders followed for 15 years, the VRAG predicted "sexual recidivism" (base rate approximately 25%) with a statistically significant ROC area of .61, and the SORAG (scored with reliability = .88) predicted the same outcome with an ROC area of .62. The prediction of violent recidivism was assessed but not reported. Some items were apparently erroneously added to the SORAG. In the Parent et al. (2011) article, VRAG and SORAG scores statistically significantly predicted nonsexual violent recidivism (5-year base rate = 10%) with ROC areas of .70 and .68, respectively, in a subsample. Overall, the VRAG and SORAG were the best performing of 11 instruments.

36. Yessine, A.K. & Bonta, J. (2006). Tracking high-risk, violent offenders: An examination of the national flagging system. *Canadian Journal of Criminology and Criminal Justice, 48*, 573-607.

In a high-risk sample of violent Canadian male prisoners, those released to the community exhibited very high rates of violent recidivism—45% reconvicted of a violent crime in a mean of 3.4 years. The VRAG (lacking the PCL-R, and with modifications to some other items) predicted violent recidivism with an ROC area = .73 among 165 offenders released. This modified VRAG was the second most accurate instrument reported and not significantly different from the best (SIR-R1) for violent recidivism. Reliability of measurement not reported.

35. Urbaniok, F., Noll, T., Grunewald, S., Steinbach, J., & Endrass, J. (2006). Prediction of violent and sexual offences: A replication study of the VRAG in Switzerland. *Journal of Forensic Psychiatry and Psychology, 17*, 23 - 31.

In 79 male violent and sex offenders in Switzerland, VRAG scores predicted officially recorded violent reconviction (base rate = 27%) with an ROC area = .72.

34. Looman, J. (2006). Comparison of two risk assessment instruments for sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 18*, 193-206.

Tested the Static-99 and SORAG in a high risk sample of 242 released sex offenders. Based on results reported, the SORAG predicted violent recidivism (base rate = 34%) with an ROC area of .70, significantly better than Static-99 (the two were equivalent for "sexual" recidivism). Rates of violent recidivism over 4.6-year follow-up for SORAG categories were lower than the SORAG norms based on 7 years.

33. Ducro, C. & Pham, T. (2006). Evaluation of the SORAG and the Static-99 on Belgian sex offenders committed to a forensic facility. *Sexual Abuse: A Journal of Research and Treatment, 18*, 15-25. [Also: Ducro, C., Claix, A., & Pham, T.H. (2002, September). *Assessment of the Static-99 in a Belgian sex offenders forensic population*. Presented at the European Conference on Psychology and Law, Leuven, Belgium.]

Compared SORAG and Static-99 in 147 released sex offenders over a mean 4.2 year follow-up. SORAG had highest inter-rater reliability (.92) and best prediction for any outcome: ROC area = .72 for violent recidivism. SORAG and Static-99 equally (and significantly) predicted general and "sexual" recidivism. In the earlier conference report, SVR-20 not significantly related to any outcome.

32. Doyle, M. & Dolan, M. (2006). Predicting community violence from patients discharged from community mental health services. *British Journal of Psychiatry, 189*, 520-526.

In 112 mostly nonforensic patients (75 of whom were male) followed up 24 weeks after discharge, the VRAG (missing three items) statistically significantly predicted self-

reported violence (base rate = 19%) with an ROC area of .66. [Because VRAG scoring was deliberately incorrect (i.e., based entirely on interviews and giving the lowest possible score instead of zero for the three missing items), the median above does not reflect this value.]

31. Quinsey, V.L., Jones, B., Book, A.S., & Barr, K.N. (2006). The dynamic prediction of antisocial behavior among forensic psychiatric patients. *Journal of Interpersonal Violence, 21*, 1539-1565.

In 198 forensic patients followed for an average of 33 months, VRAG category (scoring reliability was not assessed) distinguished those who had subsequent, mostly in-hospital, incidents of aggression, elopement, and criminality (base rate = 24%) with a statistically significant ROC area of .63, and those who had subsequent violent incidents (base rate = 12%) with a marginally significant ROC area of .59.

30. Pham, T.H., Ducro, C., Marghem, B., & Réveillère (2005). Evaluation du risque de récidivie au sein d'une population de délinquants incarceréré ou interné en Belgique francophone [Prediction of recidivism among prison inmates and forensic patients in Belgium]. (2005). *Annales Médico Psychologiques, 163*, 842-845.

In released offenders followed for an average of 3.4 years, 12% reoffended violently. For 114 scored on the VRAG, ROC area for the prediction of violent recidivism was .82. VRAG was the best predictor for all outcomes; prediction using VRAG categories significantly more accurate than HCR20.

29. Douglas, K., Yeomans, M., & Boer, D.F. (2005). Comparative validity analysis of multiple measures of violence risk in a sample of criminal offenders. *Criminal Justice and Behavior, 32*, 479-510.

Compared 93 violent offenders reconvicted of another violent offense to 95 without a violent reconviction on the VRAG, HCR20, and two versions of the Hare Psychopathy Checklist. Scores on all four were significantly related to offender group. Of fully implemented instruments, VRAG score was the best predictor of violent recidivism, ROC area = .79 in an average 7-year follow-up. Inter-rater reliability for the VRAG was .92 (compared to .41 for HCR20).

28. Mills, J.F., Jones, M.N., & Kroner, D.G. (2005). An examination of the generalizability of the LSI-R and VRAG probability bins. *Criminal Justice and Behavior, 32*, 565-585.

Studied 209 volunteer penitentiary inmates over a three-year follow-up. No mention of how VRAG was scored, mean number of missing items, or the reliability of assessment. VRAG significantly predicted violent recidivism (base rate = 29%) with an ROC area =

.65. No significant difference between the observed rates for VRAG categories and VRAG norms, goodness-of-fit chi-square (df = 7) = 11.08, ns.

This study overlapped with: Kroner, D. & Mills, J. (2001). The relative efficacy of predicting criminal behavior: A comparison of five instruments. *Criminal Justice and Behavior, 28*, 471-489.

Used PCL-R, HCR-20, VRAG, LSI-R, LCSF (Lifestyle Criminality Screening Form) with federally sentenced offenders. Over an 8-month follow-up, VRAG scores were significantly better in predicting institutional misconduct (i.e., institutional offences for which participants were found guilty) than the others (ROC areas of .76 and .63 for major and minor misconducts respectively).

And: Mills, J.F., Kroner, D.G., & Hemmati, T. (2007). The validity of violence risk estimates. *Psychological Services, 4*, 1-12.

In 83 volunteer male offenders from the study above, VRAG scores, based on interview and record review, predicted violent reconviction (base rate = 35%) over a 4.6 year mean follow-up with an ROC area of .67.

Also: Mills, J. & Kroner, D. (2006). The effect of discordance among violence and general recidivism risk estimates on predictive accuracy. *Criminal Behaviour and Mental Health, 15*, 155-166.

In the same sample, concurrent validity (assessed as agreement among instruments) was associated with predictive validity.

27. Harris, G.T., Rice, M.E., & Camilleri, J.A. (2004). Applying a forensic actuarial assessment (the Violence Risk Appraisal Guide) to nonforensic patients. *Journal of Interpersonal Violence, 19*, 1063-1074.

The MacArthur Risk Assessment Project studied violence among discharged voluntary and civilly committed psychiatric patients. By making minor adjustments, the manifest content of 10 of the 12 VRAG items were scored. Modified VRAG scores yielded a large effect size in predicting the occurrence of subsequent serious violence within a 20-week follow-up (ROC area = .72). Calculations indicated that if all 12 items of the VRAG could have been scored, the ROC area would have been at least .75. Modified VRAG scores predicted whether patients were arrested for violence, the number of subsequent violent incidents of all types, and the overall severity of all subsequent violent behavior, both in the 20-week follow-up and in the full 50-week period. The VRAG worked as well for women as it did for men. The Psychopathy Checklist made the largest contribution to accurate prediction. [The remaining nine VRAG items together made statistically significant independent contributions (cf., Edens et al. (2006). Incremental validity analyses of the Violence Risk Appraisal Guide and the Psychopathy Checklist. *Assessment, 13*, 368-374.).]

26. Quinsey, V.L., Book, A., & Skilling, T.A. (2004). A follow-up of deinstitutionalized men with intellectual disabilities and histories of antisocial behaviour. *Journal of Applied Research in Intellectual Disabilities, 17*, 243-253.

VRAG score was the only significant predictor of subsequent violent or sexual incidents (base rate = 47%) in a 15-month follow-up for a group of 58 men released under supervision from institutions for the developmentally handicapped. All victims were staff or co-residents of the group homes. ROC area for VRAG was .69 for violent or sexual incident even though there were missing data and definition of outcome was much more liberal than in studies on which the VRAG was constructed. Moreover, staff knew the VRAG score and provided extra security precautions for those of highest risk. There was some evidence that dynamic predictors added to VRAG for predicting any incident, but very little evidence that they added for prediction of violent incidents.

25. Bartosh, D.L, Garby, T., Lewis, D., & Gray, S. (2003). Differences in the predictive validity of actuarial risk assessments in relation to sex offender type. *International Journal of Offender Therapy and Comparative Criminology, 47*, 422-438.

Studied 167 child molesters and rapists released from a U.S. state correctional system over a five-year follow-up. The SORAG was approximated by dropping two items and replacing the PCL-R with the Childhood and Adolescent Taxon Scale. Overall, the prediction of violent recidivism exceeded an ROC area of .72. ROC areas for "sexual" and violent (including sexual) recidivism were .70 and .93, respectively for extra-familial child molesters. Corresponding ROC areas for incest offenders were .72 and .82, and for rapists, .71 and .57.

24. Harris, G.T., Rice, M.E., Quinsey, V.L., Lalumière, M.L., Boer, D., & Lang, C. (2003). A multi-site comparison of actuarial risk instruments for sex offenders. *Psychological Assessment, 15*, 413-425.

Studied 396 sex offenders from Ontario and B.C. federal corrections and Ontario forensic hospitals. VRAG and SORAG very similar (correlated .93 with each other) and significantly better than RRASOR and Static99 in predicting violent and sexual recidivism; both yielded ROC area of .73 for prediction of violent recidivism in combined sample. VRAG and SORAG predicted speed and severity of recidivism.

Harris, G.T. & Rice, M.E. (2003). Actuarial assessment of risk among sex offenders. *Annals of the New York Academy of Sciences, 989*, 198-210.

A re-analysis of the Harris et al. (2003) data suggested that comprehensive actuarial risk assessments (based on static, historical variables) approach ROC areas of .85 or greater when scored reliably, use fixed and equal follow-up times, and omit or alter no VRAG/SORAG items.

Rice, M.E., and Harris, G.T. (2002). Men who molest their sexually immature daughters: Is a special explanation required? *Journal of Abnormal Psychology, 111*, 329-339.

> Studied 82 men who had molested a daughter or step-daughter were compared to 102 men whose only female victim(s) were extra-familial (These men overlapped with the Harris et al., 2003 sample). The Sex Offender Risk Appraisal Guide and the Violence Risk Appraisal Guide predicted violent recidivism just as well for intra-familial offenders as they did for other sex offenders. ROC area was .76 for SORAG and VRAG violent recidivism for entire sample, and .80 for incest offenders only; ROC area of .81 for both VRAG and SORAG for sexual recidivism for whole sample. Also, r = .43 for violent recidivism and r = .42 for sexual recidivism, both using VRAG and SORAG.

23. Loza, W., Villeneuve, D.B., & Loza-Fanous, A. (2002). Predictive validity of the Violence Risk Appraisal Guide: A tool for assessing violent offender's recidivism. *International Journal of Law and Psychiatry, 25*, 85-92.

> Tested VRAG among 124 incarcerated offenders; source of scoring not stated; no mention of inter-rater reliability. VRAG scores significantly predicted criminal recidivism but not violence. Base rate for the 2-year follow-up was 13% and base rates for VRAG categories were lower than published norms based on seven years. ROC area for violent recidivism was .54.

The following three studies were based on subsamples from the above study:
Loza, W. & Green, K. (2003). The self-appraisal questionnaire. *Journal of Interpersonal Violence, 18*, 781-797.

> ROC area for VRAG's prediction of violent recidivism = .63 (base rate = .24, N = 91).

Loza, W. & Loza-Fanous, A. (2001). The effectiveness of the self-appraisal questionnaire in predicting offenders' post-release outcome. *Criminal Justice and Behavior, 28*, 105-121.

> Compared the Level of Service Inventory (LSI-R), General Statistical Information on Recidivism (GSIR), PCL-R, VRAG and the authors' Self Appraisal Questionnaire (SAQ) in predicting the recidivism of 68 offender volunteers. The SAQ yielded the best prediction of both violent and general recidivism. There were no statistically significant differences among the five assessments in the prediction of any outcome. VRAG scores exhibited statistically significant prediction of violent (ROC area= .68, base rate= .19) and nonviolent recidivism (ROC area= .70, base rate= .51).

Kroner, D.G. & Loza, W. (2001). Evidence for the efficacy of self-report in predicting violent and nonviolent criminal recidivism. *Journal of Interpersonal Violence, 16*, 168-177.

> Over a 2-year follow-up, ROC area for the VRAG's prediction of violent recidivism = .64 (base rate .14, N = 78).

22. Doyle, M., Dolan, M., & McGovern, J. (2002). The validity of North American risk assessment tools in predicting in-patient violent behaviour in England. *Legal & Criminological Psychology, 7*, 141-152.

> In 87 civilly committed medium security inpatients, VRAG scores (scoring reliability was not assessed) significantly predicted violence (base rate = 52%) within the 12 weeks after admission with a large effect size (ROC area = .71). The number of violent incidents was also significantly predicted by VRAG score (r = .37).

21. Pham, T.H. (2002, October). *Risk assessment and biological markers*. Paper presented at Belgian Congress of Neuropsychology.[Also: Pham, T.H. (2004). *Assessing risk for violence in a Belgian forensic population: Concurrent and predictive validity of the Hare Psychopathy Checklist, the Violence Risk Assessment Guide (VRAG) and the Historical Clinical Risk-20 items (HCR-20)*. Unpublished manuscript.]

> In 58 male mentally disordered offenders and maximum security prison discharges, followed-up after a mean of 2.7 yr., VRAG and PCL-R yielded an ROC area = .84 predicting violent recidivism (higher than HCR20); VRAG best predictor of recidivism overall.

20. Harris, G.T., Rice, M.E., & Cormier, C.A. (2002). Prospective replication of the Violence Risk Appraisal Guide in predicting violent recidivism among forensic patients. *Law and Human Behavior, 26*, 377-394. Also: Rice, M.E., Harris, G.T., Cormier, C.A., Lang, C., Coleman, G., & Smith Krans, T. (2004). An evidence-based approach to planning services for forensic psychiatric patients. *Issues in Forensic Psychology, 5*, 13-49.

> In 347 mentally disordered male offenders not previously reported, whose data were not used in the construction of the VRAG, and most of whom were discharged since its development, VRAG (two items were approximated) scores significantly predicted violent recidivism. The ROC area was .75, the same as that reported for the construction and subsequent independent validation of the VRAG. Analyses indicated that psychotic symptoms and other indicators of psychological distress assessed while still hospitalized were unrelated to violent outcome. Only in-hospital behaviors pertaining to selfishness, rule-breaking, dishonesty, aggressive conduct, and antisocial attitudes were significantly related to violent recidivism.

Also: Hilton, N.Z. & Simmons, J.L. (2001). Actuarial and clinical risk assessment in decisions to release mentally disordered offenders from maximum security. *Law and Human Behavior, 25*, 393-408.

> Examined decisions made by clinicians and an autonomous review tribunal for maximum security forensic patients (overlapping with those of Harris et al., 2002). Detained and released patients did not differ in their VRAG scores. The best predictor of tribunal release

decisions was psychiatrists' oral testimony, but there was also no significant association between the actuarial risk score and clinical opinion. Among a subset of the Harris et al., subjects, actuarial VRAG score, however, was significantly associated with criminal recidivism (r = .42), whereas clinical opinion was not.

19. Sjoestedt, G. & Langstroem, N. (2002). Assessment of risk for criminal recidivism among rapists: A comparison of four different measures. *Psychology, Crime and Law, 8*, 25-40.

Compared the SVR-20, PCL-R, RRASOR and VRAG (some VRAG items were unavailable or approximated) in predicting the recidivism of 51 convicted Swedish rapists. Scoring reliability tended to be low. Only the VRAG and PCL-R yielded total scores statistically significantly predictive of "nonsexual" violent recidivism (VRAG ROC area = .69). Only the RRASOR was able to significantly predict "sexual" recidivism.

18. Glover, A.J.J., Nicholson, D.E., Hemmati, T., Bernfeld, G.A., & Quinsey, V.L. (2002). A comparison of predictors of general and violent recidivism among high risk federal offenders. *Criminal Justice and Behavior, 29*, 235-249.

Studied 106 offenders over average 2-year follow-up. VRAG significantly better than PCL-R. CATS not significantly different than PCL-R. PCL-R Factor 2 not significant. ROC area for violent recidivism of .72 for the VRAG vs. .63 for PCL-R Mean VRAG score was 13.86. Norms for VRAG predicted 50% violent recidivism in 7 yrs. -- actual rate was 32% in 2 years.

17. Cooke, D. J., Michie, C., & Ryan, J. (2001). *Evaluating risk for violence: A preliminary study of the HCR-20, PCL-R and VRAG in a Scottish prison sample*. Scottish Prison Service papers; no 5/2001 ISBN 0954101022.

Followed 250 (mostly nonviolent) Scottish male adult prisoners. ROC area for VRAG's prediction of violent recidivism = .71, not significantly different from HCR20 or PCL-R total scores. All three also predicted institutional violence.

16. Tengstrom, A. (2001). Long-term predictive validity of historical factors in two risk assessment instruments in a group of violent offenders with schizophrenia. *Nordic Journal of Psychiatry, 55*, 243-249.

Tested VRAG and H10 in 106 male insanity acquittees. Two VRAG items were not used; three were estimated or modified; one was apparently reverse scored; and one new item was apparently added to the VRAG. No reliability data provided. ROC area for VRAG predicting violent reconvictions was .68, but not significantly different from H10. Excellent goodness-of-fit for VRAG categories compared with construction and calibration, chi-square (df=6) = 2.02.

15. Hartwell, L.L. (2001). *Sex Offender Risk Appraisal Guide: Validity and utility for Hawaii sex offender risk assessments*. Unpublished Clinical Research Project, American School of Professional Psychology, Hawaii Campus.

Studied 164 sex offenders released from correctional institutions in Hawaii. In a follow-up period ranging from 6 months to 12 years, 49% of the sample recidivated and 5% were sexual recidivists. SORAG predicted general recidivism (ROC area =.70) and "sexual" recidivism (ROC area = .67).

14. Hilton, N.Z., Harris, G.T., & Rice, M.E. (2001). Predicting violence by serious wife assaulters. *Journal of Interpersonal Violence, 16*, 408-423.

Examined psychopathy and the VRAG in predicting violent recidivism among 88 men with a history of serious wife assault (a subset of the Harris et al., 1993 VRAG development sample). Violent recidivism was lower among wife assaulters (24%) than among the larger sample of generally violent offenders (44%). Score on the revised Hare Psychopathy Checklist was a good predictor of subsequent violence, r = .37, and score on the VRAG was a significantly better predictor, r = .42; ROC area = .75. [Because these subjects were a subset of the VRAG development sample, the median above does not reflect this value.]

13. Nugent, P.M. (2001). The use of detention legislation: Factors affecting detention decisions and recidivism among high-risk federal offenders in Ontario. *Dissertation Abstracts International: Section B: The Sciences & Engineering*. Vol 61(12-B), (pp. 6716). Psychology Department, Queen's University at Kingston, Ontario.

VRAG significantly predicted recidivism over 2.5-year follow-up (ROC area = .68). GSIR predicted with same accuracy. PCL-R not significant.

12. Polvi, N.H. (2001, February). The relative efficacy of statistical versus clinical predictions of dangerousness. *Dissertation Abstracts International: Section B: Sciences and Engineering, 61* (7-B). Department of Psychology, Simon Fraser University.

In a 6-year follow-up of 215 Ontario mentally disordered offenders, VRAG predicted (ROC area = .70) violent recidivism much better than HCR-20 and clinical judgment.

11. Grann, M., Belfrage, H., & Tengstrom, A. (2000). Actuarial assessment of risk for violence: Predictive validity of the VRAG and historical part of the HCR-20. *Criminal Justice and Behavior, 27*, 97-114.

Studied 404 Swedish forensic patients. ROC area for prediction of violent recidivism by the VRAG of .68. Some VRAG items were unavailable or approximated. Counted only

subsequent convictions; attempted homicide was apparently not counted; for some subjects, trespassing and arson were counted as violent; for other subjects, sex offenses and kidnapping were not counted as violent; robbery was counted as violent for some subjects and not others.

Grann, M. & Wedin, I. (2002). Risk factors for recidivism among spousal assault and spousal homicide offenders. *Psychology, Crime and Law, 8*, 5-23.

Compared the VRAG, H10, PCL-R and SARA in predicting the spouse assault recidivism in 88 convicted Swedish wife batterers. SARA scores had the smallest accuracy and no consistent significant association with outcome, while VRAG score yielded the largest effect with an ROC area of at least .75.

10. Hanson, R.K. & Harris, A. (2000). Where should we intervene? Dynamic predictors of sex offense recidivism. *Criminal Justice and Behavior, 27*, 6-35.

National sample of 267 convicted sex offenders. Recidivists and non-recidivists matched on age and sex and relationship of victim. VRAG yielded largest differentiation (ROC area = .70) between them.

9. Douglas, K.S., Hart, S.D., Dempster, R.J., & Lyon, D.R. (1999, July). *Violence Risk Appraisal Guide (VRAG): Attempt at validation in a maximum-security forensic psychiatric sample*. Paper presented at the joint meeting of the American Psychology-Law Society and the European Association of Psychology and Law, Dublin, Eire.

Studied 80 forensic patients. ROC area for VRAG of .60. Not significantly different than PCL-R. Used approximations for most VRAG items.

8. Nadeau, J., Nadeau, B., Smiley, W.C., & McHattie, L. (1999, November). *The PCL-R and VRAG as predictors of institutional behaviour*. Paper presented at conference on "Risk assessment & risk management: Implications for the prevention of violence" Vancouver, BC.

VRAG correlated .43 with total institutional charges, .38 with total serious charges, and .31 (all statistically significant) with violent charges inside institution. Study conducted at Regional Health Centre (Pacific), Abbotsford, B.C., Correctional Service of Canada.

7. Nichols, T.L., Vincent, G.M., Whittemore, K.E., & Ogloff, J.R.P. (1999, November). *Assessing risk of inpatient violence in a sample of forensic psychiatric patients: Comparing the PCL:SV, HCR-20, and VRAG*. Paper presented at the conference on Risk assessment and risk management: Implications for the prevention of violence, Vancouver, B.C.

VRAG significantly correlated with inpatient aggression within the first three months of hospitalization.

6. McBride, M. (1999, February). *Predicting violence among federal inmates*. Corrections Research Forum. Toronto.

VRAG significantly better than the PCL-R in predicting institutional misconduct and subsequent violence among federally sentenced offenders.

5. Dempster, R.J. (1998). *Prediction of sexually violent recidivism: A comparison of risk assessment instruments*. Unpublished Master's thesis, Department of Psychology, Simon Fraser University.

Compared the VRAG, SORAG, PCL-R, RRASOR, and SVR-20 in predicting the violent and sexual recidivism of 95 sex offenders released from Canadian prisons. Although full scale VRAG and SORAG scores were not used, VRAG and SORAG categories yielded the best prediction of violent recidivism (ROC areas of .83 and .88, respectively), and both were statistically significant predictors of "sexual" recidivism (ROC areas of .71 and .77, respectively; SORAG category was one of the two best predictors of sexual recidivism). Multivariate analyses indicated that neither RRASOR nor SVR-20 scores made any significant additional contribution to the prediction of violent recidivism after the use of the SORAG.

4. Rice, M.E., & Harris, G.T. (1997). Cross validation and extension of the Violence Risk Appraisal Guide for child molesters and rapists. *Law and Human Behavior, 21*, 231-241.

Studied 158 sex offenders not used in the construction of the VRAG which had an ROC area of .77 predicting violent recidivism. These subjects plus 130 other sex offenders formed the construction sample for the SORAG and were the basis of the normative data presented in Quinsey et al., 1998, 2006.

3. Quinsey, V.L., Coleman, G., Jones, B. & Altrows (1997). Proximal antecedents of eloping and reoffending among mentally disordered offenders. *Journal of Interpersonal Violence, 12*, 794-813.

VRAG significantly differentiated serious violent recidivists (ROC area = .68) from other mentally disordered offenders.

2. Bélanger, N. & Earls, C. (1996). Sex offender recidivism prediction. *Forum on Correctional Research, 8*, 22-24.

Studied 57 federally sentenced sex offenders. VRAG yielded an ROC area of .82 for recidivism.

1. Rice, M.E., & Harris, G.T. (1995). Violent recidivism: Assessing predictive validity. *Journal of Consulting and Clinical Psychology, 63*, 737-748.

Further follow-up of original sample to a 10-year follow-up. Sample was expanded to 799 men because it included men who had not had a chance to reoffend at the time of the original study ROC area of .74 for 3.5, and .74 for 10-year follow-ups. ROC area of .73 for serious violent recidivism.

**Note:* The area under the curve in a Relative Operating Characteristic (ROC) analysis is a measure of effect size. It is numerically the same as the common language effect size, the probability with which a randomly chosen violent recidivist will have a higher score than a randomly chosen non-recidivist. The ROC area examines the trade off between hits and false alarms as a function of score on the instrument. The ROC area in the original development sample for the VRAG was .76.

By commonly accepted standards (J. Cohen, 1992. A power primer. *Psychological Bulletin, 112*, 155-159; M.E. Rice & G.T. Harris, 2005. Comparing effect sizes in follow-up studies: ROC, Cohen's *d* and *r*. *Law and Human Behavior, 29*, 615-620), a large effect generally corresponds to an ROC area of at least .714 (Cohen's *d* statistic = .80 or a point-biserial correlation** of .37). Below that, moderate effect sizes correspond to ROC areas of at least .639 (*d* = .50; correlation* = .24), while ROC areas of at least .556 (*d* = .20; correlation** = .10) would be considered small effects. Of course, an ROC area of .50 (*d* = 0; correlation = 0) indicates no effect. (**When the base rate = 50%).