The Violence Risk Appraisal Guide (VRAG) and Sex Offender Risk Appraisal Guide (SORAG)

What are they?

The Violence Risk Appraisal Guide (VRAG) and its companion Sex Offender Risk Appraisal Guide (SORAG) are actuarial tools for the prediction of violent recidivism. (At first, the VRAG was called the Statistical Risk Appraisal Guide). The tools give, as a function of nine distinct numerical categories, the proportion of offenders that were found to have committed a new violent offense (including sexual offenses) within specified periods of community access. The tools say how one offender’s risk compares to others. The SORAG is for male sex offenders and the VRAG is for men who have committed serious, violent or sexual offenses.

These tools were developed by members of our research group by studying the recidivism of more than 800 serious offenders — roughly half of whom were forensic patients while the other half were convicted criminals. The VRAG uses 12 personal characteristics (called items or variables)—always the same 12—and the SORAG uses 14. However, both tools can be used for an offender even if a few of the variables are “unknown.”

What is meant by “actuarial?”

An actuarial tool makes predictions based on the measured relationship between the outcome (violent recidivism, in this case) and several objectively measured variables (e.g., age, marital status, criminal record, in the case of the VRAG). Variables are selected based on their unique and incremental contribution to the prediction of the outcome, and weights for each are then computed. Numerical scores for variables are added to give a total for each individual. Then the relation between the total score and violent recidivism is tabulated for hundreds of cases where the outcome for each is known. This then gives the risk of violent recidivism for each new case. Scores on the VRAG and SORAG are also known to be related to the swiftness and severity of violent recidivism.

Actuarial predictions contrast with informal methods (in this area usually called “clinical judgment”). Clinical judgments are usually based on an assessor’s intuitive or subjective evaluation and combination of characteristics reported in the professional literature to be related to violence. Such an approach usually also depends on memory for past cases. Informal methods are not developed using the systematic testing of predictions against measured outcomes.
What is the need for the VRAG?

A large body of scientific research has demonstrated that informal clinical judgments are inadequate. Research shows they exhibit severe problems: low agreement among clinicians, use of invalid predictors (i.e., basing predictions on some personal characteristics that are actually unrelated, or inversely related, to violent recidivism), excessive conservatism, and most seriously, very low accuracy. The training and experience of forensic clinicians are unrelated to the accuracy of their judgments. Clinicians’ confidence in their judgments is also unrelated to their accuracy.

A large body of scientific data has demonstrated that actuarial instruments are much more reliable and accurate in making predictions in every domain in which they have been tried, including the prediction of violent recidivism. Actuarial methods are so far superior to clinical judgment that experts in the field (for example, William Grove and Paul Meehl in the journal Psychology, Public Policy and Law, vol. 2, in 1996) said: “Every day, many thousands of predictions are made by parole boards, dean's admission committees, psychiatric teams, and juries hearing civil and criminal cases . . . –these are high stakes indeed. To use the less efficient of two prediction procedures in dealing with such matters is not only unscientific and irrational, it is unethical. To say that the clinical-statistical issue is of little importance is preposterous (p. 320).”

How well do the VRAG and SORAG work?

The accuracy of the VRAG and SORAG in predicting violent recidivism has been tested and demonstrated by independent researchers reporting positive results using more than 60 different samples of serious offenders. Most notable are: Four replications by our own research group; fifteen independent replications using criminal offender, sex offender, and forensic patient samples from the US and Canada; several studies of violence within institutions; many replications using criminal offender, sex offender, and forensic patient samples from the UK and continental Europe. All these demonstrations and two meta-analyses have indicated the VRAG and SORAG achieve the highest accuracies in the prediction of violent recidivism yet reported in the scientific literature.

What is the basis of the VRAG and SORAG?

These actuarial tools are not typical psychological tests in which patients fill out questionnaires or answer questions in an interview. The research was based entirely on carefully assigning a numerical score for each variable to each case. This scoring used only the clinical record, especially comprehensive psychosocial histories. The VRAG requires a comprehensive psychosocial history addressing childhood conduct, family background, antisocial and criminal behavior, psychological problems, and details of the index offense. Psychosocial histories adequate to score the VRAG include more than past and present psychiatric symptoms and use a lot of information gathered from third parties (friends, family, schools, correctional facilities, police, and the courts). In the area of predicting crime and assessing risk, it is insufficient to rely on what an offender says about himself.

Deriving a score on the VRAG or SORAG is not a clinical task in its ordinary sense because it does not require contact between the assessor and the person being assessed. Nevertheless, compiling the psychosocial history is clearly a clinical process because a case historian almost always interviews the person and gathers much clinical material relevant to diagnostic criteria and the exploration of many
psychological problems. Clinical expertise is also required to score VRAG and SORAG variables from a psychosocial history.

Are the VRAG and SORAG legally acceptable?

Testimony about an offender's risk as assessed by the VRAG and SORAG has been ruled admissible by the Ontario Board of Review (e.g., McCaul) on many occasions. Expert testimony on offender risk has been accepted by criminal courts in Ontario (e.g., R. v. Eakin) as well as by several courts in the United States (e.g., State of Washington v. Dean, State of Wisconsin v. Bush). Although its admissibility has been challenged, we know of no case in which the court (or Review Board) has upheld the challenge and ruled inadmissible testimony about risk of violent recidivism based on the VRAG. The VRAG is used extensively throughout CSC, in several U.S. jurisdictions, and in Britain.

Are the VRAG and SORAG accepted by professionals?

The research on which the VRAG and SORAG are based has received wide attention and acceptance in the scientific community. Due primarily to the VRAG, the Ontario government presented the Penetanguishene researchers the Amethyst Award for Outstanding Achievement in the Ontario Public Service. The ethics of making predictions about violence has also been addressed in the professional literature and it is generally agreed that, because actuarial estimates are the most accurate, they are the most ethical methods.

Professor John Monahan, an internationally recognized authority in violence prediction, reviewed the research on the VRAG in the journal Criminal Justice and Behavior (vol. 22 in 1995) saying, “[F]or use with male patients with histories of serious violence, the [VRAG] is so far superior to anything previously available that not to seriously consider its use . . . would be a difficult choice to justify. The research reported . . . constitutes an extraordinary accomplishment -- the programmatic gathering and interpretation of complex information in a manner that is both scientifically rigorous and clinically meaningful (Monahan, 1995, p 445).”

Are there other concerns about the VRAG and SORAG?

Some have expressed concern that forensic populations vary so much as to render VRAG predictions inaccurate. Although the population may have changed somewhat, it is certain that the variables that predict violent recidivism have not changed at all. A substantial body of research indicates that the personal characteristics that predict violent recidivism are consistent across such variations as differences in jurisdiction, time period, index offense and offender diagnosis and age.

Others have expressed concern that, notwithstanding their demonstrated accuracy, using these actuarial tools is too difficult because the compilation of adequate psychosocial histories requires cooperation from patients who can refuse permission, and because the skill and time required are prohibitive. The idea that a patient can legally refuse the collection of relevant data is a misconception. Under some circumstances, patients can refuse the release of some kinds clinical information but no patient has the right to block the collection of information. For example, irrespective of a patient's consent, the RCMP has an obligation to provide criminal history information to those hospitals who request it for their forensic patients.
Certainly, compiling an adequate psychosocial history requires skills on the part of a case historian. At the our institution, it requires, on average, approximately 2.5 person-days to complete a suitable psychosocial history. Nevertheless, such histories are indispensable bases for comprehensive treatment and supervision for forensic patients.

How should VRAG and SORAG scores be used?

Our recommendations are made to prevent exposing the public to unnecessary risk, to ensure that restrictions on patients’ freedom are reserved for those that require them, and to avoid grounds for hospital and government liability due to negligence. Research shows the probability, speed and severity of violent recidivism are all related to scores on the VRAG and SORAG. We recommend, therefore, that these scores be used as the formal index of risk for forensic populations. We recommend that resources devoted to treatment, supervision, and secure custody be generally apportioned in direct relation to that risk, giving the most secure custody, most intensive supervision, and (usually) most energetic treatment efforts to patients of highest risk. Research also shows that clinicians’ impressions of dangerousness, insight, treatment response, and so on, are, at best, very weakly related to violent recidivism. Combining actuarial scores with clinical judgments inevitably produces lower accuracy than actuarial scores alone. Therefore, we recommend that clinical judgment not be blended with actuarial scores, actuarial scores not be used only as components to clinical judgment, and clinical judgment not be used to decide which patients receive actuarial assessment. We recommend the role of clinicians in risk appraisal be to compile relevant clinical material, and compute the actuarial scores. We recommend that VRAG and SORAG scores be kept distinct from other clinical statements about violence risk.