Report of the Committee on Serious Violent and Sexual Offenders

ANNEX 6

CURRENT RISK ASSESSMENT INSTRUMENTS

Professor David Cooke

The actuarial approach to risk assessment

Violent re-offending

1. The actuarial approach 'involves a formal, algorithmic, objective procedure (e.g., equation) to reach the decision' (Grove *et al.,* 1996, p. 293). The most widely used actuarial scale for the prediction of violence is the Violence Risk Assessment Guide (VRAG) (Webster, *et al.,* 1994; Quinsey et al., 1998). This scale was developed using data from a cohort of patients detained in a Canadian secure hospital between 1965 and 1980. Follow-up data pertaining to violent behaviour were collected from Royal Canadian Mounted Police files; violent behaviour ranged from assault to murder. Hospital records were reviewed and potentially relevant variables were coded; the relationships between these variables and violent outcome were determined statistically. Twelve variables that demonstrated stable relationships across samples were retained. Variables were retained on the basis of statistical criteria: theoretical arguments about the role of these variables in 'producing' violence were not taken into account. These variables included Hare's Psychopathy Checklist Score (Hare, 1991), age at index offence, degree of victim injury and history of alcohol abuse: a full list of items is provided in Table 1 below.

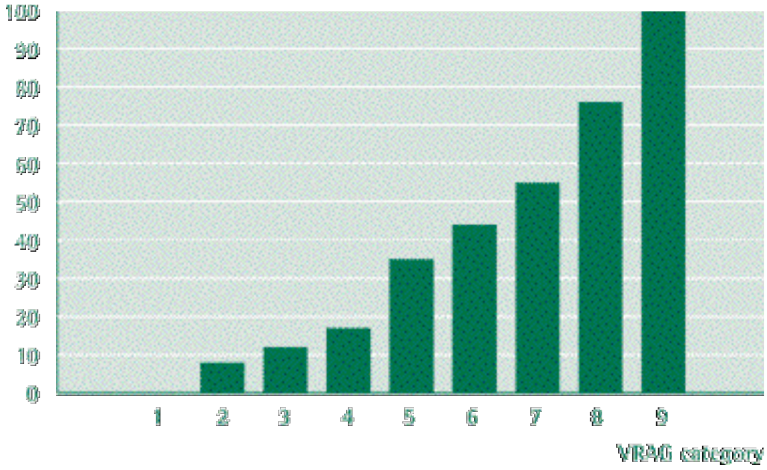
Table 1

	Items used in the VRAG	**Predictive direction of variable**
1	Psychopathy Checklist (PCL-R) Score	+VE
2	Elementary School maladjustment	+VE
3	DSM-III diagnosis of personality disorder	+VE
4	Age at index offence	-VE
5	Lived with both parents to 16 (except for death of parent)	-VE
6	Failure on prior conditional release	+VE
7	Non-violent offence score	+VE
8	Marital status	+VE

9	DSM-III diagnosis of schizophrenia	-VE
10	Victim injury	-VE
11	History of alcohol abuse	+VE
12	Female victim	-VE

2. An algorithm is applied to weight an individual's scores on the twelve variables, e.g. psychopathy contributes more to the overall score than marital status. The overall score is used to assign individuals to one of nine risk categories ('bins'); members of each category having a different likelihood of re-offending. The distribution of risk categories is illustrated in Figure 1 below.

Figure 1: Probability of violent recidivism at seven-year follow-up by VRAG category



3. For example, 33% of the individuals who were in VRAG category 5 recidivated violently within seven years, whereas 100% of those in VRAG category 9 recidivated violently within seven years.

4. The process by which the key variables of the VRAG were derived resulted in some unexpected relationships between variables and risk of violent recidivism. For example, a DSM-III diagnosis of schizophrenia was negatively related with violence. This is contrary to the available evidence which indicates that schizophrenia has a small but significant relationship with future violence (Douglas & Hart, 1999). This anomalous relationship may reflect the sample composition; compared to psychopaths - the other major diagnostic group in the sample - the violence risk of the schizophrenics was lower. Similarly, those who killed female victims, and those who inflicted greatest injury in the index offence (i.e. killed), were less likely to re-offend than those who inflicted less injury or had male victims.

5. The VRAG has been subject to criticism (e.g. Hart, 1999): three criticisms stand out. First, risk is conceptualised in a limited fashion, i.e. the absolute probability of violent recidivism over a seven or ten year time period; important dimensions of risk - from a risk management perspective - including the nature, severity, frequency and imminence of future violence are not

encompassed by this approach. Second, the prediction, for example, that patient X has an 82% probability of re-offending violently within 10 years of release does little to assist the clinician in deciding how to manage the patient's risk. Third, in the most recent account of the VRAG and its application (Quinsey *et al.*, 1998), the authors suggest that assessors ignore risk factors not included in the VRAG. As Hart (1999) indicated, assessors would be negligent if they ignored variables such as prior history of violence or homicidal ideation and threats: variables that have been shown to be linked to violence (e.g. Grisso *et al.*, unpublished).

Sexual re-offending

6. Several actuarial approaches have been developed for the prediction of recidivism amongst sex offenders. These include the Sex Offender Risk Appraisal (SORAG) (Quinsey *et al.*, 1995), Rapid Risk Assessment for Sex Offence Recidivism (RRASOR) (Hanson, 1997) and Static-99 (Hanson & Thornton, 1999). The SORAG is an extension of the VRAG for sexual offenders, the major modification being the addition of items to measure sexual deviance. The additional variables include number of previous convictions for sex offences, history of sex offences against male children or adults, and phallometrically determined sexual deviance score. The variables utilised in the RRASOR and Static-99 are listed in Table 2 below.

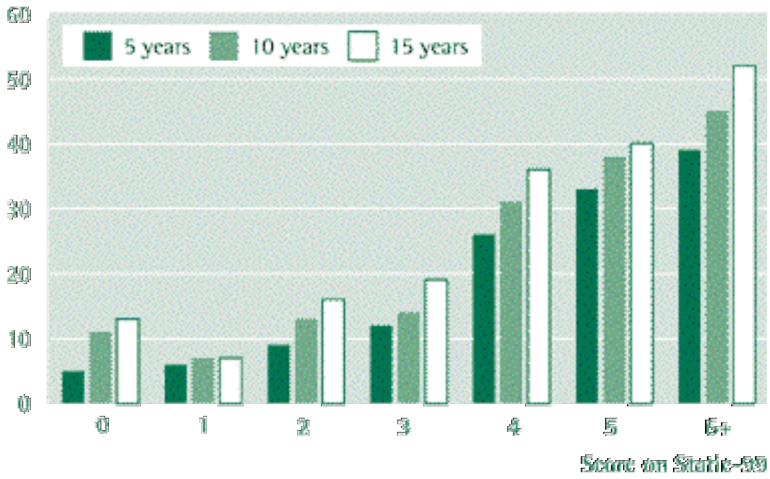
Table 2

Type of risk factor	RRASOR	Static-99
Sexual deviance	Male victims	Male victims
		Never married
		Non-contact sex offences
		Unrelated victims
Range of potential victims	Unrelated victims	Unrelated victims
		Stranger victims
Persistence	Prior sex offences	Prior sex offences
Antisociality		Current non-sexual violence
		Prior non-sexual violence
		4+ sentencing dates
Age	18-24.99 years	18-24.99 years

7. In a meta-analytic study, Hanson and Bussiere (1998) identified a number of risk factors that were reliably linked to sexual re-offending. Based on this research, the RRASOR was developed as a screening instrument for predicting sexual re-offending. The instrument was developed using Canadian samples but, importantly, it has been shown to cross-validate to a large sample from H.M. Prison Service. The Static-99 was developed in an attempt to improve on the success of the RRASOR, more indicators of both sexual deviance and antisociality being included. The variables included are

consistent with theory about factors which contribute to sexual offending. Data from four samples indicates that the Static-99 is a significantly better predictor of sexual re-offending than the RRASOR. The relationship between reconviction (over 5, 10 and 15 years) and score on the Static-99 is illustrated in Figure 2 below.

Figure 2: Sexual reconviction by Static-99 score (%)



8. Of individuals who fall in the top category (12% of original sample), 39% were reconvicted of a sexual crime within five years, 52% being reconvicted within15 years.

9. The authors of the VRAG argued that predictions should be based purely on actuarial scales: the authors of the Static-99, by way of contrast, indicated that information about dynamic risk factors (i.e. risk factors that are potentially alterable through management or treatment) should be used to influence final risk ratings. It is noteworthy, however, that Hanson and Thornton (1999) argued that 'in most cases, the optimal adjustment would be expected to be minor or none at all' (p. 18).

10. A more recent approach to actuarial prediction is to use a classification tree (Monahan *et al.*, 2000; Steadman *et al.*, 1999). The assessor is guided through a series of binary decisions and arrives at an empirically derived estimate of future risk. For example, on the first step the assessor allocates individuals on the basis of their score on the Psychopathy Checklist: Screening Version (PCL:SV); 35.7% of the high scorers engaged in violence in the 20 week follow-up compared with 12.6% of the low scorers. Of those high PCL:SV scorers, 41.1% of those who reported serious child abuse engaged in violence in the 20 week follow-up period, compared with 15.4% of those who did not report serious child abuse. Thus, contingent on each response another question is posed until individuals are classified as being either high or low risk. This approach has the advantage over the VRAG in that the variables selected for inclusion in the model were selected *a priori* as having a theoretically meaningful, and empirically based, relationship with future violence. The method has the disadvantage of only identifying high or low risk individuals; a group of individuals remain unclassified. It is these

individuals, whose risk level is equivocal, with whom the assessor needs most assistance.

The structured clinical approach

11. The HCR-20 is the best known, and best researched, empirically-based guide to risk assessment: it was developed, not only by examining the research literature to determine which variables are salient in the prediction of violence, but also through consultation with experienced forensic clinicians. The HCR-20 entails twenty items: ten **H**istorical items, five **Cl**inical items and five **R**isk management items (see Table 3 below for a complete list).

Table 3: Items in the HCR-20 risk assessment scheme

SUB-SCALES	**ITEMS**
Historical Scale	
H1	Previous violence
H2	Young age at first violent incident
H3	Relationship instability
H4	Employment problems
H5	Substance use problems
H6	Major mental illness
H7	Psychopathy
H8	Early maladjustment
H9	Personality disorder
H10	Prior supervision failure
Clinical Scale	
C1	Lack of insight
C2	Negative attitudes
C3	Active symptoms of major mental illness
C4	Impulsivity
C5	Unresponsive to treatment
Risk Management Scale	
R1	Plans lack feasibility
R2	Exposure to destabilszers
R3	Lack of personal support
R4	Non-compliance with remediation attempts
R5	Stress

12. The HCR-20 was designed to provide empirically-based structured clinical guidance in relation to the assessment and management of individuals who

are potentially violent. It is designed to be used in a wide range of settings including community, hospital and prison settings. It is designed to be testable in terms of reliability and validity.

13. Research studies are now becoming available from Canada and Sweden: as yet none are available in Scotland, or, more widely, in the United Kingdom. Research on the HCR-20 has been carried out in civil psychiatric, forensic psychiatric, and prison samples. Douglas & Webster (in press) found that the HCR-20 total scores predicted violent crime within a sample of 193 civil psychiatric patients released from hospital. In this study, those who scored above the median on the HCR-20 total score were 13 times more likely to be arrested for a violent offence following release from hospital than were those who scored below the median. In an unpublished thesis, Klassen (1999) found that the H scale of the HCR-20 was related with moderate strength (correlations averaging 0.30) to the in-patient violence of civil psychiatric patients.

14. In a retrospective study, Douglas *et al***,** (1999) found that forensic psychiatric patients who scored high (i.e. greater than the median score) on the HCR-20 were five times more likely to have engaged in previous violent behaviour than those scoring below the median. Strand *et al.* (1999), in a retrospective study of mentally disordered offenders, found that the HCR-20 was related to violence; they obtained moderate to large effect sizes. Wintrup (1996) determined that HCR-20 total scores were related, with moderate strength, to community violence committed by forensic psychiatric patients after release from a secure forensic facility.

15. There have now been two small studies in prison settings. In a retrospective study of correctional inmates, the HCR-20 H scale correlated strongly (0.53) with the number of charges for violent arrests, while the C scale was related with moderate strength (0.30) to this same dependent measure (Douglas & Webster, 1999). In this study, persons who scored above the median on the HCR-20 were, on average, four times more likely than those scoring below the median to have been charged with a violent offence in the past, to have been violent in the institution, and to have attempted or succeeded in escaping from prison. In a small Swedish prison study
(n = 41), Belfrage *et al,* (1999) found that the clinical and risk management items were highly predictive of institutional violence. These results suggest that the HCR-20 shows considerable promise for the prediction and management of individuals who pose a risk of future violence.

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