A PORTFOLIO OF STUDY, PRACTICE AND RESEARCH

Submitted for the Doctor of Psychology (Psych. D.)
In Clinical Psychology

CONVERSION PROGRAMME

Copyright
John Damien McGinley
Department of Psychology
University of Surrey
September 1995
ACKNOWLEDGEMENTS

My immediate appreciation is expressed to Dr Sean Hammond, for his friendship, his supervision, his collaboration and scholarly support throughout the preparation of this portfolio. His unique blend of skills and knowledge is unparalleled and I regard him as an unsung hero of the Psychology Department at Surrey University.

I greatly appreciated the constant support offered by Dr Derek Perkins, head of the psychology department at Broadmoor Hospital and my manager. He is the embodiment of tact and diplomacy, virtues I hope I will imitate in my new appointment as head of psychological practice at Ashworth Hospital.

I thank the several colleagues who have assisted in the mammoth task of collecting the data for the MMPI project at Broadmoor Hospital, especially Katie Neale, Hazel Ormiston and Carina Waters from Surrey University, and Marie Trew from Broadmoor psychology department.

I acknowledge and applaud the contributions of Dr Sean Hammond and Mr Darren Bishopp in the development of the CDMS project, on which the clinical review of this portfolio is based.

The stalwart of the CDMS project has been Dr Margaret Orr, Consultant Forensic Psychiatrist and Director of Medical Services, who invited me to join the steering group and encouraged me constantly in my role as coordinator. I have enjoyed her friendship greatly as well as benefitting from her professional collaboration and leadership on several clinical teams. Our joint work with Dr Sue Jennings in the dramatherapy project was a unique learning experience in the need for interdisciplinary collaboration in the care and treatment of our patients. The fact that she is Scottish was purely coincidental.

In the same vein of professional collaboration, I have learned greatly from Dr Harvey Gordon who was the consultant psychiatrist with whom I worked in male special care where his natural cautiousness was a great asset to the clinical team.

For furthering my professional and political aspirations, I thank Dr Chandra Ghosh, Consultant Forensic Psychiatrist. Her awareness of the political climate in mental health care is second to none.

I express my gratitude to Mrs Marie McAdams and Rev. Trevor Walt for their friendship throughout the development of CISD (Critical Incident Stress Debriefing).

In risk assessment developments, I must thank Sue Goodwin for her obsessional efficiency and collaboration (I am being complimentary).

There would be no more dinner invitations if I did not also include Dr Margaret O'Rourke in expressing my thanks for her friendship and support.

Finally to my mother, family and friends for their constant affirmation, love and support.
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Section One: Professional Audit

Introduction.

Qualifications

MA (Hons) Psychology  University of Glasgow  1981
MSc Clinical Psychology University of Surrey  1989
C. Foren. Psych  British Psychological Society  1991
AFBPsS  British Psychological Society  1992

Current Post
Consultant Forensic Clinical Psychologist  1989-95
Broadmoor Hospital Special Health Authority
Lecturer: University of Surrey  1989-92
Associate Lecturer: University of Surrey  1993-95

New appointment
Consultant Forensic Clinical Psychologist  Dec. 1995
Head of Forensic Psychology Practice
Ashworth Hospital Authority

Psych D Registration:  April 1994
Registration number:  3316645

This section is divided into seven parts as follows:

1. MSc clinical psychology
2. Continued professional development
   1. Training
   2. Professional memberships
   3. Publications
3. Psych D. objectives
4. The academic reviews
5. Service development review
6. The Research project
7. MSc Dissertation
### MSc Clinical Psychology: University of Surrey 1987-89.

**Course outline**
- Adult
- Learning disabilities
- Neuropsychology
- Elderly

**Placements**

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2. Continued Professional Development

2.1 Training

1989 M.Sc. Clinical Psychology
University of Surrey

1989: Probationary lectureship course: three years
University of Surrey

1990: Certification in Psychopathy Checklist (PCL-R): one week workshop
Broadmoor Hospital: S. Hart/R Hare

1990: Control and restraint training
Training for safe control of violent patients
Broadmoor Hospital

1992: Advanced training in SPSS
SPSS, Chertsey

1993: Advanced training in database management
Compsoft, Alton

1993: Hostage negotiation workshop
Royal Holloway College

1994: Psych D registration
Workshops and seminars

1994: Critical incident stress debriefing
accreditation course for debriefers
Trauma After Care Trust

1995: Post traumatic stress disorder training
Ticehurst House Hospital

1995: Traumatic incident reduction training:
Royal Agricultural College

1995: Certification in advanced interpretation of MMPI: workshop
European Congress of Psychology, University of Athens.
2.2 Professional memberships and working parties

1981: Graduate Membership of BPS

1991: Society for the Study and Treatment of Delinquency
       Member

1992: International Society of Forensic Psychotherapy
       Founder member

1992: Associate fellowship of BPS

1993: International Society for the Study of Personality Disorders (ISSPD)
       Member

1993: American Psychological Society
       Foreign affiliate

1993: Chair, Training committee
       Division of Criminological and Legal Psychology

1993: Member of Membership and Qualifications Board
       BPS

1994: Read Codes Steering Group
       BPS/NHS

1994: BPS/NVQ working party.
2.3. Publications


1995: Accreditation criteria for forensic courses: draft document: BPS/DCLP

1995: Masking and unmasking: an evaluation of dramatherapy with offender patients. (in press):
Jennings, McGinley and Orr: In S. Jennings (ed.) *Clinical Dramatherapy*:

2.4 Recent presentations

1. The Institute of Electrical Engineers, University of Surrey.
   4 April 1995
   *Risk assessment of mentally disordered offenders.*

2. Forensic Psychiatry Conference
   Tel Aviv, Israel. May 1995
   *Risk assessment*

3. European Congress of Psychology
   Athens, July 1995
   *Core knowledge and skills in forensic psychology*
3. Overall Aims and Objectives of the Psych D.

I am greatly influenced by the scientist-practitioner model of clinical psychology and regard the interplay between theory and practice to be essential. I regard the Psych D work as part of ongoing continued professional development. CPD must be regarded as a basic requirement to maintain one's competence to practice. Proof of it may be required in the future for the renewal of one's charter and practising certificate.

Accepting the contract to complete the Psych D imposes a discipline whereby one must carefully manage one's time to properly fulfill the responsibilities of the job and allow time to research, study and write-up the documentation.

Having the support and backup of my supervisor and the psychology department at Surrey University, and my colleagues at Broadmoor Hospital Psychology Department, provided the necessary professional basis to achieve a competent end product.

The topic areas of my academic reviews, clinical service review and research project were selected from ongoing developments of my clinical practice and therefore served to enhance my contribution to the progress of the organisation and the quality of my work with patients.
4. Academic Reviews

Aims and objectives
The academic review section reflects three projects in which I am currently engaged in my clinical work. By critically examining the literature underpinning the areas allowed me to perform my lead role in a confident and informed manner.

Rationale
My clinical work with mentally disordered offenders has emphasised the importance of multidisciplinary collaboration to meet their needs. The opportunity arose to evaluate the effectiveness of dramatherapy workshops, conducted by Dr. Sue Jennings, regarded by some as the founder of its professional status in the UK. It was too good to be missed. To work well with other disciplines, it is essential to esteem the competencies of others and take advantage of common psychological sources.

Working in many forensic settings, I have appreciated the work of the staff who dedicate themselves to the care of society's marginalised. It can be stressful beyond the bounds of normal experience. This encouraged me to critically review psychological debriefing as a staff support strategy following exposure to critical incidents.

Recent developments in forensic services in high security settings have highlighted the need to develop strategies aimed at identifying and managing the inherent risks of working in such settings and evaluating the reliability of predictions of dangerousness. It was essential to critically review the best current models of risk assessment on which to derive our strategy.

Plan
The three topics were chosen to meet the needs addressed in the rationale.
2. Critical incident stress debriefing.
3. Psychological theory and therapeutic applications of dramatherapy.

The academic reviews are presented in section 2 of the portfolio.
5. Clinical Service Review

Aims and objectives
The aim of the clinical service development was to demonstrate the role of psychology in coordinating and supporting a multidisciplinary project in clinical decision making. Its success was dependent on achieving a successful prototype model which would be extended to enhance the functioning of all clinical teams in the hospital.

Rationale
The rationale for the review was to provide the hospital with an account of the various stages of the development of the prototype in order that the users of the system would clearly understand how the objectives were achieved and be assured of the reliability and validity of the final product.

Plan.
The plan was to document the stages of the development across the three/four years of its history highlighting the research and evaluation of each stage of the process.

The clinical service development review is presented in section 3 of the portfolio.
6. Research

Aims and objectives.
The principal aim of the research initiative was to describe the personality profiles of patients in Broadmoor over a thirty year period. The project was constructed in two parts. This study represents part one which is the evaluation of the psychometric properties of the MMPI which was the chosen measurement instrument for assessing personality. Part two will follow. In the knowledge of the strength and limitations of the measurements, reliable clinical inferences will be made as to the relationship of the personality disorder with mental illness (MI) and psychopathy (PD), the mental health categories, together with dangerousness, which formed the rationale for the admission of the patients to high security.

Rationale
The assessment of personality has been a major interest in psychology generally but has taken on additional relevance with the diagnostic demands for identifying personality disorders in the forensic context. The area has been seriously confounded with legal definitions of psychopathy associated with mental health legislation and the inherent demand to demonstrate the treatability of such a condition. While the treatment of mentally disordered offenders has changed over the past forty years, with the changing perceptions of personality, the assessment tool for its assessment has remained constant in Broadmoor Hospital for thirty five years viz., the Minnesota Multiphasic Personality Inventory (MMPI). Given the vast data which these assessment represents, it would be possible to retrospectively study changes in the personality types of the hospital population which might be evident in response to legal and clinical practices over the past thirty years.

Plan
The plan of action was to create Broadmoor personality disorder scales based on the MMPI PD scales of Morey et al (1985). The norms for the latter were based on American general psychiatric samples and had never been tested on a UK forensic sample. Therefore it was necessary to test out the psychometric qualities of the Broadmoor scales prior to conducting the clinical evaluation study.

The research study is presented in Section 4 of the portfolio.
Aim
The aim of the study was to establish a way of differentiating types of sexual offending from the heterogeneous population of sex offenders.

Rationale
Treatment modalities must aspire to meet the specific needs of the individual offender patient. Typologies of serious sexual offenders have distinguished sub-types within an hypothesised primary motivation for the behaviour. Was the act driven by sadistic violence, abuse of power or the satisfaction of sexual needs? It was hypothesised that early childhood experiences of sexual and physical abuse may be correlated with the amount and type of violence in the act, and thereby assist in distinguishing among the sub-types.

Plan
The plan was to test out the hypothesis stated in the rationale by interviewing serious sexual offenders, examining their childhood experiences and assessing the nature of the violence in the sexual offences.

The M Sc dissertation is presented in Section 5 of the portfolio.
SECTION TWO: ACADEMIC AUDIT

CRITICAL REVIEW ONE

A CRITICAL EVALUATION OF THE MACARTHUR RISK ASSESSMENT OF VIOLENCE WITH MENTALLY DISORDERED OFFENDERS
Abstract

This paper critically evaluates the signal contribution of the MacArthur Foundation study of risk assessment with mentally disordered offenders. Its relevance in the differing legal contexts of US, Canada and UK is discussed. It argues for precedence to be given to actuarial designs which challenge the hegemony of clinical judgement in the prediction of dangerousness. Some of its limitations have been addressed in the most recent study of dangerousness by Webster et al (1995) in Canada. Its implications for risk assessment and management in the UK setting are discussed with the suggested innovation of neural net technology to enhance the power of actuarial models.
From dangerousness to risk assessment: a new strategy in risk assessment

Introduction

Clinicians, whether in physical or mental health services, are accountable to their patients, their organization and their professional body for the judgements and decisions on which patients well being depend. In some physical illnesses, the safety of society as a whole is a serious consideration in the assessment, treatment and prevention of infectious diseases eg AIDS. Legal steps are taken to reduce the risks to public safety posed by conditions, such as epilepsy, by imposing vehicular driving restrictions. Hence misdiagnosis could potentially have detrimental effects on patients and those with whom they are in contact. In the mental health services, especially forensic psychiatric and psychological services, the safety of society assumes additional legal importance in the assessment and treatment of mentally disordered citizens whose behaviour, rather than clinical condition, poses a serious risk to others. Clinicians are asked to predict the probability of the dangerousness of such individuals and the extent to which treatment interventions can be judged to be effective in reducing the risk of future violence to acceptable levels. As risks in the community are possibly exaggerated by the media in the wake of notorious crimes by the mentally ill, and monetary costs of treatment interventions have escalated, the decisions made by clinicians have a greater impact on the individual patient and collectively on society. Politicians, ever sensitive to public opinion, informed or uninformed, impose additional statutory demands on the health services and scrutinise the decision processes through public and formal enquiries following violent incidents involving the mentally disordered. Thus clinicians are constantly seeking methods of improving the process of the prediction of dangerousness.

It is important to remember that risky decisions are taken to facilitate the progress of patients by reducing the level of security in accord with the clinical judgement of their dangerousness and managing the risks in a less secure environment. Actuarial studies show that clinicians can overestimate dangerousness and therefore restrict freedom longer than was necessary. Grounds (1995, p 46) described risk assessment as a procedure which provides a means of rescue which is expected to steer a safe course between these opposing demands so that we will correctly identify and contain the dangerous patients but not the others. By their very nature, risk assessments predict the presence or absence of future behaviour and therefore lack the luxury of hindsight. The latter is the gift of enquiry teams and should colour their criticisms.

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Considering the enormous consequences of risk predictions and the potential for their misapplication, and given the complexity of the process, prediction studies must be accorded priority in forensic psychiatric and psychological research (Speigel, 1989).

The most promising study to date which offers a framework in which to assess the dangerousness of the mentally disordered offender has been developed by a risk working group led by HJ Steadman and John Monahan, with the support of the Research Network on Mental Health and the Law of the MacArthur Foundation begun in 1988 and still in operation. It will be referred to as the MacArthur study. It is a prediction-outcome study of dangerousness and data is still being collected in several independent jurisdictions in the United States. This interdisciplinary effort has been described as the biggest programme of research ever attempted on the topic (Webster and Eaves, 1995). It is the aim of this paper to critically review its propositions and methodology in reconceptualizing dangerousness in terms of risk assessment and risk management, and its applicability beyond the medico-legal context of the United States. Does the study point the way forward in the clinical decision making process of predicting dangerousness?

**Concept of dangerousness and the mentally disordered**

Because the mentally disordered are seen as dangerous and not responsible for their behaviour as a result of their disorders (Link & Cullen 1986), public opinion readily accepts the position that their involuntary, preventative detention is appropriate, if assessments and recommendations are made to a court by a psychiatrist or a clinical psychologist supporting the decision.

**Legal context: United Kingdom**

In the United Kingdom, the concept of the dangerousness of the mentally disordered patient plays a crucial role in the interpretation of the statutes of the Mental Health (1983) Act. On the one hand, a person who has committed a serious violent offence and whose behaviour has been affected by a mental disorder, and whose condition is likely to respond to treatment, can be detained in a special hospital offering the maximum level of security. Similarly, a person who has not been found guilty of a violent offence but is displaying dangerous behaviour which threatens the safety of others, can also be detained in a place of security under Mental Health
legislation, without involvement in the criminal justice system. Dangerousness, then, can be legally employed to detain involuntarily only one group that has not been arrested for a criminal offence - the mentally disordered.

For many who are so detained, a further restriction order can be imposed by the courts (section 41 or 49, MHA 83), the force of which confines them until the Home Office, or a Mental Health Tribunal (in consultation with the Home Office), decide that they no longer pose a danger to the public and the conditions of the original order no longer pertain. For unrestricted patients, the decision to discharge rests with the responsible medical officer (a forensic psychiatrist). Such decisions are based on the prediction that future dangerous behaviour is not likely to re-occur and the risk has been judged to be within minimal reasonable limits.

At the time of a person's admission to, and discharge from, high security, decisions are influenced by the clinical assessment of the individual's mental state and response to treatment, and how much psychiatric and psychological interventions could reduce or have reduced the likelihood of recidivistic behaviour of a type similar to the index offence, or the original targeted dangerous behaviour. Therefore, both judicial and clinical decisions are based on an assessment of the risk of future violence. These assessments of dangerousness serve the primary function of controlling behaviour by punishment (within the criminal justice system), treatment or confinement (within the mental health system) (Cleveland, Mulvey, Applebaum & Lidz, 1989: Gondolf, Mulvey and Lidz, 1990: Gottfredson and Gottfredson, 1988), and seek to prevent the occurrence of repeated violence.

Department of Health guidelines on assessing potentially violent patients state that...

patients who have a history of aggressive and risk-taking behaviour present special problems and require very careful assessment. They pose particular challenges to clinicians who have to try to predict their future behaviour and the risks of further violence.

It is widely agreed that assessing risk of a patient acting in an aggressive or violent way at some time in the future is at best an inexact science. But there are some ways in which uncertainty may be reduced. (NHS Executive, 1994: paras 27 & 28).
Legal context: United States

In the United States, the concept of dangerousness in legal statutes and court decisions has attained the status of a pivotal role in both criminal and civil aspects of mental health law (Monahan and Steadman, 1994). The American Bar Association's (1989) Criminal Justice-Mental Health Standards specify that a court should commit a person acquitted of a violent crime by reason of insanity to a mental hospital only if the court finds clear and convincing evidence that the person is currently mentally disordered and, as a result, "poses a substantial risk of serious bodily harm to others" (standard 7-7.4). The term "risk of behaviour harmful to others" is used synonymously with the term "dangerousness" in statutes and legal documents, and in clinical parlance. The National Center for State Courts Guidelines 1986 state that particularly close attention be paid to predictions of future behaviour, especially predictions of violence and assessments of dangerousness. Such predictions have been the bane of clinicians who admit limited competence to offer estimates of the future yet are legally mandated to do so. (Sect. G1).

Legal context: Canada

In Canada, the clinician's contribution to the determination of dangerousness arises in the context of Part XXIV of the Canadian Criminal Code. Under these provisions an application may be made before a judge to have an individual already convicted of a serious personal injury offence declared a dangerous offender and committed to indefinite detention. Psychiatric evidence is required as part of the Crown's attempt to demonstrate "a pattern of persistent aggressive behaviour, or acts of such a brutal nature as to compel the conclusion that the defendant's behaviour in the future is unlikely to be inhibited by normal standards of behavioural restraint" [s.753(a)(ii)]. Under the legal arrangements, one side is prompted to secure evidence of risk, while the other is to find mitigating circumstances.

The risk that the mentally disordered person will commit harm, and therefore will be dangerous, remains a core issue in mental health legislation and clinical practice across many national jurisdictions.

"It is evident that there are widely varying forms and levels of dangerousness as regards both the clinical condition of the individual concerned and the circumstances in which the individual finds himself at any particular time. But the issue of dangerousness and of the means of
assessing and predicting its incidence in individual cases in a consistent and objective way is central to the work of forensic psychiatry" (The Reed Committee: Final Summary Report: 1992: p 114).

**Definition of dangerousness**

Dangerousness has little meaning on its own. It is only when in a context that it becomes useful, but any interpretation inevitably will be subjective. Chiswick (1995) thought it odd, and perhaps unfair, that forensic psychiatrists were required to assess dangerousness in their patients, as such a condition could not be accurately defined, reliable recognised or properly diagnosed. It might be more appropriate to devolve the statutory responsibility to forensic clinical psychologists who may be better equipped to assess the behaviours which are regarded as "dangerous" (Cope, 1994). It has proved difficult to arrive at a generally agreed statement about what dangerousness means.

Dangerousness in theory and practice has been addressed from many different angles. There have been important reviews of the history (Foucault, 1978), philosophy (Bottoms, 1977), and legal implications (Baker, 1992) of dangerousness. The Butler Report (1975) and the Floud Committee (Floud and Young, 1981) provide global reviews of dangerousness from a UK perspective.

The Butler Committee (1975) defined dangerousness as a propensity to cause serious physical harm or lasting psychological harm. The problem with the term *propensity* is that it implies a permanent and constant characteristic like left-handedness. It implies that a person is likely to cause others harm all the time and in every situation. Chiswick (1995) described the search for such a somewhat freakish feature of character as a fruitless exercise.

Scott (1977) stated that although it is difficult to define, very important decisions about the patient are based on the concept. He defined it as an unpredictable and untreatable tendency to inflict or risk serious, irreversible injury or destruction, or to induce others to do so (p 127). Tidmarsh (1982) pointed out that the degree of danger may not be reduced, even when the tendency described by Scott is predictable and treatable. However, Scott appears to be substituting the term *propensity* with *tendency*, both of which defy operationalization.
If a tendency to act is an attribute or a personal predisposition, its prediction is unnecessary. To refer to the treatability of a propensity appears to be typically conceptualizing the problem psychiatrically (therefore medically), and reifying it into a unitary condition which may be amenable to medical intervention. If this definition was accepted by the courts, then a person judged to conform to the psychopathic form of mental disorder could never be regarded as treatable and only custodial sentences would apply. The fact that some are considered treatable and dangerous logically implies that the definition of dangerousness cannot include the notion of an untreatable tendency. If dangerousness is by definition unpredictable, in the fullest sense of the term, referring to the irreversible injury of the index offence and the possibility of its re-occurrence, then only the option of total and limitless secure provision would be available to guarantee the protection of the public. Concern should also be paid to the protection and safety of those who are asked to care and manage those who are detained.

The dangerousness of the patient or prisoner must also be evaluated within the secure setting to ensure appropriate management of the risks. Neither extremes apply in practice rendering Scott's definition operationally inapplicable.

Faulk (1988) pointed out that others have objected to the terms unpredictable and untreatable because the recognition of risk or treatability of the patient does not reduce the danger, although it does allow protective steps to be taken. One of the many difficulties with the concept is that dangerousness is not a measurable entity; it consists of many different factors.

What emerges from these definitions is that dangerousness is about the perceptions of observers that violent behaviour will re-occur in the future, on the basis of what the subject has done, or threatened to do. Walker (1978) emphasised that the dangerousness of a person is an ascribed rather than an objective quality and defined a dangerous person as one who has indicated by word or deed that he is more likely than most people to do serious harm, or act in a way that is likely to result in serious harm.
Mullen (1984) pointed out that dangerousness is a quality of an individual's actions rather than of the individual himself. The question to be posed in clinical practice is not ..is this person dangerous? but rather .. might this person in certain circumstances behave in a dangerous way?

**Dangerousness and the mentally disordered**

Only a very small minority of the population is ever likely to be subjected to an assessment of dangerousness. The concept is intimately linked to the mentally ill and to people who have committed violent crimes. Some mentally disordered people are dangerous, and some dangerous people are mentally disordered. There is no empirical support for the strong connection the public assumes between mental disorder and violence. In fact, prior history of violence and drug abuse are more accurate indications of the risk of violence. Research does not always distinguish clearly enough between different types of mental disorder when linking them to violence.

In recent years, much evidence has suggested that specific types of mental illness (schizophrenia, major affective disorders and other psychotic disorders) and violence are associated. Monahan (1994), who previously argued against such a relationship, has now concluded that there is a relationship between mental disorder and violent behaviour, one which cannot be fobbed off as chance or explained away by third factors that caused them both.

Research in the 1970's began to indicate some relationship between mental illness and violence, but not the direct, strong link presumed by the public. In the 1980's, studies continued to show higher arrest rates for patients released from inpatient mental hospitals than for the general public. These studies, however, were inconsistent in finding any relationship between certain psychiatric diagnoses and violence, except for substance abuse and antisocial personality disorder. Link et al (1992) stated that if a patient is not having a psychotic episode, or if psychiatric problems do not involve psychotic symptoms, then he or she is no more likely than the average person to be involved in violent/illegal behaviour. However certain types of symptoms, especially disorders in which people perceive threats against themselves, may increase the probability of risk of violence in persons with mental illness. They concluded that it may be that inappropriate reactions by others to psychotic symptoms are involved in producing the violent/illegal behaviour (p 289).
The criminological view holds that the well established predictors of offending, such as economic deprivation, criminality in the family, poor parenting, school failure, hyperactivity deficit disorder, antisocial behaviour in childhood, are such powerful factors that they overshadow any effect due to mental illness. Previous criminality predicts future criminality, whether or not the person is mentally ill (Wessely and Taylor, 1991). Compared with the risk associated with alcoholism and other drug abuse, the risk associated with major mental disorders, such as schizophrenia and affective disorders, is small. Compared, too, with the risk associated with the combination of male gender, young age, and lower socioeconomic status, the risk of violence presented by mental disorders is modest. Other studies have found little association with mental illness (Sosowsky, 1978; Steadman et al, 1978) or only when liked with personality disorder or substance abuse (Guze et al, 11974; Guze, 1976).

The bottom line from recent research is that the studies to date have shown an increased risk for violence among certain individuals with mental illness compared to the general population; mental illness increases the likelihood of having a violent incident. But.. the absolute risk posed by mental illness is small, and only a small proportion of the violence in our society can be attributed to the mentally ill (Mulvey 1994, page 666). The type and level of symptoms and disabilities are more important than diagnoses for understanding, treating, and preventing violent behaviour in persons with mental illnesses.

It is suggested that more may be learned from longitudinal studies of criminal careers rather than research that compares violence at a particular time in cohorts of mentally ill people with that of controls (Wesseley and Taylor, 1991). Using this method, Lindquist and Allebeck (1990) found the risk of serious violence in schizophrenia to be four times that of normal controls. Similarly, Wessely et al (1994) found that men with a diagnosis of schizophrenia were 3.8 times more likely to commit a violent offence than men with other mental disorders.

If there is an association between serious violence and psychiatric disorder, we should expect to find evidence of it in those patients discharged after receiving psychiatric treatment as a consequence of an offence, and particularly those patients subject to restriction orders and/or treated in a special hospital.
Reconviction has been the usual outcome criterion to be investigated, but this measure has limited validity (Robertson, 1989). Conviction requires negotiation of all stages of the criminal justice system and is likely to be an underestimate of violent behaviour of the cohort under scrutiny.

On the basis of the published research over the past three decades, the estimates of Bowden in 1981 remain the same - that up to 50% of patients leaving special hospitals are convicted of a subsequent offence, and approximately 10% of a serious offence (see table 1, following page.).
<table>
<thead>
<tr>
<th>Author</th>
<th>Cohort</th>
<th>N</th>
<th>Period of follow-up</th>
<th>Reconviction rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>all serious</td>
</tr>
<tr>
<td>Walker &amp; McCabe (1973)</td>
<td>All discharges</td>
<td>673</td>
<td>2 yrs</td>
<td>-</td>
</tr>
<tr>
<td>Soothill et al (1980)</td>
<td>All discharges</td>
<td>673</td>
<td>5 yrs</td>
<td>-</td>
</tr>
<tr>
<td>Norris (1984)</td>
<td>All discharges</td>
<td>599</td>
<td>4 - 8 yrs</td>
<td>20%</td>
</tr>
<tr>
<td>Tennent &amp; Way (1984)</td>
<td>All discharges</td>
<td>617</td>
<td>12 - 17 mths</td>
<td>55%</td>
</tr>
<tr>
<td>Black (1982)</td>
<td>Community discharges</td>
<td>128</td>
<td>5 yrs</td>
<td>39%</td>
</tr>
<tr>
<td>Home Office (1988)</td>
<td>Restricted Conditional discharges</td>
<td>496</td>
<td>5 yrs</td>
<td>27%</td>
</tr>
<tr>
<td>Bailey &amp; MacCulloch (1992)</td>
<td>Community discharges</td>
<td>112</td>
<td>0.5 - 14 mths</td>
<td>37%</td>
</tr>
<tr>
<td>Cope &amp; Ward (1993)</td>
<td>Transferred RSU</td>
<td>38 M</td>
<td>0.5 - 10 mths</td>
<td>11%</td>
</tr>
</tbody>
</table>

Table 1: Patients discharged from special hospitals: reconviction studies
The question of how dangerous these former special hospital patients are can only be answered in relative terms. There are more dangerous people in the public at large, but the rate of re-offending among conditionally discharged, restriction order patients is almost identical with that found in life-sentenced prisoners released on parole (Murray 1989).

Approximately 10% of released life-sentenced prisoners and of conditionally discharged patients are recalled within two years (Home Office, 1993). It is much lower than the average for all those released from prison (Home Office, 1993).

From dangerousness to risk assessment

According to Brooks (1978), the legal concept of dangerousness confounds the variables on which a prediction is based, the type of event being predicted, and the likelihood of the event occurring. For research purposes, the MacArthur study argued that to make sense of the predictions of dangerousness, dangerousness should be disaggregated into three component parts:

a) risk factors, defined as the variables that are used to predict violence;

b) harm, defined as the amount and type of violence being predicted; the harm should be scaled in terms of seriousness, rather than being treated as a dichotomous variable (ie. harm or no harm):

c) risk level, defined as the probability that harm will occur (National Research Council 1989). The risk level should be seen as a continuous variable statement, rather than a dichotomous variable (risk or no risk). Since risk levels are often not stable but fluctuate over time and context, estimates of risk should be in the form of ongoing assessments rather than one-time predictions.

d) finally, given that the goal of public health intervention is prevention, rather than treatment, of harm, risk management as well as risk assessment should be the goal of research.
In reviewing the research literature on dangerousness and risk research, they found that there were three different approaches to the study of risk (cf: Werner, Rose and Yesavage 1983; Grisso, 1991). These were:

a) **Clinical decision making**: studies focusing on the relationship between cues, or risk factors (eg., anger, diagnosis, age, etc) and judgement or clinical prediction:

b) **Clinical prediction**: studies focusing on the relationship between judgement or clinical prediction and the criterion variable (violent behaviour):

c) **Actuarial assessment**: studies focusing on the relationship between cues or risk factors and the criterion variable (violent behaviour).

**Cues and judgement: Clinical decision making.**

Mulvey and Lidz (1984, 1985) have reviewed studies published before the mid-1980's of how clinicians go about predicting violence. Despite the difficulty of an acceptable definition, for most clinicians, the main practical approach to the assessment of dangerousness of the individual focused on the clinical approach as advocated by Scott (1977), Faulk (1988) and Chiswick (1995). This involves taking a full history, from friends, family and carers where appropriate, as well as looking at past behaviour. The clinician, using personal heuristics and subjectively selecting and weighting the variables, makes a decision on the current state of the patient and his/her dangerousness. Scott (1977) pointed to the need to be assiduous in the collection of data and to the importance of the therapeutic alliance and personal contact with the patient which provides the opportunity to continually monitor the need to continually evaluate appropriate interventions. He argued that... *involvement on a long term basis and good communications were therefore the inescapable bases for assessment of dangerousness* (p127).

Werner et al (1984) used a useful methodology which combined the clinicians' judgement with psychometric instruments in estimating the likelihood that the patient would commit a violent act within the first week of hospitalisation. They found that a clinical profile of hostility, agitation, accompanied by paranoid ideation and previous assaultiveness was indicative of potential violence in an acute unit. A similar methodology was used in 1990 by Cooper and Werner to predict violence in a federal prison setting. Positive correlations were found between the prediction of violence and the type of index offence, severity of the offence, history of violence and race.
Segal et al (1988a, 1988b) focused on decision making regarding violence in the community. They found that the symptoms most strongly related to clinical judgement of danger to others were irritability and impulsivity. They found moderate associations with formal thought disorder, and weaker but significant correlations with impaired judgement and inappropriate affect. Research in a hospital psychiatric emergency room, an ongoing research programme of Lidz and Mulvey (Lidz et al 1989; Lidz and Mulvey 1990; Lidz et al, 1992; Apperson, Mulvey and Lidz, in press.), found that while a patient's previous history of violence was the best predictor of clinician ratings, patient hostility and the presence of a serious disorder correlated highly with clinical assessments of current dangerousness. Explicit judgments of the likelihood of future violence were rarely found in actual practice.

Judgement and Criterion: Clinical prediction

Research on the accuracy of clinical judgements at predicting the criterion variable (violent behaviour) was reviewed by Monahan (1981). The five studies considered were (Kozol, Boucher and Garafalo 1972; Steadman and Cocozza 1974; Cocozza and Steadman 1976; Steadman 1977; Thornberry and Jacoby 1979). He concluded that a summary of their findings indicated that even with the best risk-assessments by psychiatrists and psychologists, only one in three predicted to commit violence will actually do so. This was reviewed over a several year period among institutionalised populations that had both committed violence in the past and were mentally ill. There was only one study (Lidz, Mulvey and Gardner, 1993) on the validity of clinicians at predicting violence in the community which was published between 1979 and 1993. On further examination of the literature, the situation remains as Monahan found it in his review. Mental health professionals, in general, have a poor track record of validly predicting violence among the mentally ill (Convit, Jaeger, Lin, Meisner, & Volavka, 1988; Gondolf et al, 1990; McNeil, Binder & Greenfield, 1988; Miller & Morris, 1988). Although an assessment of danger to self and/or others is a basic element of involuntary psychiatric treatment, individual psychiatrists have not been very successful in accurately predicting this danger (Beigel, Barren, & Harding, 1984; McNeil et al., 1988; Meloy, 1987; Steadman and Morrisey 1982).
The best predictors of violence among the mentally ill are the same as for the general population: age, gender, social class, history of prior offences; and the poorest predictors of violence among forensic patients are diagnosis, severity of disorder and personality traits.

Major problems identified in this approach are that the criteria they say they are using in predicting dangerousness do not appear to be the ones they use in practice (Steadman 1973), the accuracy of predictions is poor (Cocozza and Steadman 1978), and the types of errors made are consistently ones of over predicting (Steadman and Morrissey 1981).

Webster et al (1994) devised a very useful convention of assessing and comparing the predictive power of the most methodologically exact studies to date. The traditional way of looking at success and failure in the prediction of violence is to consider a two by two table which measures prediction against outcome.

There are two ways of being right, and two ways of being wrong. The prediction of "not dangerous" (ND) may be confirmed as a "true negative" (TN), or a prediction of "dangerous" (D) may prove correct, yielding a "true positive" (TP). If a person is assessed as non-dangerous, but commits a violent act, a "false negative" (FN) results. An error in the other direction is referred to as a "false positive" (FP). The convention of measuring the predictive power of a study is referred to as "positive predictive power" (PPP), and is arrived at by computing TPs divided by TPs plus FPs and multiplied by 100 (Hart, Webster & Menzies, 1993).

\[ PPP = \frac{TP}{TP + FP} \times 100 \]
<table>
<thead>
<tr>
<th>STUDY</th>
<th>LEGEND</th>
<th>OUTCOME</th>
<th>PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steadman &amp; Cocozza (1974)¹</td>
<td>A = arrested</td>
<td>Lo</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NA</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steadman &amp; Cocozza (1974)²</td>
<td>Lo/Hi = risk</td>
<td>Lo/Hi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thornberry &amp; Jacoby (1979)</td>
<td>D = dangerous</td>
<td>Yes</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sepejajak et al (1963)</td>
<td>V = violent</td>
<td>NV</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Convit et al (1988)¹</td>
<td>V = violent</td>
<td>NV</td>
<td>74%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Convit et al (1988)²</td>
<td>NV</td>
<td>NV</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Klasson &amp; O'Connor (1988)</td>
<td>NV</td>
<td>NV</td>
<td>59%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Kirk (1989)</td>
<td>A = aggressive</td>
<td>ND</td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Lidz et al (1993)</td>
<td>NV</td>
<td>NV</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Menzies et al (1985)</td>
<td>ND</td>
<td>ND</td>
<td>61%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Harris et al (1991)</td>
<td>P = Psychopathic</td>
<td>ND</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TABLE 2. PREDICTIVE POWER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OF STUDIES between 1974-1991</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>NA</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TN</td>
<td>FN</td>
</tr>
<tr>
<td></td>
<td>FP</td>
<td>TP</td>
</tr>
</tbody>
</table>

47%
Cues and Criterion: actuarial assessment

Actuarial research addresses the relationship between specific cues, or risk factors, and the occurrence of violent behaviour (Convit et al, 1988; Craig 1982; Tardiff and Sweillam 1982; Rossi et al 1986). Monahan highlights a series of studies conducted by McNeil and Binder on the prediction of inpatient violence based on actuarial information. McNeil, Binder and Greenfield (1988) found that gender (female), marital status (married), diagnosis (mania) and prior suicidal behaviour (none) were positively associated with violence on the hospital ward. Klassen & O’Conner (1988) suggested that better accuracy in the prediction of violence in the community may be achieved using statistical approaches. They found that a diagnosis of substance abuse, prior arrests for violent crime, and age (young) were significantly associated with arrests for violent crime after release into the community. Some research make the bold claim that statistical actuarial methods of prediction are superior to clinical prediction (Hassin 1986) and have been considered by others as a more radical approach to risk assessment and risk management. Generally, a more moderate appreciation of the value of statistically calculated decisions is that it should enhance individual, intuitive clinical judgements which are made largely on the basis of interviews and examination of records (Dowie 1990; Miers 1990; Clark et al, 1993).


While no single research approach adequately encapsulates every aspect of risk assessment, Monahan states that the solution lies in the combination of several. Firstly, a better understanding as to how clinicians reach clinical judgements is of intrinsic interest and may yield valuable information about the factors clinicians believe to be predictive of violence. Secondly, it will require actuarial research to independently verify the predictive value of these theoretically derived factors. Until then, their actual as opposed to perceived usefulness in risk assessment will remain unknown. And thirdly, until clinicians are better informed of the factors that are actuarially associated with the criterion variable of violent behaviour, there is little reason to expect that research on the validity of clinical judgements of risk will produce results superior to those found in the literature of the ’70/’80’s.

Monahan chose to concentrate on the actuarial approach, informed by the other two approaches, considering it to have the greatest potential to rejuvenate risk assessment research, to inform clinical practice, and to positively affect the development of mental health legislation.
Reconceptualization

In the MacArthur Risk Assessment Study, the authors believed that more realistic and fruitful research could be conducted if the concept of dangerousness was "reconceptualized". The main points in their reconceptualization are:

* to move away from a focus on the legal concept of dangerousness to the decision making concept of risk;
* to lead decision makers and researchers to consider prediction issues as being on a continuum rather than simply being a dichotomy;
* to shift from a focus on one-time predictions about dangerousness for the court to ongoing, day to day decisions about the management and treatment of mentally disordered persons;
* to balance the seriousness of possible outcomes with the probabilities of their occurrence based on specific risk factors.

These suggestions were derived from four major limitations evident in previous research into dangerousness:

1) the range of predictor variables studied has been very narrow, often no more than a diagnosis or demographic information;
2) the measures of the criterion variable (violence) have been very weak, typically arrest for a new violent crime, or re-hospitalisation:
3) the patient samples have been highly restricted, usually to institutionalized males with a prior history of violence:
4) research efforts have been fragmented and have lacked coordination.

Their two primary initiatives were:

1. to develop a series of valid and robust "risk markers" that would allow testing of an expanded set of predictor variables;
2. to link these markers together in a coordinated, multisite clinical field study using a broad array of acute psychiatric inpatients whose outcomes in the community would be rigorously measured.

Markers which had previously been identified and for which there was a method of measuring their significance were derived from studies listed in table 3, on the following page.
<table>
<thead>
<tr>
<th>FACTOR</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics:</td>
<td></td>
</tr>
<tr>
<td>demographics:</td>
<td>Klassen and O'Connor, 1994:</td>
</tr>
<tr>
<td>personal history:</td>
<td>Monahan, 1981</td>
</tr>
<tr>
<td>Situational factors:</td>
<td></td>
</tr>
<tr>
<td>availability of victims</td>
<td></td>
</tr>
<tr>
<td>availability of weapons:</td>
<td>McNeil and Binder, 1987;</td>
</tr>
<tr>
<td>hospitalized or community:</td>
<td>Binder and McNeil, 1988:</td>
</tr>
<tr>
<td>family interactions:</td>
<td>Krakowski, Volavka and Brizer, 1986.</td>
</tr>
<tr>
<td>Clinical factors</td>
<td></td>
</tr>
<tr>
<td>diagnosis:</td>
<td>Krakowski, Volavka and Briger, 1986; Rossi et al., 1986.</td>
</tr>
<tr>
<td>acute symptomatology:</td>
<td>Beck, White, and Gate, 1991:</td>
</tr>
<tr>
<td>type of illness:</td>
<td>Lowenstein, Binder and McNeil, 1990:</td>
</tr>
<tr>
<td>perceived stress</td>
<td></td>
</tr>
<tr>
<td>psychotic symptoms:</td>
<td></td>
</tr>
<tr>
<td>conceptual disorganisation</td>
<td>Noble and Roger, 1989</td>
</tr>
<tr>
<td>command hallucinations:</td>
<td>Hellerstein, Frosch and Koenigsberg, 1978:</td>
</tr>
<tr>
<td>compliance:</td>
<td>Yesavage, 1984</td>
</tr>
<tr>
<td>Personality</td>
<td></td>
</tr>
<tr>
<td>social deviance:</td>
<td>Forth, Hart and Hare (1990)</td>
</tr>
</tbody>
</table>

Table 3. Measurable factors of dangerousness and research sources
The five risk markers which had not been previously studied systematically that held special promise to increase the validity of actuarial assessment were:

1. the amount and type of social support available to the person.
2. impulsiveness
3. reactions to provocation (anger)
4. an ability to empathise with others (psychopathy)
5. the nature of the delusions and hallucinations that sometimes accompany the mental disorder.

These five markers represent measurable elements of the construct violence, the criterion variable. Therefore, if standardized psychometric instruments to measure the elements were available, changes in the level of the criterion variable could be identified.

**Social support network**

To measure social support, they approached Estroff and Zimmer (1994) to examine whether and how the web of relationships and quality of ties with others - social networks and social supports - may be related to violent acts and threats made by people diagnosed with mental illness. Risk for violence is best assessed by investigating what kinds of persons, in what kinds of situations, at what phases of their lives and illnesses, are likely to engage in dangerous behaviours (Monahan and Klassen, 1982; Klassen and O'Connor 1988). They studied the relationships between demographic variables, clinical variables, previous violence variables and social network variables. The variables were derived from various sources: structured interviews, content analyses of statements, functional analyses of offending behaviour, medical records and psychometric tests.

The battery of tests to extract the social network scores included:


The pilot study supported the hypothesis that social networks and social supports are related to violence committed by persons with mental illness.
Reactions to provocation

Accepting anger as an underlying element of violence, its neglect in the prediction of violence literature has been a conspicuous shortcoming (Novaco 1994). Novaco was asked to create a streamlined screening instrument based on his anger scale (NAS). He reviewed all available psychometric instruments for anger in developing his amended scale for the project which were:

- **Novaco Anger Scale (NAS):** Novaco (1994)
- **Buss-Durkee Hostility Inventory:** Buss and Durkee 1957.
- **Over-control Hostility Scale:** Megargee (1966)
- **Cook-Medley Hostility Scale:** Cook and Medley 1954
- **State-Trait Anger Scale (STAS):** Speilberger et al 1983
- **Novaco Provocation Inventory:** Novaco 1975
- **Brief Anger Aggression Questionnaire (BAAQ):** Maiuro, Vitaliano and Cahn 1987

Ability to empathise with others (psychopathy).

Hare et al (1994) were asked to develop a screening tool for the assessment of psychopathy and the construct of empathy for treatment outcome and to assist in risk assessment. The fruit of their labours was the Psychopathy Checklist Screening Version (PCL:SV): Hare, Cox and Hart, in press) derived from the PCL-R.

Impulsiveness

Barratt was asked to revise his Impulsiveness Scale (BIS 1959, 1994) to measure the construct of impulsiveness which he regards as essentially related to the control of thoughts (Barratt 1972). He proposed that the personality trait of impulsiveness is significantly related to one form of aggression labelled impulsive aggression (Coccaro, 1989).

Delusions

The Maudsley Assessment of Delusions Schedule (MADS) (Taylor et al 1994) is an instrument for the reliable and valid assessment of delusional experience and their possible consequences. It can be used to monitor critical developmental patterns of the characteristics of symptoms which may trigger violence. Taylot et al had not completed the revised version in time for the pilot study.
The MacArthur risk assessment study: limitations

There are certain limitations to the study which reduce its applicability as an omnibus risk assessment instrument. The relationship between violent behaviour and mental disorder referred to hospitalized offenders only. It did not extend to other important risk criterion variables such as self harm risk, suicide risk, arson risk, substance abuse risk and escape risk. The study also excluded the concept of psychological harm to others.

The study incorporates both risk assessment and risk management guidelines. This ethically correct twin foci excludes the study of basic relationship between violence and mental disorder and from studying the treatment of the criterion variable (violence) in terms of risk reduction.

It focuses on one component of risk assessment and risk management, viz., the association between certain kinds of anticipatory "cues" and the "criterion" of violent behaviour (Grisso, Tomkins & Casey 1988; Brunswick 1956). Although the study alludes to the distinction between two types of cues, static and dynamic, it does not explain how the interaction of these cues will be measured in practice.

Their political aim was to improve the validity of clinical risk assessment, improving the effectiveness of clinical risk management, and providing information useful to reforming mental health law and policy.

The clinical aim was to compile a comprehensive set of the cues, or factors, that actually anticipate violence and were reasonably feasible to measure in clinical practice. However, there may be vital dynamics of risk assessment that are not amenable to easy measurement which may be excluded by the this approach. They expressed their awareness that variable selection should be done by deduction from a fully articulated and validated theory. No such theory of violence or of mental disorder exists. Therefore they took a broader and more inclusive approach to variable selection.

Factors anticipating violence

The factors were derived from three sources:
* associations with violence identified in research;
* associations with violence identified by experienced clinicians;
* associations with violence hypothesized by models of violence and mental disorder.
The study categorised the factors into conceptual domains. The factor domains are:

a. dispositional
b. historical
c. contextual
d. clinical

Table 4 (below) lists the factors within the afore mentioned domains.

<table>
<thead>
<tr>
<th>1. Dispositional factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Demographics</td>
</tr>
<tr>
<td>i. age</td>
</tr>
<tr>
<td>ii. gender</td>
</tr>
<tr>
<td>iii. race</td>
</tr>
<tr>
<td>iv. social class</td>
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Table 4: the measurable factors anticipating violence
Levels of seriousness
Addressing deficiencies in previous research, the study includes the intention of measuring the levels of seriousness associated with future violence. Physical violence to others in the community would be measured at two levels of seriousness.
Level 1.
* any battery accompanied by an injury
* any battery with a weapon
* any imminent threat of battery with weapon
* any sexual assault
Level 2.
* all other batteries

Field trials
Field trials were conducted from 1988 to 1990 across three sites - the Western Psychiatric Institute and Clinic at the University of Pittsburgh, the Worcester (Massachusetts) State Hospital, and the Western Missouri Mental Health Center, in Kansas City.

Test battery
The test battery included: an exhaustive interview schedule that tapped psychiatric, criminal justice, family history, employment history, alcohol and drug use, child abuse history, violent fantasies, access to weapons, and the number of additional risk markers mentioned in table 4. There were four additional specially commissioned, amended measures:

* Personal Ideation Inventory- Short Form: Rattenbury et al (1984)
* Diagnostic Interview Schedule(DIS): Robbins and Regier (1991)
* Brief Psychiatric Rating Scale(BPRS): Overall and Klett (1972)
* Global Assessment of Functioning(GAF): Endicott, Spitzer and Fleis (1976)

Samples
The samples were consecutive admissions of both male and female, voluntary and involuntary patients, between 18 and 64 years, unscreened for diagnosis (except mental retardation).

Subjects
The subjects were patients and someone the patient named as knowledgeable about his/her behaviour with whom independent collateral interviews were conducted.

Interviews
Interviews were conducted at two monthly intervals up to six months post discharge.
Full scale study

As a result of the pilot, decisions were made which shaped the full scale study.

1. The criterion variables were measured by
   (a) official arrest and mental hospitalization
   (b) self reports obtained by interviewing the subject five times over a one year period after discharge from target hospital, and
   (c) collateral reports from family/friend informants five times over one year period.

2. They used both experienced clinicians and highly trained interviewers to administer the research instruments. There was a major change to the instruments. The Diagnostic Interview Schedule was discarded in favour of the DSM-III-R checklist (Janaca and Helzer 1990). The Maudsley Assessment of Delusions Schedule (MADS: Taylor et al, 1994) was available and introduced.

3. Subjects were:
   (a) males and females,
   (b) between the ages of 18 and 40,
   (c) of white, African American, or Hispanic race of ethnicity,
   (d) English speaking,
   (e) resident in the local area,
   (f) of both voluntary and involuntary admission status,
   (g) unscreened for prior or presenting violence,
   (h) excluding only patients whose primary diagnosis is mental retardation.

4. They anticipated a total sample size of 1000 patients, selected from three civil mental hospitals: the Western Psychiatric Institute and Clinic in Pittsburgh, the Worcester (Massachusetts) State Hospital, and the Western Missouri Mental Health Center in Kansas City.

5. Results will be published in July 1996.

Beyond the MacArthur Study: Violence prediction scheme

There is no doubting that the MacArthur study represents a milestone in the development of a methodology which integrates the worlds of research on prediction and the clinical practice of assessment. It established what a good study ought to look like: data collected from several sites according to a common format: clear definitions of what is being predicted: full measures of outcome during the follow up period: interdisciplinary cooperation (Webster and Eaves, 1995, page v). This quote, referring to the MacArthur study, is taken from the preface of the HCR-20 Scheme, Vol 1. The Assessment of Dangerousness and Risk.
This scheme is a Canadian development which the present author considers a refinement and advance on the MacArthur study and which is more readily applicable to the clinical setting and forensic psychological assessments for the courts. It is the violence prediction scheme (VPS) of Webster, Harris, Rice, Cormier and Quinsey (1994, 1995). While praising the contribution of the MacArthur research group, and eagerly awaiting their results, they insist on pursuing their task of developing and testing scientifically defensible predictive schemes. They also indicate that given the legal and socio-political differences which exist in Canada, as opposed to the United States, it would be unwise to expect American solutions to be directly applicable to matters arising from other national criminal codes and mental health act. This argument clearly applies to the situation in the UK with its Criminal Justice codes and Mental Health jurisdiction.

**Violence Prediction Scale**

The Violence Prediction Scale (VPS) is based on the following research findings, reflected in this paper:

1. When actuarial variables are carefully specified they can singly, and in combination, be fairly powerful predictors of future violence (Harris et al 1993).
2. In support of earlier observations, previous violence tends to be predictive of future violence (Menzies et al 1994).
3. Patients considered personality disordered tend to exhibit more violence on follow-up than those diagnosed schizophrenic (Lidz et al, 1993; Harris et al, 1993).
4. The only clinical special-to-purpose predictive scheme to have been tested systematically (DBRS), although having some reliability, does not appear to possess much predictive utility (Menzies et al, 1994).
5. Clinicians vary appreciably in their predictive power (Menzies et al, 1994) and may predict some groups better than others (e.g., men versus women (Lidz et al, 1993).
6. The PCL-R possesses considerable predictive power as an actuarial device even when scored from files by trained assistants (Harris et al, 1993).

In line with the MacArthur study, they distinguish between statistical and clinical variables in the prediction paradigm. The former are relatively fixed and described as historical. The latter are changeable and described as dynamic. They reduce the number of historical risk variables to 10 on the basis of the strength of their correlation with outcome.
The number of historical variables are:

1. Previous violence
2. Age at first violent offence
3. Relationship stability
4. Employment stability
5. Alcohol or drug abuse
6. Mental disorder
7. Psychopathy
8. Early adjustment
9. Personality disorder
10. Re-admissions.

The dynamic, clinical variable are derived from the MacArthur study and confirmed by experienced staff of the Forensic Commission of British Columbia. These are:

1. Insight
2. attitude
3. symptoms
4. stability
5. treatability

Finally, incorporating the concept of risk management into the equation they devised a third category of variable related to future situations. These are:

1. Feasibility
2. Access
3. Support
4. Compliance
5. Stress

These three variable types, (historical, clinical and risk), have been incorporated into a single assessment schedule called the HCR-20 scheme.

An area of advance over the MacArthur study is the introduction of the concept of weightings. Patients will endorse a variety of variables and will be scored accordingly. However, not all the variables will be of equal importance. Therefore they introduced weightings, derived from the predictive power of each variable and have included them in a Risk Assessment Guide(RAG).
Finally they answered a further weakness in the MacArthur study, by providing a way of integrating the clinical and actuarial judgements with the development of a scoring sheet called ASSESS-List. It represents a constructive and comprehensive outline of a psycho-social assessment which will combine with the actuarial risk appraisal.

They make modest claims about the potential of their approach and emphasize the need for clinicians and administrators to make their decision making processes explicit and to concentrate energies where there is verifiable support for predictive power. They conclude:

*There is every reason to suppose that, collectively, we can become increasingly adept at isolating the absence and the presence of risk and of attenuating serious violence of the kind that arises in conjunction with mental disorder.* (Webster et al 1994, page 66).

**The way forward in risk assessment**

It would appear that the two studies complement each other and collectively form the basis of any risk assessment strategy. One the one hand, the MacArthur Risk Assessment Study is an illustration of how principles derived from decision theory and public health, as well as methodological critiques of the existing knowledge base, can shape the design of a new generation of risk assessment research. (Monahan and Steadman, 1994). The results of the fullscale initiative will be published in July 1996 in UK. On the other hand, the Violence Prediction Scheme has extracted the most powerful predictors and developed a scheme for integrating historical and dynamic variables.

**Risk assessment: a third generation is now required**

Some serious difficulties remain which neither the MacArthur foundation risk strategy, nor the Violence Prediction Scheme (VPS) of Webster et al (1994) have overcome.

1. **Complexity.**

The risk assessment of violence is a complex combination of a vast number of variables, some of which are measurable and others not. The aspects of dangerousness which are unmeasurable could be vitally important. The algorithm which would be constructed to incorporate the measurable variables in the prediction equation could not accommodate the unmeasurable. Weaknesses in predictive power could lie in the omission of important, yet unmeasurable concepts as well as unreliable weightings given to the measurable variables.

Multivariate analyses procedures will be required to handle the outcome data as well as non-linear statistical methods, given that the relationships between variables, and their properties, cannot be presumed to be linear.
2. **The benefits of risk assessment**
Neither approach has emphasised the benefits of risk assessment. This emphasises the point that patients progress has been delayed by the understandable, overcautiousness of decision makers. Robust, tested, reliable and valid risk assessment procedures will benefit patient progress supporting speedier movement to conditions of reduced, yet appropriate, levels of security.

3. **Decision theory applications**
Neither model has attempted to apply decision theory models to the process of risk assessment which is basically clinical decision making in action. While referring to clinical judgement, there is no evidence of employing mathematical models which represent uncertainties to assist in unravelling the complexities of decision making in risk assessment. Further research is required in three major areas, as identified by Doubilet et al. (1988) when writing about clinical decision making:

a. descriptive studies that examine how clinicians actually make decisions:

b. artificial intelligence and neural network approaches that attempt to encode, in a computer programme, the kinds of inference steps, used by clinicians, in reaching decisions:

c. prescriptive, analytic studies that combine data mathematically and determine the optimal strategy, with respect to a specific criterion, or risk, in a particular setting.

4. **Additional risk types ignored**
While neither study denied the importance of assessing additional types of risk criteria other than violence, the methodology has still to be applied to other risk types which are vitally important in addressing the needs of mentally disordered offenders. These are arson, self-harm, self-neglect, suicide, escape/abscondings, drug and substance misuse, and specific types of violent offending such as sexual offending. There will be additional factors which have discreet relevance in predicting each risk type, as well as a substantial number of common variables.

5. **Risk must be expressed as a ratio**
While each approach established the important principle that the level of risk should be regarded as a continuous variable statement, rather than a dichotomous variable (risk or no risk), in addition it should be stated that the outcome level, or the likelihood of the event occurring, should be expressed as a ratio. The levels of confidence associated with the probability of the prediction being true could be similar to the $p$ value in classical statistical theory.
Conclusion

Until the MacArthur Foundation group present their final results in July 4-5, at Wadham College, Oxford, it is unfair to pursue criticisms which they may address in reviewing their monumental study. They have established certain ground rules which any risk assessment strategists must employ. The fundamental ones are that the risk criterion (eg. violence or arson) must be disaggregated into measurable variables or factors: that these factors must be derived from the amalgamation of approaches which previously had been pursued separately ie. clinical decision making, clinical prediction and actuarial assessment: that the harm being predicted must be scaled in levels of seriousness: that estimates of risk fluctuate and requiring constant review and updating: that risk management is an integral part of risk assessment.

Epilogue

Meanwhile, the present author is coordinating an application combining the strengths the MacArthur study and the Violence Prediction scheme in the development of a risk assessment/risk management strategy for high secure psychiatric services. It will inform clinical decisions which affect the care of the patient within, and discharge from, the hospital where there are clearly differing demands for the safety of others.

This initiative will be extended to further risk criterion variables which are relevant: risks of self harm, suicide, arson, substance abuse, escape and abscondion. It will also apply the mathematical techniques of neural network technology to test out the paradigms associated with each of the risk types as implemented by the clinicians. Computer programmes will be written to accommodate the complexity of the data, in conjunction with testable algorithms for each risk type. Their predictive power will be tested by further recidivist and outcome research. Its early promise suggests that neural net technology can refine and improve the predictive power of the variables and will be a unique contribution to risk assessment research (Hammond and McGinley, 1995).
RISK ASSESSMENT REFERENCES


Gunn, J., Meux, C., Burrow, S., and Curle, C. Treatment and security needs of Special Hospital patients. Submitted for publication.


SECTION TWO: ACADEMIC REVIEWS

REVIEW 2

Critique of Critical Incident Stress Debriefing
in High Security Psychiatric Provision
Critical Review of Psychological Debriefing

Introduction
This article critically reviews the use of a particular form of psychological debriefing called "Critical Incident Stress Debriefing" (CISD) (Mitchell, 1983) which has been introduced to Broadmoor Special Health Authority Hospital (through the initiative of Marie McAdams, the staff support advisor, assisted by Rev T Walt and the present author). It is an intervention strategy to enable the mental health care professionals to deal more effectively with the traumatic events to which they are exposed in their work with mentally disordered offenders in a high security setting. Through its introduction to the staff support system, it is hoped that CISD can be used to contribute to the effective management of heightened stress levels, prevent the onset of Post Traumatic Stress Disorder (PTSD) and Prolonged Duress Stress Disorder (PDSD), and ameliorate any associated symptoms (Mitchell, 1983: Dyregrov, 1989: Parkinson, 1993).

The critical aspects of this study will be to review the currently available models in debriefing, and to judge if the model chosen to address the needs of staff in high secure settings offers the best fit, and to examine the arguments supporting its effectiveness.

Professional intervention that addresses occupational stress of health care staff becomes crucial to safeguard quality patient care and to maintain employee health, as well as reducing organizational costs associated with staff absences and insurance claims. Such concern, while not always generated from the purest motives, has contributed to the expanded use of employee assistance programmes and other supportive interventions (Blair, 1985; Howard & Szczerback, 1988; Kunkler & Whittick, 1991; Matheson, 1990; McCue & Sachs, 1991; Mitchell & Bray, 1990).

Stress concept
According to Flach (1990), the formal origins of the stress concept are said to go back to Bernard (1865) who hypothesised the idea of the body being an internal milieu, within which a variety of events occurred. Years later, physiologist Cannon (1939) devised the concept of homeostasis.
The body is organised in such a way as to maintain its own equilibrium, adjusting automatically in the healthy person to internal and external variations. It was Hans Seelye (1988) who first defined the so-called stress syndrome, indicating that stress was a stereotypical part of the body's response to any demand and was associated with the wear and tear on the human machinery that accompanied any vital activity.

Work-related stress can be approached from three angles: environmentally, physiologically and psychologically (Cox and Griffiths, 1994). The first approach treats work stress as a threatening or damaging characteristic of the work environment: as the environmental cause of ill health.

The second approach defines stress in terms of the physiological effects of a wide range of threatening or damaging stimuli. It treats stress as a particular physiological response syndrome. The third approach regards work stress in terms of the way in which people appraise their work and react to it. Stress exists in people's experience of difficult or problematic work and their emotional reactions to such work. It is a psychological state that results from people's perceptions of an imbalance between job demands on the one hand, and their abilities (and constraints and supports) on the other.

**Occupational stressors in high security mental health setting**

Although occupational stress exists in all work situations, the intensity and emotional demands of the psychiatric provision of care within a high security environment, place exceptionally high performance expectations and stress on the mental health care staff (Spitzer and Burke, 1993). This holds especially true for the front line nursing personnel (Rees and Cooper 1992) who are routinely exposed to a great deal of human suffering and danger. Identifying with very psychologically damaged patients is the basis of empathy, and has been identified as an essential aspect of mental health practice. But it has been described as a "self inflicted stress" (Aveline 1995). In the care and treatment of this society's most dangerous and mentally disordered patients, staff are constantly exposed to stressful situations. These range from life threatening assaults, serious verbal threats, witnessing and intervening in violent incidents on staff and patients, to treating the results of patient deliberate self injury and suicide, and the rare event of being taken hostage (Cooper, 1995). This exposure can potentially wear down their usually
effective emotional defences and cause them to experience significant stress related problems. Traumatic stress triggers a number of disruptive processes in the human being. Some of the more common effects of traumatic stress are deterioration in job performance, personality change, anxiety states, relationship discord, grief reactions, depression and suicidal ideation. Traumatic stress is frequently called critical incident stress (CIS).

**Management and interventions: post event**

Often disaster workers needed help in the hours or days shortly after exposure to the event. Experienced persons described themselves as doing what they had to do in order to get the job done. The experience of professional support came from a critique of the technical aspects of the work. Professional counselling or psychiatric assistance even if available, was generally viewed as unacceptable. Most said that they did not feel the need for counselling, however, almost all of those interviewed said that they could have benefitted from a brief talk about the experience, particularly if it involved the work group. Some wished that it had been mandatory.

An informative and role-setting *inbriefing* is critical to the adjustment of the volunteer. This briefing helps form the context for much of what is later felt and seen. When it is not provided, individuals have greater difficulty coping and often fare poorly. Transition out of their rescue work after exposure appears to be facilitated by an *outbriefing* (debriefing) where the workers can ask questions and information can be provided about the event.

Substantial evidence exists that stress management programmes can ameliorate psychological and behavioural factors that are adversely affected by excessive stress (Everly & Smith, 1987). Although occupational stress exists in all work situations, the intensity and emotional demands of the health care environment and patient care delivery, especially in the mental health care services, in often life threatening situations, place exceptionally high performance expectations and stress on health care providers. Stress associated with dramatic, emotionally overwhelming situations, known as *critical incidents*, can overcome professionals normal coping mechanisms, particularly following the injury or death of colleagues, prolonged professional interventions, actual or potential threats to professional well-being, or emotionally charged crises such as sudden deaths (Mitchell, 1982, 1983, 1986; Mitchell and Bray, 1990).
Health care professionals

The effects of critical incident stress on health care professionals can pose potentially life-threatening hazards to patients, families, and other staff who rely on the competent delivery of timely, complex and safe interventions (Graham, 1981; Neale, 1991; Patrick, 1981; Robinson, 1986; Spitzer and Neely, 1992). Nursing staff are the most at risk group for assaults of all mental health professionals (Whittington and Wykes, 1994).

Assault has been defined by Hodgkinson et al (1985), in this context, as any apparently intentional, physically aggressive act committed by a patient towards a member of staff irrespective of severity. Since it is widely acknowledged that only a fraction of assaults are officially reported, reliance on officially reported incidents is to be avoided, or at least used cautiously (Convit et al. 1988).

Mental health care staff: at risk group for PTSD and PDSD

Mental health staff, exposed to traumatic stress in the rarefied atmosphere of high security, are at risk of developing symptoms associated with post traumatic stress disorder (PTSD) (Flannery et al, 1991). Evidence from studies by Brown and Campbell (1991) indicates that more routine and frequently occurring sources of stress have adverse consequences on at risk staff. Studies of assaults of hospital staff by patients have focused primarily on the management of such violence (Carmel and Hunter, 1989: Engel and Marsh, 1986). The diagnosis of PTSD cannot be made if no recognisable traumatic event preceded its onset. But this raises two important questions. First, what makes an event traumatic, as opposed to being simply stressful? Secondly, can an accumulation of stressors produce PTSD-like symptoms? Ravin and Boal (1989) found that the predominant PTSD symptoms of avoidance and intrusive imagery may also be found occurring in response to enduring circumstances involving prolonged duress. Where such situations occur, the condition has been termed prolonged duress stress disorder (PDSD) (Scott and Stradling, 1993). It is argued in this paper that mental health staff in high security are an at risk group for PTSD and PDSD, as well as associated symptomatology.
**Symptomatology**

Symptomatology associated with excessive acute or sustained stress may include cognitive impairments such as diminished memory, decision-making capacity, and attention span; emotional reactions of increased anger, irritability, guilt, fear, paranoia, and depression; and physical problems ranging from fatigue, dizziness, migraine headaches, and high blood pressure to diabetes and cancer. Self-destructive and anti-social behaviour may also be triggered (Everly, 1990; Mitchell, 1982, 1983, 1986; Mitchell and Bray, 1990).

**Preventative measures**

The primary prevention of PTSD and PDSD in the workplace requires that the stressors be eliminated or substantially attenuated whenever possible. Pretrauma training and the development of a crisis management plan are both useful and pragmatic procedures (Williams, 1993). The secondary prevention includes those measures that are employed to prevent the development of permanent emotional injuries by provision of direct services after a trauma and prior to the development of symptoms of emotional distress. This is the basis of critical incident stress debriefing. Tertiary prevention consists mainly in providing resources to an individual, or group, after the emergence of symptoms, or ongoing personal counselling associated with the trauma. It is clear that some professions have predictable and repetitive traumata. Occupational medicine includes the study of job induced traumatic stress (Schottenfield and Cullen, 1986), and the investigation of possible interventions for workers who are exposed to highly stressful events in the line of duty (de Girolamo, 1993). The key activities for coping with traumata and associated risks are essentially *preparedness*, which involves all actions designed to minimize loss and damage, and to organise and facilitate timely and effective rescue relief and rehabilitation: *prevention*, which may be described as measures designed to prevent phenomena from causing, or resulting in traumata, or related emergency situations: *mitigation*, which means reducing the actual or probable effects of a hazard on the people and environment once it has occurred.

The importance of preventative measures for reducing the number and severity of events is self evident (de Girolamo, 1993). It is argued that staff may not seek help on their own and therefore a systems approach may be more efficacious which will include mandatory debriefing.
Mitchell (1983) argues that critical incident stress debriefing response as an early intervention should be conducted only by both professional and peer support personnel who are specially trained to manage traumatic stress and who employ an established standard set of stress intervention techniques. He argues that when efforts to support staff after a critical incident are limited, delayed or non-existent, a traumatic stress reaction may become a far more serious condition called post traumatic stress disorder. He warns that the same could happen if well meaning but untrained people attempt to intervene in a traumatic stress situation. Their lack of expertise and experience in managing traumatic stress may be more harmful to those suffering from it than no help at all. If critical incident stress (CIS) develops into post traumatic stress disorder (PTSD), the effects are emotionally and financially costly to both the individuals and the organization for which they work.

**Critical Incident Stress Debriefing: a preventative measure**

Critical Incident Stress Debriefing (CISD) is a form of psychological debriefing originally developed by Mitchell (1983) for use with firefighters involved in disaster work. The origins of a less formalised debriefing process after trauma can be traced to the military (Samter et al. 1993). The debriefing process was designed to help soldiers process and integrate the details of combat, thereby reducing the emotional reactivity. The debriefing process, based on cognitive reconstruction, conducted by Marshall on the battlefield, immediately after action in World War II, is well documented (Marshall, 1944). Since then, it has been recommended as a stress management technique suitable for groups exposed to traumatic events, and has been practised, as such, by several rescue organizations (Dunning and Silva., 1980; Wagner, 1979; Raphael, 1986; Mitchell, 1981; Bergman and Quenn, 1986; Griffin, 1987; Jones, 1985) and the armed services (Turnbull, 1992, 1994). Nearly 300 CISD teams exist in the United States, while perhaps there are four or five identifiable groups in the UK which offer trained CISD interventions to fire, paramedic, police and other emergency first-responder personnel and recently mental health professionals (American Critical Incident Stress Foundation, 1992.) As well as a preventative strategy, psychological debriefing methods have been used in the treatment of PTSD with outcome evaluation, the first studies of their kind (Bisbey 1995; Busuttil, 1995).
CISD is used within the first 48-72 hours following traumatic exposure. It aims to facilitate information processing by enabling victims who have been subjected to the same traumatic event to process their experiences together in a group format. This allows for the normalisation of the experience, enabling the planning of future needs and the mobilisation of further support if necessary. The debriefing process involves groups of victims of an incident or disaster -

1. recounting their impressions and understanding of the event
2. disclosing expectations, facts, thoughts, sensory impressions and emotional reactions pertaining to it,
3. doing so in a systematic and structured format.

It is designed to enable the victim to re-experience the incident in a controlled and safe environment in order to make sense of, and become reconciled to, the traumatic incident (Tehrani and Westlake, 1994). Shalev (1994) maintains that, although it is intuitively helpful, the structure of this technique, its goals and its mechanisms of action have not been identified. He states that a systematic description is needed in order for debriefing to become an object of scientific scrutiny and interest. While controlled studies demonstrating the efficacy of psychological debriefing in the prevention of PTSD have not been conducted, supportive evidence does suggest, however, that the use of critical incident stress debriefings (CISD) as an intervention option in health care settings is effective (Alexander and Wells, 1991). This paper will examine the case supporting the strategy of Critical Incident Stress Debriefing (CISD) as a potentially preventative method of avoiding the onset of post traumatic stress disorder (PTSD), prolonged duress stress disorder (PDS), acute stress disorder (ASD) and associated symptomatology.

Historical roots
The recent history of the development of psychological debriefing is linked with the development of post traumatic stress disorder (PTSD) as a discreet diagnostic entity. Therefore, it is essential to establish the symptomatology related to the onset of PTSD and its course in order to clearly identify the stage at which debriefing should be introduced. The term "post-traumatic stress disorder" has been in use since 1980 when the symptoms were first described in the DSM-111 diagnostic manual published by the American Psychiatric Association. This
diagnosis identified the psychological consequences of war, particularly as experienced by Vietnam veterans. It came to be recognized that there are important similarities between psychological stresses involved in war and those which occur in response to major disasters or are caused by other more personal trauma.

**Post Traumatic Stress Disorder**
Post traumatic stress disorder can be defined as the development of certain characteristic symptoms following a psychologically distressing event which is outside the range of normal human experience.

For the purposes of this study, the main diagnostic features of PTSD will be summarised from DSM IV (1994). The principal criteria which must be present are:

a. The experience of an abnormal stressor.
b. The re-experiencing of the event.
c. Resultant avoidance behaviour.
d. Increased arousal to stimuli.
e. Symptoms persist for more than one month.
f. Impaired social and occupational functioning

PTSD is the development of these characteristic symptoms following exposure to an extreme traumatic stressor involving:

1. direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's personal integrity:
2. witnessing an event that involves death, injury, or a threat to the physical integrity of another person:
3. learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate.
It is important to note associated features and disorders as sometimes these features are mistakenly believed by many to be omnipresent:

- guilt
- interpersonal stressors
- self harm
- dissociative symptoms
- hopelessness/helplessness/depression
- social withdrawal
- hostility
- impaired relationships
- phobic avoidance
- impaired affect modulation
- impulsivity
- somatic complaints
- feeling permanently damaged
- loss of beliefs
- feeling threatened
- personality change

Its prevalence varies from

- Community based: 1% - 14%
- at risk groups: 3% - 58%

At risk groups are those who are more likely to be exposed to known traumatic events. Examples include combat veterans; those exposed to criminal violence or violence associated with mental disorder; those living in the vicinity of volcanos; front-line staff; rescue personnel; accident and emergency services.

**Casualty typology**

Casualties of critical incidents are not confined to the victims but will include relatives, helpers, rescue workers etc. Taylor and Frazer (1981) provided a useful description of levels of involvement with the index incident and include:

a. Primary casualties: Individuals directly experiencing the event who may or may not be physically injured.

b. Secondary casualties: grieving relatives, friends and colleagues, fellow patients of the primary casualty.

c. Third level casualties: rescue and recovery personnel needing help to maintain their functioning efficiency.

d. Fourth level casualties: the community/organisation involved.
Casualty typologies (cont)
e. Fifth level casualties: people who are emotionally vulnerable for whom the event precipitates distress.
f. Sixth level casualties: those who could have been primary victims.

Morbidity levels
* 20-70% of victims experience symptoms in first week: there is significant drop after 10 weeks.
* 30-40% experience symptoms in first year
* 30-70% continue in second year especially manmade events and high rate of shock
* 20% continue in second year from natural disasters

Course
* any age
* symptoms within 3 months
* some delayed
* criteria for acute stress disorder
* symptom variation in type and intensity
* duration of the symptoms vary: complete recovery in 3 months = 50%
* development of PTSD is function of severity, duration and proximity of exposure to the event.
* course influenced by social supports, family history, childhood experiences, personality variables, and pre-existing mental disorder.
* predisposition not necessary precondition especially if stressors extreme.

Differential diagnosis
a. adjustment disorder: stressor can be of any severity
b. psychopathology present before extreme stressor cannot always be attributed to PTSD
c. if symptoms response pattern meets criteria for mental disorder (e.g., brief psychotic episode, conversion disorder, major depressive disorder) these diagnoses should be given instead of, or in addition to PTSD.
Differential diagnoses (cont).

d. acute stress disorder: must occur with 4 weeks of event and resolve within that period. If symptoms persist, diagnosis changes to PTSD.

e. obsessive-compulsive disorder:

f. flashbacks in PTSD must be distinguishable from illusions, hallucinations and other perceptual disturbances in mental illness.

g. malingering to be ruled out.

Despite advances, many aspects of PTSD remain obscure (Ursano, Fullerton and McCaughey 1994). Present research includes studies of the etiology, taxonomy, and validity of PTSD (Goldberg et al., 1990; Jones and Barlow, 1990; Laufer, Brett and Gallops 1985; March, 1990); examination of disorders other than PTSD which may follow trauma (Karem 1991; Rundell et al. 1989); research on co-occurring diagnoses with PTSD (Breslau and Davis; Roszell et al., 1991; examination of the stressor criterion (Breslau and Davis, 1986; Feinstein and Dolan, 1991) and the relationship between indicators of chronic stress and symptoms of PTSD (Davidson and Baum 1986).

Conclusion

* PTSD is defined as the development of certain characteristic symptoms following a psychologically distressing event which is outside the range of normal human experience.

* PTSD can arise following a major disaster where many people have been affected, or after a more personal, intimate event that leaves the individual or a small group of people traumatised.

* A poor support network, a lack of anyone to provide information or aid understanding of what is occurring and a failure of previously learnt coping mechanisms may also contribute to the occurrence of PTSD

* People who have not been psychologically debriefed following a traumatic incident are more likely to go on to develop PTSD or seek help because they do not understand what is happening to them and fear they may be losing their mind.
**Acute stress disorder**

Acute Stress Disorder is distinguished from Post Traumatic Stress Disorder because the symptom pattern in Acute Stress Disorder must occur within 4 weeks of the traumatic event and resolve within that 4-week period. If the symptoms persist for more than 1 month and meet criteria for Post Traumatic Stress Disorder, the diagnosis is changed from Acute Stress Disorder to Post Traumatic Stress Disorder.

**Comorbidity**

Not all psychopathology that occurs in individuals exposed to an extreme stressor should necessarily be attributed to post traumatic stress disorder. Symptoms of avoidance, numbing, and increased arousal that are present before exposure to the stressor do not meet criteria for the diagnosis of post traumatic stress disorder and require consideration of other diagnoses (e.g., a mood disorder or another anxiety disorder). Moreover, if the symptom response pattern to the extreme stressor meets criteria for another mental disorder (e.g., brief psychotic disorder, conversion disorder, major depressive disorder), these diagnoses should be given instead of, or in addition to, post traumatic stress disorder. Other conditions, such as major depression, generalized anxiety disorder, and substance abuse, are well documented after exposure to traumas and disasters (Davidson and Fairbank, 1992; Breslau et al., 1991; Kulka et al., 1990) and can co-exist with PTSD in the general population.

Questions to be asked are:

* Can the staff in high secure settings be described as an "at risk" group for PTSD, PDSD and ASD?
* Is the severity of the traumas to which the staff are exposed serious enough to lead to PTSD and to warrant preventative strategies?
* Is CISD a valid intervention strategy?
* Is there any demonstrable proof of its efficacy of outcome?
Traumatic stress model

The scientific study of trauma involves numerous conceptual, practical and methodological dilemmas (for reviews, see Green, 1982; Baum, Solomon and Ursano, 1990). The development of PTSD is related to an individual's initial, presumably "normal," adaptive cognitive and physiological responses to the original traumatic event (Perry et al, 1990; Perry, 1991). Many of the symptoms of PTSD are, in effect, the persistence of this original adaptive response to danger (Perry, Conroy and Ravitz, 1991).

Figure 1, presented on this page, outlines the possible routes in the course of response to a traumatic event, the stressor, indicating adaptive and maladaptive resolutions.

The stressor criterion

The stressor criterion is defined as an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others. This criterion is qualified. The event must trigger in the person a response described as involving ..intense fear, helplessness, or horror. This represents a change in the interpretation of the stressor criterion from DSM-III-R and allows for individual differences in responses to events, and emphases perceptual, cognitive and attributional processes. Trauma is regarded as very much in the eye of the beholder. One person's trauma is just another event to his neighbour. What's the difference between a simple trauma and a complex one? A simple trauma has been defined as one which can be attributed to events and to the outside world.
A complex trauma is one which seems to involve one’s inner being, and which the person feels that they have actually participated in (Horowitz, 1986.) This explains the development of guilt and would explain why sexual trauma is so damaging, as it involve the violation of intimacy. If trauma is linked to crisis in earlier developmental stages of growth, it is likely to have more lasting effects in a way in which a single event in adulthood would not.

**Trauma types**

A trauma involving a human agency has a more severe impact, especially one based on malevolence. There will be more anger and dismay attached to reactions. If the trauma experienced is exacerbated by isolation from human contact, as in the case of hostages, the expectation would be that the traumatisation would be more prolonged. Responses to trauma vary. Despite commonalities, no two individuals or traumas are exactly the same. In order to understand responses to traumatic events, it is important to consider the individual and his/her context (Ursano, Fullerton and McCaughey, 1994). The model on the following page(figure 2) illustrates the relationship between traumatic events, stress mediators and health. It addresses several basic questions. What is the nature of the trauma? Who are the victims, and how are they at risk? How does the recovery environment affect outcome?

**Severity**

Both the type and the severity of a traumatic stressor must be assessed to understand the relationship between a traumatic event and its effects on health. Some aspects of traumatic events are common to all disasters and such traumas can be considered generic; others are event specific. Studies have shown that the severity of the stressor is correlated with symptom severity (Helzer et al 1987: Shore et al 1986: Yager, Loafer and Gallops 1984). The severity of the stressor is not equivalent to the type of stressor (Ursano 1987). Given a severe enough trauma, its characteristics may be less important in determining the risk of psychiatric illness. But all individuals have their unique vulnerabilities (Goldberg et al.,1990).
Fig. 2 Traumatic stress model (Green et al, 1985)
Repeated exposure

Repeated exposure to trauma can put rescue workers, especially first responders such as firefighters and police officers, at increased risk of developing PTSD (Durham, McCammon and Allison, 1985; Keating et al., 1987; Breslau et al., 1991; McFarlane and Raphael, 1984).

Sensory modalities

Victims are differentially traumatized through the senses, as involvement will impact on what is viewed, smelled and touched. Odour may have the highest potential to recreate significant past episodes in a person's life. The strength of memory appears to vary with the special involvement a person has with the odour (Engen 1987). The amount of forgetting of olfactory recognition memory, both long and short term, is very small and thus, the accurate recognition of odours when encountered again is very high (Engen, 1987; Engen, Kuisma and Eimas, 1973).

Individual differences

Why do some people survive traumatic events apparently unscathed psychologically and others do not? Is this just a problem with the person, or is it because of the nature of what has happened to them? In fact, most people exposed to traumatic events do not develop PTSD, so what distinguishes those who do develop long term problems from those who do not? Reports to date would indicate a lack of certainty in answering the question. In studying the possible course of the development of PTSD, it is clear that first three stages after exposure to a trauma are the same for everyone. Mediating variable have been identified which make some more likely to develop PTSD in the maladaptive reactions after stage three.

Mediating variables

1. Personality factors: if there were pre-morbid factors such as anxiety proneness, it would increase the likelihood of the development of PTSD.
2. Nature of involvement in the event: if the person was very close to the centre of what happened or had a prolonged stressful experience.
3. Meaning: the social context of a trauma is an additional dimension of the stress felt by the individual.
4. Previous bad life events increase likelihood of PTSD.
5. **Social supports:** social supports, directly and indirectly, contribute to the behavioural and mental health outcomes of individuals exposed to disasters. Research findings on the relationship between social supports and health outcomes are mixed (for a review, refer to Wallston et al, 1983) suggesting the need to further examine their influence. Families can be an important source of emotional and instrumental support to the primary victims of traumas (Figley 1983). They can provide comfort and understanding to disaster workers (Raphael 1986). Providing support during times of stress can be rewarding to the support provider, but it may also be stressful (Shumaker and Brownell 1984; Solomon et al 1987; Taylor, 1990; Fullerton et al, 1992). The support provider may become overwhelmed if the demands are experienced as excessive and burdensome (Solomon et al 1987; Solomon 1992).

6. **Risk factors:** early separation from parents, neuroticism, pre-existing anxiety or depression, and family history of anxiety (Breslau et al., 1991).

To summarise, PTSD is defined as the development of certain characteristic symptoms following a psychologically distressing event which is outside the range of normal human experience. It can arise following a major disaster where many people have been affected, or after a more personal, intimate event that leaves the individual or a small group of people traumatised. A poor support network, a lack of anyone to provide information or aid understanding of what is occurring and a failure of previously learnt coping mechanisms may also contribute to the occurrence of PTSD. People who have not been psychologically debriefed following a traumatic incident are more likely to go on to develop PTSD or seek help because they do not understand what is happening to them and fear they may be losing their mind.

**Theoretical models of PTSD**

To fully appreciate the psychological rationale for debriefing, it is important to have knowledge of the theoretical models which have been posited to explain the onset of PTSD. The variety of treatment strategies depend for their rationale and efficacy on a specific model.
Within the field of trauma research, a variety of conceptual models have been developed to explain the formation and resultant symptomatic picture of PTSD. In briefly summarising them, the intention will be to provide sufficient information to demonstrate how psychological debriefing best fits.

1. In the information-processing model, Horowitz (1973, 1974, 1976, 1979, 1986) builds on classical theories of trauma, but places a major emphasis on information processing and cognitive theories of emotion. He outlines progressive stages in the reaction to massive stress and information overload:

   Phase I: massive stress crying out stunned reaction
   Phase II: avoidance (denial and numbing)
   Phase III: oscillation period (denial - numbing intrusions)
   Phase IV: transition
   Phase V: integration (competing the process of information).

To understand a person's symptomatic presentation, Horowitz (1986) places considerable emphasis on the characterological cognitive style, patterns of conflict, and coping mechanisms of the individual. The sensory information of the trauma lies outside the realm of his normal experience. The unprocessed information remains as an active form of memory and disturbs ego functioning.

2. In the psychosocial model, Green, Wilson and Lindy (1985) build on the information processing model of Horowitz (1976, 1979) and focus on the interaction of the traumatic stressor, normal reactions to trauma, individual characteristics, and the social/cultural environment. A supportive environment enhances, while an adverse one hampers, the working through of the traumatic experience. The research by Wilson and Kraus (1985) with Vietnam veterans supports the correlations between the degree and nature of the trauma and the severity of PTSD; the lack of social support and the severity of PTSD; and the lack of premorbid personality factors and the development of PTSD.
3. In the *behavioural/learning theory model*, Keane et al (1985) posit a two factor learning theory of psychopathology to account for the acquisition and maintenance of PTSD. Given the evidence pointing to the behavioural treatment of PTSD as the treatment of choice, the understanding of this model is important. Originally postulated by Mowrer (1947, 1960), the two factor theory states that psychopathology is a function of both a) classical conditioning, where a fear response is learned through principles of association, and b) instrumental learning, whereby individuals will avoid those conditioned cues that evoke anxiety. Therefore conditioning of cues, stimulus generalization, higher order conditioning and incomplete exposure to traumatic memories help explain the complexity of the symptomatology. The potential of this behavioural model is to draw attention to higher order constructs such as attribution, motivation, development within the therapeutic relationship.

4. In the *cognitive appraisal model*, Janoff-Bulman (1985) and Epstein (1991) focus on constructs that victims make of the world and the events. Traumatic events are seen as potent disrupters of these basic assumptions about the self and the world. While some form of post traumatic responses are seen as healthy, PTSD is viewed as maladaptive coping responses to the invalidation of these basic beliefs. The model allows for the continuum from normal to pathological responses to trauma. It also lends itself to its psychometric evaluation through repertory grids based on Kelly's (1959) similar theories of attribution.

5. The *psycho-dynamic model* has been used to explain the combat neuroses of soldiers (Freud 1919; Kardiner, 1941; Hendin et al, 1981) but frequently over-emphasises pre-trauma personality and early childhood conflicts as the major factors in determining the possible development of PTSD after trauma (Grinker and Speigal 1945: Rappaport, 1968). Certainly, Peterson, Prout and Schwarz (1990) do not regard classical analytic treatment as a treatment of choice. However, the roles of conflict, regression (especially in ego functioning), transference and counter-transference, can provide greater understanding of the reaction of the person's psyche to traumatic stress, as well as the nuances of the therapeutic relationship.
6. In the *Psychosocial-developmental/psychoformative model*, drawing on the theories of Erikson (1946, 1968) and Lifton (1967, 1973, 1976), Wilson (1977, 1978) has suggested a psychosocial model which highlights the effects of massive trauma on development. Linked to Erikson's stage model of development, it is hypothesised that the trauma will counteract the normal crisis associated with the developmental stage of personal identity. This leads to extreme disruption and failure to resolve the crisis, especially in adolescence and early adulthood.

7. In the *object relations theory formulation*, Brende (1982, 1983), interpreting the work of Kohut (1971) and Kernberg (1975), regards the power of the trauma sufficient to effect "splits" in the personality and contribute to the dissociative quality of PTSD. This model was prominent in the debate by the DSM-III-R committee on PTSD to place the diagnosis within the dissociative disorders. However, it has remained in the anxiety disorders.

8. In the *psychophysiological/psychobiological model*, de la Pena (1984) hypothesises that a constitutionally based factor (eg brain physiology (van der Kolk and Greenberg, 1987) explains the predisposition of some individuals for developing PTSD. Several biological systems are affected eg., the central and peripheral sympathetic nervous system (SNS), the hypothalamic-pituitary-adrenocortical (HPA) axis, the endogenous opioid system, and the diurnal sleep cycle (Boehnlein, 1989; Burgeswatson, Hoffman and Wilson, 1988; Wolf and Mosnaim, 1990). The learned helplessness hypothesis of Seligman and Beagley (1975) can be used to identify neurobiological changes that occur in humans who develop PTSD. These biochemical changes reduce escape behaviour and the ability to respond to stress. Inescapable stress is associated with conditioned fear responses related to exposure to the trauma (Davis, 1986).

9. In the *cybernetic model*, Schultz (1984) builds on psychodynamic and behavioural models of the disorder and applies systems theory to clarify the process. Schulz argued that memories of combat lead to increased arousal, and vice versa, creating feedback loops between memories which lead to physiological arousal. This would explain the balance between recall and suppression of the trauma. Hence, a deviation-amplifying cybernetic circuit develops. The causality posited by the earlier models is linear and postulates cause and effect, Schulz introduced the concept of *circular* causality.
As long as the circuits remain intact, the symptoms will remain. This model allows for multiple causes and multiple solutions however, it does not appear to acknowledge the primacy of some symptoms.

10. In the integrated model, Peterson, Prout and Schwarz (1990), from whose review the aforementioned models were summarised, uses the psychosocial model of Green et al (1985) (cf: figure 2: traumatic stress model, page 63), which is itself an integrated model, as the starting point. They emphasise the following points: how the person experiences the event: length and intensity of the trauma: degree of life threat: bereavement: role of survivor (active or passive): type of trauma (man-made or natural) and the idiosyncratic aspects of the trauma.

In summary, the various attempts to explain the development and persistence of recognised PTSD symptoms are contained in the various theoretical models which have been presented. Table 1, on the following pages, summarises the symptoms, comparative mechanisms and the theoretical orientation from which they are derived.

<table>
<thead>
<tr>
<th>Table 1. PTSD Symptoms, Comparative Mechanisms and Theoretical Orientations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PTSD DSM-III-R symptoms</strong></td>
</tr>
<tr>
<td><strong>A. Reexperiencing the trauma</strong></td>
</tr>
<tr>
<td>1. Recurrent and intrusive recollections of the event</td>
</tr>
<tr>
<td>2. Recurrent or distressing dreams</td>
</tr>
<tr>
<td>3. Sudden acting or feeling as if traumatic event were recurring</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>PTSD DSM-III-R symptoms</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>B. Persistent avoidance of stimuli associated with the trauma or numbing of general responsiveness</td>
</tr>
<tr>
<td>1. Deliberate efforts to avoid thoughts or feelings associated with the trauma</td>
</tr>
<tr>
<td>2. Deliberate efforts to avoid activities or situations that arouse recollections of trauma</td>
</tr>
<tr>
<td>3. Psychogenic amnesia</td>
</tr>
<tr>
<td>C. Increased arousal</td>
</tr>
</tbody>
</table>

Table 1 (cont). PTSD Symptoms, Comparative Mechanisms and Theoretical Orientations

In describing the processes of psychological debriefing, and critical incident stress debriefing particularly, many of the concepts which underpin the theoretical process models of PTSD will be identified.

**Psychological debriefing**

Psychological debriefing is a method of defusing tension, providing ventilation of feelings, emotional reassurance, education (regarding stress awareness and reduction techniques), consultation and referral assistance to distressed personnel (Mitchell, 1982, 1983, 1986; Mitchell & Bray, 1990). Hartsough and Myers (1985) explained that it was a specific, focused intervention to assist workers in dealing with the intense emotions that were common to such a time. It also assisted workers by teaching them about normal stress responses, specific skills for coping with stress, and how to support each other.
Informal short defusing held within one to four hours of a traumatic event help immediately to stabilize personnel involved in a critical incident. It allows either their necessary re-entry into the situation or their return home following reduction of debilitating stress. Formal debriefings are effective with larger groups. These structured sessions are confidential discussions of the stress provoking situation and are conducted 48 to 72 hours following a critical incident (Mitchell, 1993; Hodgkinson and Stewart, 1991). Mitchell (1993) emphasises that debriefings undertaken earlier than 48 hours post incident are often not successful as the victims are too cognitively defended or shocked to discuss their feelings about the incident. However they maintain that debriefings can be undertaken several weeks after the incident and still be effective. Debriefings are not situational critiques, or psychotherapy, but instead, are opportunities to put traumatic experiences into perspective. The goal is to accelerate the normal recovery of normal people who are suffering through normal but painful reactions to abnormal events (Mitchell, 1983, 1986; Mitchell & Bray, 1990). In addition to individual stress reduction, debriefings enhance group cohesiveness, team building, and inter-agency cooperation. The provision of psychological debriefing to affected personnel within 72 hours, helps minimize the possibility of staff members misinterpreting their own personal reactions and being vulnerable to Post Traumatic Stress Disorder (PTSD). Disorder may be an inappropriate term to use, as the subject of trauma is more complicated than first considered. The condition is so widely spread amongst survivors as to be considered the norm rather than something affecting a sensitive minority. Despite this recognition, and despite the large body of expertise which has developed in response, treatment for those experiencing PTSD is often inaccessible to those most in need. There are currently three main models of debriefing which are represented in table 2 on the following page.
Table 2: Models of psychological debriefing

<table>
<thead>
<tr>
<th>Mitchell</th>
<th>Raphael</th>
<th>Dyregrov</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction/rules</td>
<td>1. Introduction/rules</td>
<td>1. Introduction/rules</td>
</tr>
<tr>
<td>2. Facts</td>
<td>2. Initiation into disaster</td>
<td>2. Expectations and facts</td>
</tr>
<tr>
<td>3. Thoughts</td>
<td>3. Experience of disaster</td>
<td>3. Thoughts and decisions</td>
</tr>
<tr>
<td>5. Symptoms</td>
<td>5. Relationships with others</td>
<td>5. Emotional reactions</td>
</tr>
<tr>
<td>7. Re-entry</td>
<td>7. Disengagement</td>
<td>7. Future planning/coping</td>
</tr>
<tr>
<td></td>
<td>8. Review and close</td>
<td>8. Disengagement</td>
</tr>
</tbody>
</table>

Commentary on the models of psychological debriefing

Mitchell's critical incident stress debriefing model directs the group of participants, within a cognitive framework, through a well structured process. It starts with an introduction and exploration of the facts, moves gradually through stages to the emotional experience of thoughts, reactions and symptoms, and then back to the safety of cognitive understanding (educational input) and the final process of re-entry.

Dyregrov (1989) based his model on that of Mitchell although there are some differences. Dyregrov places greater emphasis on normalization of reactions and responses and suggests that this may be safer for the participants. The element of help from family, friends and colleagues is found in the Dyregrov model.

The model developed by Raphael (1986) does not follow the [cognitive emotional cognitive] patterns adopted by Mitchell and Dyregrov but rather is involved with the individual participants and their emotional experiences. Raphael alone has a stage dealing with the participants' feelings for the victims of the incident. Raphael's model of debriefing focuses on the emotional experience of the victims. There is no formal exploration of the cognitive processes during or post incident, as is found in the Mitchell and Dyregrov models.
Table 3: Mitchell's model of CISD consists of seven progressive phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Phase</td>
<td>motivate, ground rules, overview of debriefing process</td>
</tr>
<tr>
<td>Fact Phase</td>
<td>who are you?, what was your role?, what happened?</td>
</tr>
<tr>
<td>Thought Phase</td>
<td>begin to personalise experience, what was your first/most prominent thought?</td>
</tr>
<tr>
<td>Reaction Phase</td>
<td>often most emotionally powerful, what was the worst part of the event for you personally?</td>
</tr>
<tr>
<td>Symptoms Phase</td>
<td>elicit symptoms, cognitive, physical, emotional, behavioural, discuss symptoms at scene, a few days later and at time of debrief.</td>
</tr>
<tr>
<td>Teaching Phase</td>
<td>normalise reactions, stress management techniques, discuss other possible effects of experience eg., on relationships, explain possible development of symptoms</td>
</tr>
<tr>
<td>Re-entry Phase</td>
<td>any questions?, summary of debrief, arrange follow-up if appropriate</td>
</tr>
</tbody>
</table>
Debriefing may be initiated by requests from individuals who are experiencing stress or whose stress-induced behaviour or emotional changes have been recognised by supervisory personnel.

Following familiarization with the debriefing intent and process, participants are invited to share the nature of their involvement in: the traumatic events; initial personal thoughts; emotional reactions; awareness of differential behavioural, physical, cognitive or emotional symptoms. Characteristic symptomatology is reviewed along with specific instructions for reduction and recovery. Information on issues such as grief process, suicide, and normal physiological response to stress may be provided. A summary is made in the final phase, and opportunities are identified for additional emotional support and referral assistance.

**Common elements in debriefing**

All forms of debriefing have a number of elements in common:

* it is usually done shortly after the event;
* it is practised at the site of the action or within the same organisation setting in which the exposure took place:
* debriefing is conducted in groups with individuals who have been exposed to the trauma but many may be primary, secondary etc casualties:
* it always involves a degree of cognitive review of the event and has a factual basis:
* it includes verbal and emotional exchanges within the group
* it includes the sharing of information, the reframing of previous views and learning new information.

The success of the Mitchell debriefing model (Mitchell, 1983, 1986) in critical stress reduction has been widely recognised and has been the basis for many CISD team developments (Spitzer & Burke, 1992; Turnbull, 1995).

**Individual debriefing models**

While psychological debriefing is normally regarded as an intervention strategy in a group setting, similar formal procedures have been introduced, derived from the Mitchell model, in individual settings as a preventative strategy as well as a treatment paradigm for post traumatic stress disorder itself (Bisbey 1995). This application is called traumatic incident reduction (TIR) developed by French & Gerbode (1995).
Critical evaluation of psychological debriefing effectiveness

There is a dearth of systematic evaluation and outcome studies of CISD (Raphael, Meldrum and McFarlane, 1995). The approach and apparent success of debriefing programmes in handling personal stress supports their use in many critical situations eg., multiple murder investigations. (Sewell, 91). In one of the few systematic evaluations, many subjects (welfare workers) reported two weeks after debriefing that they had found it helpful and felt less stressed (Robinson and Mitchell, 1994). Randomised controlled trials of the effectiveness of debriefing have not been reported, although a few studies include comparisons with a group that was not debriefed. A study of firefighters two weeks after they had dealt with a hotel fire in Norway showed that most of those who attended debriefing reported that it had helped and increased their self confidence. Their scores for intrusive thoughts and avoidance behaviour measured by the impact of events scale (Horowitz, Winer and Alvarez, 1979) were no different from those of the group who had simply talked to their colleagues informally (Hytten and Hasle, 1989).

Nearly half of a group of emergency workers surveyed one year after attending serious bus crashes still reported considerable symptoms, and 13% thought that they would probably not recover (Griffiths and Watts, 1992). Those who had been debriefed (182 of 285) had significantly higher scores for morbidity and distress on the GHQ (Goldberg and Hillies, 1979) and the impact of events scale. These findings provide little evidence that the debriefing, even though perceived as helpful, was effective in preventing negative outcomes. The group with high distress might have been worse without it, but the study was unable to show this. Similar findings were obtained in a longitudinal study of 195 people who had been debriefed and 133 had not (Kenardy et al, in press). Screening for degree of stressfulness, threat, and psychological exposure over the subsequent two years found a general decrease in symptoms, with less improvement over time among those who had been debriefed, even though 80% rated the debriefing as helpful. Clearly, neither perceived helpfulness nor experience of debriefing was associated with more positive outcomes. These studies were not controlled trials. The groups may not have been comparable, perhaps experiencing different stressors (loss rather than trauma), having uncertain roles, and having more welfare or counselling functions, for which the debriefing model was inappropriate, or perhaps being more distressed at the outset.
Raphael, Meldrum and McFarlane (1995) considered that it was conceivable that debriefing may exaggerate the traumatic process and may even be associated with a delayed presentation (Watts 1994). They suggest that exposure to informational social support, which forms part of much debriefing, is associated with increased vulnerability to traumatic symptoms in trainee police officers.

Retrospective data, such as Solomon and Benbenishty's (1986) survey of combat veterans of the Lebanon War, which was conducted one year after the war, suggest that early intervention is effective in reducing the incidence of PTSD. Prospective studies are obviously difficult to carry out and are therefore unavailable.

A more recent report from Deahl et al. (1994) represents the nearest to a controlled study yet reported; it was conducted in war graves troops, who had dealt with enemy and allied dead during the Gulf war. For operational reasons, some troops were debriefed and others were not. Psychiatric symptoms were assessed nine months after and related to debriefing status and other relevant variables, such as training. Threat to life and history of psychological problems were correlated with post-traumatic morbidity and subsequent relationship problems. There was no evidence that the psychological debriefing had a positive effect on outcome.

Busuttil et al. (1995) incorporated psychological debriefing techniques (critical incident stress debriefing) within a brief group psychotherapy programme for the treatment of post traumatic stress disorder. This study, although it makes use of the psychological debriefing process over a seven day period, in the treatment not prevention of PTSD, represents the valuable expertise of the intervention team who supported the hostages (McCarthy, etc) at RAF. Wroughton (Turnbull, 1994). Their outcome measures demonstrated its effectiveness in ameliorating the impact of the symptoms towards recovery.

Several studies provide a rationale for early intervention and delineate its optimal timing and its target population. The first line of evidence concerns the "pathogenic effects of the secondary stressors" that may follow the trauma itself (Lindy and Grace, 1986; Green, 1987; Baum, Gatchel and Schaeffer, 1983; Figley and Leventman, 1980).
Interventions which reduce secondary stressors (e.g., effects of re-location after a disaster, ambiguous information, relocation of combat veterans) may improve the long term outcome after traumas and disasters.

A second line of evidence supporting early intervention is the discrepancy between the population at risk for developing PTSD and the scope of the established treatment strategies. Solomon et al (1987) found that 16% of 386 combat veterans of the 1982 Lebanon War who had not sought treatment for the psychological effects of the war, suffered from diagnosable PTSD one year later. Similarly, despite the low number of identified stress casualties during the Vietnam War (Bourne, 1969; Ingraham and Manning, 1986) a substantial number of veterans developed PTSD in the succeeding years (Kulka et al, 1989). Early interventions which focuses on identified patients will address only part of the population at risk (Solomon et al, 1989).

Primary prevention strategies directed at the entire population at risk have been reported (Griffin, 1987; Raphael, 1986; Birenbaum, Copolon and Scharff, 1976; Cohen, 1976; Cohen and Ahear, 1980). Group debriefing has been particularly recommended for organized groups after trauma exposure (Dunning and Silva, 1980; Mitchell, 1981; Jones, 1985; Jones, 1985; Griffin, 1987; Bergman and Queen, 1986; Raphael, 1986). Immediate and long term beneficial effects of debriefing have been suggested, but with very little systematic evidence (Bloom, 1985).

Given that debriefing is perceived so positively, it may be meeting the needs of others not actually affected by the trauma in question: the need to overcome helplessness and guilt: to make restitution: to experience and master vicariously the traumatic encounter with death: the symbolic need for management to assist those that suffer and to show concern. Debriefing may not work as it is currently implemented because it does not take account of subjects' levels of arousal, defensive styles and coping processes, cognitive impairments associated with acute trauma, dissociative phenomena relating to the traumatic experience, and other pathogenic influences such as past trauma, past psychological morbidity, and current and recent life stressors (Koopman, Classen and Spiegel, 1994).
Debriefing has typically been used as though all the trauma comprised a single element. Loss, separation and dislocation are separate stressors that probably need different interventions and timing. Only one debriefing format reflects this concept, but there have been no studies of its effectiveness (Armstrong 1991).

**Caveat**

The possibility that debriefing may increase problems warrants further consideration. Perhaps the debriefing process focuses on the trauma to the exclusion of other important stressors that may be of greater relevance, such as organisation stress or personal life stressors. Debriefing may not be appropriate to timing or format for some people (Turner, Thompson and Rosser, 1993) and may even lead to secondary traumatisation (Symonds, 1980). It may also medicalise normal responses to stress: reactive processes are often described as "symptoms" in the educational aspects of debriefing. A complex aspects related to health and safety in the workplace, litigation, and other factors may complicate the process and outcome.

**Summary**

Debriefing meets some real and symbolic needs. But it is costly and possibly ineffective for many people, and its provision may negate the need for more individualised and longer term programmes focusing on recovery and rehabilitation for those who have been traumatised.

Future studies on debriefing should examine the following areas:

1. the nature of the trauma;
2. the goals of the intervention:
3. the techniques used in the debriefing:
4. the inferred mechanism of action of the intervention.

The goals of psychological debriefing are summarised as:

For the organisation: to-

* improve communications between group members
* enhance group cohesion
* improve readiness for future exposures
* symbolize and attribute meaning to the disaster event
The future goals for individuals: to-
* decrease overwhelming emotions
* decrease cognitive disorganisation
* enhance self-efficacy
* facilitate emotional disclosure and return of pleasure
* disengage from the disaster role
* initiate the grieving process
* legitimize feelings and emotions
* correct inaccurate information. (Shalev 1994)

Conclusions
The staff working in high security with mentally disordered offenders are an "at risk" group for heightened stress levels associated with nursing this particular population. One could argue that the staff normalise an abnormal environment. Their exposure to traumatic events is high and therefore the prevalence rates for stress related disorders is higher than the population average. Prevalence rates are unmeasured and should be an immediate research target for the management. The present author is currently engaged, on behalf of management and the staff associations of Broadmoor Hospital, to establish such rates.

It could be argued that many of the events in which they are primary or secondary victims conform to the types of events described as stressors in DSM IV. While the accumulation of less serious assaults and threats inflates stress levels, perhaps no single event would conform strictly to the criteria for a PTSD provoking event but would be associated with prolonged duress stress syndrome (PDS).

However, given the nature of their work and constant exposure to the potential risk of violence, their ability to respond to traumatic events, which reach the criterion level of type and severity for PTSD, will be negatively affected, given that the type and severity of the traumatic event will be modulated in its effect on the victim by the mediating variables identified through research eg social support. Research supports the effectiveness of early intervention after a traumatic incident.
There is much supportive evidence arguing that psychological debriefing is an effective intervention reducing, for some, the likelihood of the development of PTSD, PDSD or acute stress disorder. One is mindful of the caveat that in some circumstances, debriefing could be counter productive.

A proven technique can be misused by untrained debriefers whose enthusiasm could exacerbate victims’ pathology rather than ameliorate it. On the strength of this advice, it behoves CISD teams to assess the situation carefully prior to intervening. Its face validity is very high and its goals appear to be strongly supported by the behavioural/cognitive/information processing models explaining the PTSD process.

Given that the Mitchell model of CISD adopted by the Broadmoor team lends itself more readily to cognitive therapeutic styles of psychological intervention than the Raphael model which is more psychodynamic in orientation, it matches the dominant psychological therapeutic model used by clinicians in the hospital. Therefore more salient supervision will be available to support the process and is likely to gain the compliance and cooperation of the staff, and is more amenable to short term training programmes. Cognitive models allow for greater control of the agenda than psychodynamic procedures thus allowing the debriefing team to be sensitive to the immediate demands of the staff and reduce the likelihood of the negative effects which debriefing could have on the traumatised, as identified by Turner et al (1993), such as the appropriateness of the timing of the debriefing session and the focus of the group on additional stressors which may only be indirectly related to the critical incident.

This critical review of debriefing procedures supports the choice of the Mitchell model as the most adaptable one as a preventative measure for PDSD and PTSD. However, its effectiveness has yet to be proven and requires follow up study of those staff who have been supported by the intervention techniques following exposure to singular traumatic incidents. It will be difficult to measure the stressful effects of prolonged duress which has yet to be quantified in any study. Unlike a single traumatic event which is easily identified, staff support services will have difficulty in recognising cut-off points in prolonged duress to know at which precise point to intervene.
References


Green, BL. (1982) Assessing levels of psychosocial impairment following disaster: consideration of actual and methodological dimensions. *Journal of Nervous and Mental Disease,* 17(9), 544-552.


SECTION TWO: ACADEMIC REVIEWS

REVIEW THREE

Critical evaluation of the psychological sources of dramatherapy and its clinical applications in high security psychiatric provision

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A critical review of the psychological sources of dramatherapy and its clinical applications in high security psychiatric provision.

Introduction

In prisons and mental hospitals where some inmates may constantly sustain a heroic edifice of withdrawal, uncooperativeness, insolence and combativeness, the same inmates may be quite ready to engage in theatricals in which they enact excellent portraits of civil, sane, and compliant characters. But this very remarkable turnabout is understandable too. Since the stages circumstances of the portrayed characters are not the inmates's real ones, he has no need to exhibit distance from them. (Goffman 1961, p. 132.)

The aims of this paper are to critically review the psychological sources on which dramatherapy is based, to decide if it can justifiably be regarded as a genuine form of psychotherapy in its clinical applications with mentally disordered offenders. They present a most formidable treatment challenge in conditions of maximum security. They comprise a diverse group whose mental disorder must be recognised as sufficiently disabling to justify substantially different treatment from that of other offenders (Blackburn 1993). While their mental condition represents the extremes of psychiatric disablement, and their behaviour poses a serious threat to public safety, their care and treatment require the combined skills of multidisciplinary mental health teams who share the hope of their rehabilitation in the community.

High security services

The National Health Services Act 1977 places a duty on the Secretary of State "to provide and maintain services....for persons subject to detention under the Mental Health Act (1983) who in his opinion require treatment under conditions of special security on account of their dangerous, violent or other criminal propensities" (section 4). In England and Wales the special hospitals, which form part of the NHS, provide an in-patient service under conditions of maximum security for mentally disordered offenders who are so dangerous that they would cause grave concern if managed elsewhere (Snowden 1995).
Such high security services have been broadly defined by the Reed Committee (Final Summary Report, 1992, page 117) as "a range of therapeutic services as ordinary psychiatric hospitals but in a level of utmost security to enable the treatment of patients detained under the Mental Health Act and who, in the opinion of the Secretary of State, require this because of their dangerousness, violent or criminal propensities. The regimes of care and observation are such that can only be justified when a high level of security is required and a lesser degree of security would not provide a reasonable safeguard to the public."

Interdisciplinary collaboration

Facing the interactive complexities of mental disorder, categorised under the Mental Health Act (1983) Act as mental illness, psychopathic disorder and mental impairment, all forms of psychotropic medication regimes in combination with the range of psychotherapies are used to alleviate patients' distress. The process of psychotherapy requires the patient to become more open to feared or unwanted feelings. This process is impossible if feelings are completely inaccessible, or if they are overwhelming. Insightful use of medication can facilitate this process and is absolutely necessary with many mentally ill patients (Aveline 1988). A diversity of treatment approaches are demanded to meet the needs of a heterogeneous population of patients requiring high security services. The difficulties posed by attempting any form of psychotherapy with the mentally ill cannot be underestimated (Holmes, 1991) Among the most recently introduced therapy form with this cohort of highly disturbed patients is dramatherapy (Jennings, McGinley and Orr, in press). Is it a genuine form of psychotherapy and is it an effective intervention contributing to the measurable progress of patients?

Dramatherapy

Dramatherapy as a discipline was in its formative stages of development only twelve years ago according to Landy (1983), one of its principal exponents. Like the other creative arts therapies (art, music and dance), it is the application of a creative medium to psychotherapy (Johnston 1982). Art generally provides a concrete rather than a verbal medium through which a person can achieve both conscious and unconscious expression, and can be used as a valuable agent for therapeutic change (Dalley 1984).
The British Association adopted the following definition for use in its literature and policies: *Dramatherapy is the intentional, planned use of the healing aspects of drama in the therapeutic process.* (BADth 1991: code of practice.) Meldrum (1994, page 17) thought that this definition begged the question, *what are the healing aspects of drama?* Appreciating the potential value of drama as a medium for therapeutic change, dramatherapy takes the form of theatre art and makes it available to clients and patients either to maintain health, or to work with disorder and problems. It is the intentional and systematic use of drama/theatre processes to achieve psychological growth and change. Jennings (1992. p. 229) defined dramatherapy as *"the specific application of theatre structures and drama processes with a declared intention that is therapy"*. While the tools are derived from theatre, the goals are rooted in psychotherapy.

Jenkyns and Barham (1991, p. 3), acknowledging the difficulty of defining the concept of dramatherapy, quoted Read Johnson's (1982) formulation as the one most frequently used by professionals: *Dramatherapy, like the other creative arts therapies (art, music and dance), is the application of a creative medium to psychotherapy. Specifically, dramatherapy refers to those activities in which there is an established therapeutic understanding between client and therapist and where the therapeutic goals are primary and not incidental to the ongoing activity."

In 1990, dramatherapists within the National Health Service joined arts therapists and music therapists as members of professions recognised by the Whitley Council, under the Professional and Technical "A" Committee. The Whitley Council agreed the following definition of what a dramatherapist is: *A person who is responsible for organising appropriate programmes of drama activities of a therapeutic application with patients, individually or in groups, and possesses a degree or qualification equivalent for entry to an accepted postgraduate training course and also a qualification in dramatherapy following the completion of an accepted course at a recognised institution for higher or further education.* (DHSS PAM/[PTA] 2/89 App. B, quoted in Jenkins and Barham 1991)
To appreciate its potential with mentally disordered offender patients, it is necessary,

1. to understand its historical development and its major concepts,
2. to identify its psychological conceptual derivatives,
3. to describe its clinical applications, treatment goals and paradigms,
4. to evaluate its therapeutic effectiveness
5. to discuss its use with mentally disordered patients.

**Historical development**

Dramatherapy would appear to conform to the definition of psychotherapy offered by Holmes and Lindley (1991, p. 7) who defined psychotherapy as "...a form of treatment based on the systematic use of a relationship between the therapist and patient - as opposed to pharmacological or social methods - to produce changes in cognition, feelings and behaviour". Is the nature of the relationship between the dramatherapist and patient such that it is consciously used in a systematic, planned way to effect change? Although dramatherapy can be practised within the theoretical framework of almost any existing school of psychotherapy, it has its own unique heritage. Dramatherapy is not new. It can be seen in ancient forms in healing rituals and theatre performances in many civilisations (Emunah 1994). It has re-emerged during the past thirty years as a contemporary therapeutic practice with formal training and accreditation. In 1977, Dr. Sue Jennings, together with colleagues from the Dramatherapy Centre, formed the Association for Dramatherapists, now the British Association for Dramatherapists. It accredits dramatherapy courses and monitors their content and standards. In the USA, dramatherapy was formally accepted as a new profession, with the foundation of the National Association for Drama Therapy in 1979. In the USA, drama therapy is referred to as two words. In the UK, dramatherapy as one word is the normal term.

**Major Concepts**

According to Emunah (1994), there are five conceptual sources to dramatherapy. These are

* Theatre
* Dramatic ritual
* Psychodrama
* Role play
* Dramatic play
**Theatre**

Two seemingly discrepant approaches from the Russian and German theatre have important application in dramatherapy. For the Russian theatre director, Constantin Stanislavski (1924, 1936), acting was an emotional and psychological process. The actor was to find and expose the inner truth of the character by reaching for a part of himself that identified with the character. On the other hand, the German director Bertolt Brecht's aims were social rather than psychological and he discouraged his actors and the audience from emotionally identifying with the characters. Emotional distancing was required to help people think objectively instead of responding subjectively, and objective thinking was necessary to activate social and political change.

**Dramatic ritual**

Although dramatherapy is considered to be a new profession, anthropological practices are regarded as important sources. The origins of theatre itself are in early shamanic and religious rites. These rituals exemplified the relationship between drama and healing, involved the wearing of masks and costumes, the impersonation of human figures, animals and deities, and the enactment of stories (Schechner 1973). Bates (1987, p. 22) referred to shamans as *primitive actors* who perceived and embodied the *illnesses* of their community in a trance state, *who healed in a manner very like highly intensive dramatherapy*. Healing rituals have the capacity to express and embody the emotional, the mental and the spiritual, the personal and the universal, the secular and the sacred.

Rituals serve as a container for the powerful and often untranslatable feelings, images and unconscious associations that emerge during the therapeutic process. The circle, which is used in most ancient rituals, is also the most common formation for dramatic ritual in dramatherapy, as well as in psychotherapy groups in general (Jennings 1987). The circle is regarded as the powerful religious, spiritual and psychological symbol, reflecting the psyche (Jung 1964). In dramatherapy, the dramatic rituals, beginning and ending in a circle, celebrate the cycles and stages within the group process. These parallels with ancient dramatic rituals have their limitations, given the vast differences in social context.
Psychodrama

The most widely known utilization of theatre for therapeutic purposes was psychodrama (Moreno, 1945; Cole, 1975; Johnston, 1982). Its founder, Jacob L Moreno (1989-1974), not only brought to psychotherapy the use of acting and action, but developed a formulation for group psychotherapy, and a method for assessing group dynamics called sociometry. Psychodrama stimulated an awareness of the significance of spontaneity and creativity, advanced the understanding of role theory, and changed the view of therapeutic relationships, via his transformation of roles from therapist-patient to that of director-protagonist. It is regarded as a form of psychotherapy in which a person enacts personal issues rather than simply talking about them. The enactment of life dramas implies a kind of reliving, through which therapist and patient experience emotional catharsis. Psychodrama scenes tend to be deeply emotional, dealing with painful memories, childhood traumas, unresolved conflicts and critical life dilemmas.

Although dramatherapy cannot and need not be fully separated from, and conceptualized outside psychodrama, significant distinctions do exist. Psychodrama focuses on one person in the group at a time, the central protagonist, who re-enacts real life scenes. Though the group is involved as audience or actors in the protagonist's drama, the therapy is individually oriented. Dramatherapy is more group oriented; the focus is on the group process and group interaction, rather than on a single person. The scenes in dramatherapy are not necessarily directly related to people's real life experiences.

Sociodrama

Moreno also originated sociodrama, an intermediary form in which the focus of the enactments is on issues pertaining to the group as a whole, rather than an individual's personal situation. It is often used to help communities tackle social problems. Participants assume social roles in hypothetical situations related to the issue they share, but do not play roles specific to their own personal lives. Where sociodrama revolves round collective roles, psychodrama revolves around private components which are unique to the individual (Sternberg & Garcia 1989).
Role Play

At the core of sociodrama, psychodrama and dramatherapy, lie role play and role reversal. These are essential processes which were formally derived from Moreno's work. Experimentation with roles is fundamental to the process of dramatherapy. Moreno (1946, 1959) saw people not only as role takers, as social psychologist GH. Mead had proposed (1934), but as role players, a distinction underscored by Landy (1990). Landy regarded Mead's conception as primarily a cognitive one: *I become self to the extent that I can internalize the roles of others and see myself as they have seen me.* On the other hand, he regarded Moreno's conception as a more active and dramatic one: *I become the person to the extent that I can play out the many roles of myself and also play out the roles of others through the process of role reversal.* (Landy, 1990, p. 224).

Landy (1990, p. 230) argued that the concept of self is mythical and that the roles themselves are the *containers of all the thoughts and feelings we have about ourselves and others in our social and imaginary worlds.* It was in the doing and seeing and accepting and integrating of all the roles, the "me" parts, that the person emerges intact. For Landy, role and story are the two bare essentials to the dramatherapy process. Role is the container of those qualities of the individual that need to be enacted in dramatherapy. Story is the verbal or gestural text, most often improvised, that expresses the role, naming the container. Landy (1993, p. 44) defines personality in terms of roles when he wrote that a *role system contained the substance of one's identity - all the pieces that, once assembled, represented a personality.* His underlying assumption was that roles can be modified at any stage of development - whether as a child, adolescent, adult, or elder - by working through the paradigm of the primary roles that are genetically given, the secondary roles that are socially taken, and the tertiary roles that are behaviourally played out.
Dramatic play

Erikson (1950) regarded children's play as their way of playing out feelings and emotions. *To play it out is the most natural self-healing measure childhood affords* (p. 222). Children use drama as therapy spontaneously, with no outside direction or preimposed structure. Dramatic play is the child's method of:

* symbolically expressing and resolving internal conflict
* assimilating reality
* achieving a sense of mastery and control
* releasing pent-up emotions
* learning to control potentially destructive impulses through fantasy
* expressing unaccepted parts of the self
* exploring problems and discovering solutions
* practising for real life events; expressing hopes and wishes
* experimenting with new roles and situations
* developing a sense of identity (Courtney 1968).

These functions, fundamental to the lives of children, are regarded as relevant to people of all ages. Dramatic play is a primary component of general play, distinguished by its basis in impersonation and identification (Courtney 1968) and projection (Landy 1986). Play therapy and dramatic therapy are closely connected, although in dramatherapy the focus and emphasis is on dramatic play. Courtney (1964, 1967, 1968) describes dramatic play as a stage in ego development that follows acting-out behaviour and eventually leads to sublimation. He sees it as the link between instinctual gratification and mature thought.

Psychological theories

Dramatherapy is eclectically informed by many models, theories and concepts from psychology and greatly influence by three major schools: psychoanalysis and derivatives, cognitive behaviourism and humanistic psychology. The incorporation of certain key principles and values of each, in conjunction with a synthesis of the five roots of dramatherapy (dramatic play, theatre, role play, psychodrama and ritual) comprise what Emunah (1994) referred to as *an integrative framework for drama therapy* (p. 24). To a lesser extent, other theoretical psychological models such as Jungian analytic therapy, gestalt therapy, and systemic therapy have been incorporated.
into the more specialised approaches of individual therapists eg., the developmental dramatherapy of Johnston 1982, 1986), the psychoanalytic dramatherapy of Irwin (1983), or the emphasis given to projective techniques by Landy (1986).

**Psychoanalysis**

The central features of psychoanalysis and psychodynamic psychotherapy, a derivative of classical psychoanalysis, are integrated with a humanistic approach to dramatherapy. Attention is given

* to the early mother-child interaction and issues of self esteem (Kohut (1971)
* to the processes of separation and individuation in infancy and early childhood (Mahler, 1975)
* to social and environmental factors on development (Horney 1939)
* to the reality of child abuse and the need to safely relive primal trauma (Miller 1986).

The emotional exploration of the past and the cultivation of insight and ego strength are essential components of long term dramatherapy treatment. Transference is recognised and heeded, though not accentuated as in psychoanalytic theory. It should be remembered that Freud concluded that schizophrenia was not amenable to psychoanalytical treatment, because the patient was unable to form a working transference with the therapist (Freud 1911).

Winnicott’s (1965) concepts of a facilitating *environment* and *learning to play* find echoes in the containment concept which is considered to be essential for appropriate use of dramatherapy techniques in clinical settings. Containment was described by Jackson (1991) as accepting and digesting the patient's projections in the service of understanding him, helping him recognise, tolerate, and ultimately integrate, impulses and desires that he has never been able to acknowledge. It was the process whereby the helper may accept the patient's attempts to recruit the helper in playing a part in his own inner drama.

**Group analysis**

Group-analytic psychotherapy is a method of group psychotherapy initiated by Foulkes in 1940 in private psychiatric practice and out-patients clinics. It is not psychoanalysis of individuals in a group, nor is it the psychological treatment of a group by a psychoanalyst.
It is a form of psychotherapy by the group, of the group, without clearly differentiating its conductor (Foulkes 1986). The conductor is the responsible administrator of the group, a task he/she should fulfill in a flexible, dynamic, creative way; his/her personality and method are the most important individual factors in this procedure. Dramatherapists perceive their role as facilitators and equate it with the conductor role in group analysis.

**Behaviourism**

Links with behaviourism have been claimed by dramatherapists insofar as dramatherapy is action oriented, aiming towards not only insight and emotional maturation, but also practical change. Emunah (1994) and Fontana and Valente (1989) regard classical behaviourism as contradictory, both to psychoanalytic thinking and dramatherapy in its rejection of underlying unconscious conflicts, and its minimization of subjective experience. Nevertheless, they claim that it has influenced the fundamental practice of dramatherapy in its emphasis on visible change, the attention given to the breaking of maladaptive patterns, and the acquisition of new coping skills. Communication skills, interpersonal dynamics, and habitual responses are all actively examined in the dramatherapy session. Change is not only envisioned but actively practised. Behaviour therapy with its tradition of incorporating role play of simulated situations in treatment, in an attempt to offer the client a chance to discover and rehearse alternative courses of action, is an important component of the integrative framework of dramatherapy. However, Meldrum (1994, p.197) maintained that *dramatherapy does not need to prostrate herself to such an uncomfortable bedfellow as behaviourism, no matter how persuasive he appears to be.* In referring to behaviourism as a seminal source of dramatherapy, exponents fail to distinguish the varying theoretical approaches which exist within the broad school of behaviourism eg., Watson's (1930) rejection of introspection; Skinner's (1938, 1971) radical behaviourism and notion of experimental analysis of behaviour; the refinements of Kanfer and Schefft's self management therapy (1987); the deconditioning techniques of Wolpe (1958); multimodal behaviour therapy of Lazarus (1973, 1987); the behaviour modification approaches of Marks (1976); therapy outcome techniques of Rachman (1971); the self verbalization techniques of Michenbaum (1987) and the social learning adaptations of Bandura (1975). Dramatherapy's links with behaviourism appear simplistic.
Cognitive therapy
Cognitive therapy, maintaining that how one thinks largely determines how one feels and behaves (Beck 1976), is related to behaviour therapy in its orientation towards the present and towards problem solving. However, cognitive therapy admits that behaviour is influenced by beliefs outside one's conscious awareness (Corsini & Wedding 1989).

The combined cognitive-behavioural approach to therapy is relevant to the integrative framework of dramatherapy in its examination of the client's interpretations of events and in its active attempts to modify and re-construct perceptions that limit the client's capacity for well-being and self-actualization.

Humanistic psychology
Humanistic psychology emerged in the late 1950s as an alternative to psychoanalysis and behaviourism and sometimes termed the third force. The theories of Maslow (1968, 1971), Rogers (1951, 1961), Buhler (1962), May (1961, 1975), Moustakas (1967) greatly influence many dramatherapists who regard these psychologists as basing their work on models of health rather than pathology. They present human nature as intrinsically good and healthy. Maslow (1968), for example, describes two innate forces: (1) fear of the unknown leading to a clinging to the familiar, and (2) the desire to grow and change. He wrote that we both discover and uncover ourselves and also decide on what we shall be. The desire for growth emerges out of a sense of safety, just as healthy infants take risks when they sense the reassuring presence of their parents. They dare to move forward when there is a secure base from which to operate. Humanistic psychologists hypothesize that if the right elements are present (in early childhood or in the therapeutic situation), the growth impulse will be manifested. The concepts of self-actualization (Maslow 1968), and what Rogers (1961) calls fully functioning, are close to being synonymous with creativity (Emunah 1994). The qualities frequently evoked in the dramatherapy process by dramatherapists appear, to them, to correspond to those that describe the creative, self-actualizing individual.

The ideas of Kelly (1959), coupled with some of the philosophical underpinnings of classical crisis intervention (Ewing 1978), formed the kernel of Holloway's (in press) practice in a day treatment unit.
Kelly's central thesis is that as individuals, we are engaged in a constant process of actively attempting to make sense of our experience and test out our own hypotheses about them. Holloway applied this model to patients who are struggling with a chaotic, defeating and fatalistic sense of their experience. He regarded Kelly's concentration on the fluid potential of our interpretations as of great value to them, as well as being ultimately re-assuring.

The work of Goffman (1959, 1961, 1967), Mangham (1978), and McCall and Simmons (1978) are relevant to the humanistic approach to dramatherapy, in that they challenge the outlook of many role theorists that people conform to social situations in prescribed, determined, and basically immutable ways. The humanistic notion that people have an active part to play in shaping themselves is taken into account. In dramatherapy, participants make use of improvisational drama not only to understand themselves better, but to explore and practice new roles, behaviours and responses.

Empathy, central to Roger's (1961) humanistic, client-centred approach to therapy, is a primary aspect of the integrative framework for dramatherapy. This is in contrast to the neutrality and therapeutic distancing characteristic of the client-therapist relationship in classical psychoanalysis. The gap between psychoanalysis and humanistic psychology is bridged by contemporary psychoanalysts such as Kohut who insists that empathy and respect for the client's subjective experience, and corrective emotional experience are crucial to the therapeutic process (Kohut 1984).

Additional psychological sources
The theories of Piaget (1962) and Erikson (1965) offer ideas about the cognitive and emotional stages of human development and have many connections with the processes explored in a developmental dramatherapy group. According to Cattenach (1994), Piaget's model, with its emphasis on the symbolic nature of cognitive development, is of use to the dramatherapist who works in the patients' symbolic processes through metaphor and fiction. While Erikson's model, with its emphasis on conflict within the emotional stages of development, mimics the very nature of dramatic conflict and those acts of hubris which lead to loss and despair: the very life of the theatre (p. 33).
There are other action-based methods which make use of dramatic techniques, such as Gestalt Therapy (Perls 1973) and Transactional Analysis (Berne 1961). There is an intrinsic difference between a therapy which makes use of action methods and one which acknowledges the artistry in the therapeutic process. Dramatherapists would acknowledge the creativity and influence that all these forms have in therapeutic practice, but would suggest that there are strong differences as well as similarities. They all attempt to relieve some of the human distress that affects large numbers of the population. In dramatherapy, the dramatic art is the therapeutic form and content. In the feedback time at the end of a group, as much time is spent on reflection on the drama itself - whether it worked as a piece of dramatic art - as on the feelings of the participants themselves.

**Clinical applications of dramatherapy: concepts**

The clinical applications derived from the conceptual roots of dramatherapy are numerous. Those patients who are detached from emotions associated with past experiences and who tend to intellectualise rather than feel, or who have difficulty identifying or empathising with others, can probably benefit from the Stanislavskian approach to acting embodied in the dramatherapy process. While those patients who are easily overwhelmed by emotion, or who have trouble viewing personal situations with the objectivity that is often needed to make clear decisions or changes, would benefit more from the Brechtian approach. The Stanislavskian approach emphasizes emotional expression and release, whereas the Brechtian approach emphasises emotional containment and the development of the observing self, both of which are primary therapeutic goals in dramatherapy. An example of the use of the latter approach - emotional containment - is with acting-out adolescents. The distinction between acting out and acting is a critical one, and has been clearly articulated by psychodramatist and psychiatrist Adam Blatner (1988) in his book *Acting In*. He regards acting out as a psychological defense mechanism by which the individual discharges his internal impulses through symbolic or actual enactment. Since the rational for this mechanism occurs largely outside of the unconsciousness, the individual experiences no sense of mastery or growth or self understanding through his behaviour. He maintains that, if the drive towards action could be channelled, the person might be able to make better use of his feelings. In dramatherapy the experience of acting diminishes the need of the client at any age to act out (Emunah 1994).
The clinical application of the concept of distancing appears crucial to the understanding of dramatherapy with emotionally damaged patients. The term was used by Goffman and Brecht and has been defined by Scheff (1981) as the process of helping a client find a balanced psychic position between an overdistanced state of repression and an underdistanced state of emotional flooding, so that catharsis may occur, thus helping the individual restore psychic equilibrium and move towards an understanding of his therapeutic dilemma. Catharsis occurs when the individual, in enacting a therapeutic drama, re-experiences emotions without becoming overwhelmed by them. While Scheff has researched the effects of distancing in psychotherapy, the concept has still to be researched in dramatherapy (Landy 1984).

The work of Johnston (1981, 1982, 1986, 1991) one of the most prolific researchers in the field of dramatherapy, is clearly linked to dramatic play and based on a developmental psychological model. He has developed a dramatherapeutic process called transformations, in which the roles and scenes are constantly transformed and reshaped according to the patient's ongoing stream of consciousness and internal imagery (Johnston, 1991).

The work of E Irwin (1975, 1981, 1983) is also very much influenced by dramatic play, although her model is psychoanalytic rather than developmental. Drawing from play therapy as exemplified by Anna Freud (1928), Melanie Klein (1932) and Margaret Lowenfeld (1935), Irwin emphasises projective devices such as puppetry, storytelling and sandplay in the diagnosis and treatment of clients. In many respects her model is closer to Landy's distancing approach than to Johnston's direct improvisation approach.

The dramatic play of Johnston is typically personal play while the Irwin and Landy emphasised projective play. Projective play provides a greater degree of distancing, which clients who lack discernible boundaries and emotional control or who are dealing with an issue that is highly threatening often require.
Aims in treatment

Jennings (1990) describes four basic treatment aims common to most forms of dramatherapy:

1) to encourage the expression of latent creativity, where the emphasis is on the healthy side of the patient and enables its re-affirmation:

2) to facilitate the learning process involved in behaviour change by taking on tasks (actions):

3) to generate psychotherapeutic intra-psychic processes and phenomena (transferences etc) which underpin group and individual practice:

4) to harness the human capacity to transform experiences through the creative struggle between inner and outer worlds inherent in dramatic performance.

Objectives of treatment

The expression and containment of emotion

Drama offers an outlet for the expression of intense and diverse emotions. Feared emotions can often be expressed within a safe atmosphere in the dramatic mode. This is partly because there is no real life consequence to the expression but also because the drama affords a distance or separation from what is being enacted.

"The explicit or implicit assumption that dramatherapy enables the creation of dramatic reality and therefore dramatic distancing. Therefore everyone will work with greater or lesser dramatic distance through the medium of dramatic enactment or role-play, which calls upon the dramatic imagination. This engages us in the outer space of the theatre or dramatherapy room, and the inner space of the imagined world, together with the corporeal space of the inner and outer body." (Jennings 1994, p.134).

Developing the observing self

It emphasises the part of the individual that can witness and reflect on the rest. It aims to create the ability to overview one's behaviour or past experiences rationally even in the face of emotional turmoil while maintaining realistic and attainable expectations.
Role repertoire

People can become limited in real life roles and become imprisoned by their own learned patterns of responding and rigid understanding of the beliefs and expectations of significant others. In dramatherapy, the possibilities are regarded as limitless wherein one has permission to experiment with identity, and discover and express dormant aspects of themselves. An expanded role repertoire equips them to deal with a broader range of life situations.

The modification and expansion of self image

One's self image is viewed as determining the repertoire of roles, and the repertoire of roles determines self image. Many clients have had bad parental figures in their childhood who reacted to them as though they were bad and worthless. Tragically, these clients may develop a self image that matched the image others projected onto them. The expansion and enhancement of self image will bring an increased sense of self worth.

The development of interpersonal skills

The final goal is the facilitation of social interaction and the development of interpersonal skills. The close relationships and the trust developed in the group become a microcosm for what is possible in real life, reducing the deep sense of alienation with which so many people enter treatment. The use of drama in, and as, therapy leads to a process that emphasises relationship, an aspect of life that warrants the deepest level of examination and understanding.

These principle therapeutic goals are evidenced throughout each stage of a dramatherapy treatment series. Could the striking behavioural changes become integrated with, or remain discrepant to, the person's off stage self? Given the dramatic changes in a short period of time, often within a single session, what stages of progression would be involved in long term treatment? What kinds of interventions would be possible within the dramatic mode that would deepen the therapeutic experience?

Clinical applications of dramatherapy: practice

Although dramatherapy has been used in forensic and psychiatric settings, there are few published reports which describe its practice. Langley (1983) addressed this issue in her book
Dramatherapy and Psychiatry. A publication is imminent of an edited work on clinical applications titled *Dramatherapy: Clinical Studies* (Mitchell, in press).

Langley discussed the use of dramatherapy in psychiatric settings. Writing for a wide audience, she refers to three main categories of mental disability: psychosis, neurosis and organic brain disorders. In applying dramatherapy with psychotic patients she argued against its use with schizophrenia of recent onset where patients were showing florid symptoms, were withdrawn, confused, depressed or violent. Their behaviour could range from extreme passivity to bizarre and antisocial behaviour. She claims that dramatherapy, by intensifying the atmosphere (high expressed emotion) could exacerbate their condition. She also advised against its use with acutely schizophrenic clients, or those who are borderline personality disordered, as it may precipitate a psychotic episode through stress or emotional overload.

However, she has found that dramatherapy could assist the chronic conditions of the schizophrenic experience by assisting patients come to terms with the disability and find ways of relating to others. To assist those patients who have become institutionalized, she also saw a role for dramatherapy in assisting them to discard the patient role, to create new roles and re-create old functional ones. The treatment tasks she envisaged would be to develop trust in the group in a non threatening environment.

She argued that dramatherapy can have successful outcomes with certain types of personality disordered patients. She did not consider it appropriate with the predominantly aggressive type who habitually reacts with violence, who does not work well in groups and who can be very disruptive. However, the predominantly inadequate or passive type who cannot form long lasting relationships, are irresponsible and unable to cope with situations in an adult manner, could benefit from dramatherapy techniques. Her aims of therapy with this group were based on experience from working in a forensic unit of young psychopaths and employed the group dynamic model as described by Bion (1961). She focused on issues of trust, responsibility, discipline and control of impulsive behaviour (Langley 1979). She introduced a note of caution in maintaining realistic expectations of what can be achieved with personality disorders.
Grainger (1990, 1992) also worked with schizophrenic patients (thought disorders), using dramatherapeutic techniques which directly involve the person in playing as if he/she were someone else. These were derived from Kelly's (1959) personal construct psychology of construing the world in such a way that his/her predictions are validated. Viewing behaviour as if it were an experiment, is one of Kelly's unique contributions to our understanding of the person (Fransella 1990). Sessions involved putting oneself in the place of others leading to the use of role-reversal techniques to explore the experience of the other person.

"Existential conclusions about identity which others take for granted as part of the given structure of reality are, for them (schizophrenics), perpetually under review, so that there is no stable or reliable basis, background, or framework, for the natural process of ordering and re-ordering conclusions about what is actually happening at any given time " (Grainger 1992, p67).

Grainger maintained that cognitive clarity is communicable through dramatic experience and that dramatherapy establishes or validates a certain way of thinking about personal reality which is essential for relationships and which is not salient in schizoid people who are suffering from thought disorder.

Grainger (1990) also applied dramatherapeutic techniques with depressed patients rationalizing that "..in the case of depression, someone who was sure about his or her relationship with other people is sure no longer, and hovers between hope and despair, striving to recapture the sense of belonging that they enjoyed before their image of themselves was shattered." (p.70).

The use of improvised role play was used to differentiate paranoid from non-paranoid schizophrenic (Johnston and Quinlan 1980) and assisted schizophrenic patients in seeing and experiencing a whole set of complex interrelationships (Johnston 1981).

Schattner and Courtney (1981) have reported on the use of acting therapy as a way of humanizing severely disturbed offenders. Working in closed forensic psychiatric unit as a dramatherapist, Meldrum (1994), influenced by the work of Cox(1986), a psychotherapist working at Broadmoor Hospital, developed a measure called the level of disclosure scale which addressed issues related to emotional state, level of involvement, emotional/affective disclosure and appearance.
Clarkson (1993) applied dramatherapy models with people with learning disabilities by making use of the creative and therapeutic constructs in regressive elements in play, as well as providing developmentally needed reparative experiences through a re-parenting element in the client-therapist relationship.

Jones (1993) has worked with autistic adults as part of a wide-ranging theoretical study into the acquisition of meaning in dramatherapy, from the point of view of the client as an active witness. It is interesting to note that he worked jointly with a psychologist. The therapists used puppets as a projective technique, in the hope that the clients would use dramatic distance by being both separate yet identified with their puppet representations, so that personal interaction, which they found difficult in real life, might be possible in dramatherapy.

Dramatherapy: Clinical studies (Mitchell, in press) is a collection of studies by dramatherapists working within clinical settings and must be considered the most up to date account of its clinical applications. The present author was sent a draft copy by the publishers and the following references have been extracted which are considered relevant to the treatment of the mentally disordered.

Dramatherapy and personality disorders
Appolinari (chapter 1) describes dramatherapeutic techniques with clients who have suffered from sexual abuse but who are currently labelled as suffering from a personality disorder. As the majority of patients on his ward with personality disorders were female, he did not think that it was appropriate for a male facilitator to work with a female group. Instead he accepted the referral of an individual female patient and claims that as a result of their work together she can contain her feelings more easily.

Dramatherapy and learning disabilities
James (chapter 2) demonstrates the use of dramatherapy with people with learning difficulties, referring to a large population of individuals who have a range of special needs. Among these conditions are Down's syndrome, autism and Asperger's syndrome.
She describes this client group as having suffered many psychological and emotional consequences from potentially de-humanising labels and alienating institutional life. She makes creative and therapeutic use of the regressive elements in play and drama as well as providing developmentally needed and reparative experiences through a re-parenting element in the client-therapist relationship (Clarkson 1993). She recognises body awareness as the "ground of our being" and places it at the centre of her work. She utilises gestalt theory and philosophy in which change was an inescapable product of contact (Polster and Polster 1973). Working with a client group who can sometimes suffer from profound and inherent problems in the area of communication and relationships, she sees her role as a therapist as facilitating the process of overcoming these difficulties by providing the necessary resources to enhance interpersonal contact.

**Dramatherapy and psychiatric out-patients**

Fox (chapter 3), using dramatherapy with psychiatric out-patient support groups, emphasises the need for dramatherapists to work within a declared model as it provides safe parameters for clinical work. Working with a community mental health team caring for acute in-patient in a day hospital, she uses a developmental model and the metaphor of a map as her paradigm.

**Individual dramatherapy**

Mitchell (chapter 5) reviews individual dramatherapy claiming that such a format, although contrary to the group norm of dramatherapy practice, would be indicated as the treatment choice for those clients who are too damaged to be exposed to the rough and tumble of group dynamics or find disclosing problems in a group overwhelming. Clients who have been sexually, physically or emotionally abused, often have an issue with trust and confidentiality: a group experience may hold for them the potential to be abused again. He points to a very important ethical and legal issue in individual dramatherapy work. Every time a dramatherapist works individually, the risk of accusation against the dramatherapist is heightened more than when working in groups. Therefore necessary precautions should be in place to monitor the process.
Dramatherapy and long term mental health care

Anderson-Warren (chapter 7) used a model described as therapeutic theatre to assist patients who had received long term mental health care and experienced varying degrees of institutionalisation. They represented a range of psychiatric diagnoses and the majority were on antipsychotic medication.

Dramatherapy and acute psychiatry

Holloway (chapter 8) worked within a day unit offering an alternative to hospital admission for patients with acute psychiatric problems. Many had survived recent suicide attempts and recent psychotic breakdowns. He described the functions of the group as:

1. the establishment of peer interaction as people came into the unit
2. a forum for exploring process issues as they arise within the patient group eg., feelings of stuckness
3. a psychotherapeutic modality focusing on common experiences:
4. individual work for people with a turbulent personal history and/or personal difficulties.

He valued the multimodal, multidisciplinary nature of the mental health team's work with patients. For acute patients, the need for containing rituals and "dramatic distance" was paramount for any partial alleviation of their suffering to occur. Once these therapeutic structures were in place, and the security that they offer was recognised by the patients, then the task of tackling problem areas and re-appraising our sense of the world could begin.

Rawlinson (chapter 9) explores the pathological images of depression, panic and anxiety which emerged from work utilising dramatherapy, sandtray therapy and dreams.

Dramatherapy and eating disorders

Dokter (chapter 10) describes her work with clients with eating disorders who have suffered so much as to lead to a level of self-destruction that it dominates, ruins and ultimately destroys their life. Informed by psychiatric diagnostic symptomatology (DSM IV), she demonstrates how dramatherapy can address specific clinical features of the condition. The connection between eating disorders and affective disorders was shown in the acute psychiatric setting within which
she worked. There was a clear need for multidisciplinary working to address the combination of factors associated with the condition including re-feeding, re-establishing eating patterns, cognitive-behavioural input on body perception and distorted thought patterns, and psychodynamic treatment on an individual and group basis. Dramatherapy would aim to address and adjust fixed obsessional thought and behaviour patterns. Dramatherapy techniques can be used in many different ways. The knowledge of dramatherapy equips the client with a new way of relating to the world. The literature concerning dramatherapy work with clients with eating disorders is limited.

There is one further article by Young (1986) who wrote descriptively about in- and out-patient work with eating disorders. A patient, through symbolic representation (a sand picture), revealed the traumatic source of her food avoidance and ritualistic behaviour after being raped. Winn (1994) acknowledged that dramatherapy in such cases is to be regarded as only one facet of the treatment and emphasised the need for multi-focused forms of treatment given the complexity and uniqueness of an individual's pathology.

**Dramatherapy and the treatment of PTSD**

Recent advances in the application of dramatherapy techniques appear to be proving productive with people suffering from post traumatic stress disorder (PTSD) who have become stuck and unable to integrate their experience into the rest of their lives. This in turn may have led to an inability to perform their normal duties properly. When looking at stuckness, Winn (1994) found it helpful to consider the techniques of Van Gennep's (1960) *rites de passage* - the form of life transitional ritual that accompanies us from birth to tomb. These transitions occur in various guises, regardless of culture of creed. Van Gennep identifies three important changes: separation, transition and re-incorporation. Based on this idea, Hellman (1984) argues that therapy itself can be described as a rite de passage. The transition stage is often the stage the client is experiencing when seeking therapy. They feel they are liminal people (Turner 1969) who are described as *betwixt and between positions*, and necessarily in an ambiguous or ambivalent position. This description resembles the criteria for a person diagnosed as borderline personality and therefore could prove a useful medium of therapy for them. Persons who are suffering from PTSD sometimes describe themselves as being in a jungle, a swamp or a dark cave.
Such metaphors, although desperate, are regarded by Winn as a form of creativity as the individual struggles to make sense of his or her life. The purpose of using dramatherapy with PTSD is not to bombard the individual with overwhelming intensity, but to provide him with additional ways to communicate his story through images, symbols, movement or enactment, in addition to words. When working with metaphor the client needs to process it for himself, and analyze what perspective it gives him, not the therapist. Jennings argues that we need to know that it is our own experience of the darkness, the desert, the fear and chaos and wounding, that will enable the patient to make use of his/her own experience (Jennings 1987).

The efficacy of dramatherapy

All forms of psychotherapy take place within the context of interpersonal processes designed to bring about modification of feelings, perceptions, attributions, attitudes and behaviours which have proven to be troublesome, inappropriate or dysfunctional to a person (Bergin and Strupp 1972). The meaning of efficacy of outcome will depend on the model of treatment or intervention on which the therapy is based. Therapeutic methods from different theoretical perspectives may share similar techniques, a phenomenon known as the equivalence paradox (Stiles et al 1986). The apparent equivalence of outcome between therapies has led to Luborsky's (Luborsky et al 1975) celebrated dodo-bird verdict: everybody has won and all must have prizes.

Paul's (1967) idea of a "matrix paradigm" in psychotherapy may still be applicable in clinical applications with the mentally disordered. Paul suggested that for each clinical situation the therapist should ask the question: What treatment, by whom, is most effective for this individual, with that specific problem, and under which set of circumstances?

This implies that the full range of therapeutic options should be considered to meet the needs of individual patients. It implies an ideal in which psychotherapeutic intervention is matched with patient need, in terms of both illness and personality. Proven examples of this include: the efficacy of family and behavioural interventions in schizophrenia (Falloon, Laporta and Shanahan, 1991); of cognitive therapy in depression (Blackburn et al, 1986): of brief therapy, analytic and behavioural, in anxiety/depression (Shapiro and Firth 1987): and active and non-verbal therapeutic approaches including dramatherapy with learning disabilities, the elderly, the chronically mentally ill, children and adolescents, and forms of acute mental illness (Tillet, 120
1991). A narrow-minded or sectarian psychotherapeutic stance will never be adequate to meet the range of client needs (Beitman et al 1989).

In individual treatment paradigms which have been reported in the dramatherapy literature, some have chosen to employ psychological instruments to measure change. For example, with bulimia patients, Young (1994) used a selected test battery in a before and after design. The tests consisted of an eating disorders inventory, a locus of control questionnaire, a family environment scale and a self rating scale for bulimia. The measures used in dramatherapy for PTSD were the General Health Questionnaire (GHQ), the HSW scale of Reactions to an Accident or Disaster, and the Indices of Coping Responses questionnaire. (Winn 1994). The present author (Jennings, McGinley and Orr, in press) having been asked to evaluate the effects of dramatherapy workshops on mentally disordered offenders, made use of repertory grids (Fransella and Bannister, 1977), Rorschach test (Exner, 1978), Hawards Body Barrier Test (Haward 1957), and the body cathexis scale (Jourard and Secord, 1955). Following participation in workshops which offered them the opportunity of re-enacting positive and negative self images, results indicated that patients self image moved in a positive direction away from the image of themselves at the time of their index offence towards their ideal self. Smith and Lazier (1971) report the use of an assessment of dramatic involvement researching the connections between psychological processes and the theatre. Story telling and content linguistic analysis have been used by Irwin (1975, 1976) and more recently by Lahad (1992).
Critical evaluation of the usefulness of dramatherapy with mentally disordered offenders

Dramatherapy has not been used extensively in forensic settings and rarely with mentally disordered offenders. It appears to have potential with patients are clearly inaccessible to planned psychotherapy (Schulz 1983). Dramatherapy is particularly useful in cases where other treatments have not been successful due to the patient's reluctance to engage in therapy or where there is clear resistance to "feeling" any emotion. Dramatherapy, with its use of methods such as metaphor, story, spectogram and symbolism, can provide the distance necessary for the person or group to explore, in depth, how they are affected and to look for solutions to their difficulties. Definition of distancing, as defined by Landy (1983) is a confluence of physical, emotional and intellectual elements. It is an intrapsychic phenomenon. One can remove or create distance from one's own feelings, thoughts and physical image. It is a means of separating oneself from the other, bringing oneself closer to the other, and generally maintaining a balance between the two states of separateness and closeness.

The role of the dramatherapist is a complex one. Even within their own professional and training associations there is much debate as to whether they are, primarily, creative arts workers who choose to work in a therapeutic milieu, or whether they are psychotherapists who use creative arts experience as their therapeutic modality (Meldrum, 1994: Holloway, in press).

Holloway's starting point is that drama is essentially human act. It is the reflex capacity that differentiates humans from other animals: "Humans are capable of seeing themselves in the act of seeing, of thinking their emotions, of being moved by their thoughts. They can see themselves here and imagine themselves there; they can see themselves today and imagine themselves tomorrow" (Boal 1992, p. 45). If traditional psychotherapies already utilise the human capacity for drama, then what more can the dramatherapist offer? Holloway's answer is both simple and complex - theatre.

Psychological "treatment" has been regarded as an ambiguous term, since psychological therapies aim to go beyond treatment in the medical, psychiatric sense by providing personal growth or coping skills rather than simply eliminating symptoms (Blackburn, 1994). Rehabilitation means
restoring, or compensating for, impaired functions to facilitate the social reintegration of a disabled person. In forensic terms, it has been defined as the result of any planned intervention that reduces an offender's further criminal activity, whether that reduction is mediated by personality, behaviour, abilities, attitudes, values or other factors (Martin, Sechrest and Redner 1981). Difficulties remain which are common to all forms psychological therapy- measuring outcomes. The sheer complexity of the phenomenon of treatment effectiveness almost denies the possibility of a realistic evaluation of comparability in psychological therapies in terms of conceptualization of the psychotherapy model, methods, procedures, client variables, therapist variables, environmental variables etc. The outcome of many criminal justice interventions is not directly relevant to the question of whether the provision of rehabilitative services works. The rehabilitation ideal is based on a commitment to individual welfare rather than simply social utility insofar as it reduces the likelihood of further offending (Wilson 1980). Treatment services are desirable to alleviate psychological distress in offenders, whether or not it is causally related to their offences. It is therefore important to distinguish clinical targets, which are incidental to offending, from factors which mediate the offence behaviour. There is some evidence that the use of dramatherapeutic techniques alleviate psychological distress.

The literature on psychotherapies demonstrates that interventions vary with the orientation of the psychologist or therapist, which may be behavioural, psychodynamic, cognitive, cognitive-behavioural or dramatherapeutic. The appropriate targets of forensic interventions are values which provide the ties to crime (Andrews 1983), emotional problems, skills deficits, and inappropriate social behaviour which is functionally related to offending. Dramatherapy is a medium in which such ties can be acted out.

The history of psychological treatment of offenders parallels that of the psychotherapies more generally, the early dominance of psychodynamic approaches having been replaced by a diversification of methods since the 1960's (Kazdin, 1986; Blackburn, 1993). The limited research to date on the effectiveness of dramatherapy in forensic settings indicates that its psychotherapeutic method, inherent in its application, can be validly transferred from mental health practice to mentally disordered offender population.
As the field of dramatherapy has developed, the demand for clear conceptual and theoretical framework has been made in which to understand its essential nature and therapeutic effects. As this framework has in fact emerged, a further demand for a methodology for researching dramatherapy has arisen and is as yet unanswered. Landy (1992) acknowledges that dramatherapy is a hybrid discipline, which is inherently an art and a social science, the temptation to quantify in order to achieve respectability is unavoidable.

Clinical experience leads us to the conclusion that conventional and supportive psychotherapy can be facilitated by the use of image and metaphor. We suggest that the deep affective material in the patient's inner world can be contained, changed, or consolidated by the appropriate use of "poiesis" in which new resources are called into being. And these resources fulfill the criteria of "poiesis" because, as far as the patient is concerned, something has been called into existence, in the shape of new capacities and enhanced resilience which was not there before.

(Cox and Theilgaard 1987, p. 98)
References


Mead, GM. (1934) *Mind, self and society from the standpoint of a social science behaviourist.* Chicago, IL: University of Chicago Press.


National Health Service 1977 Act. London. HMSO.


SECTION THREE: SERVICE DEVELOPMENT REVIEW

Clinical Decision Making Support System: a critique
Broadmoor Hospital 1990-95
Clinical Decision Making Support System

Outline

A. Overview and rationale

B. Introduction: SHSA commission Broadmoor Hospital Steering group

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   2. Implications for Broadmoor Hospital
   3. Identifying the user requirements
   4. Developing the requirements
   5. The emergent strategy

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B.4 Section Four: 1995: Prototype model
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C. CRITICAL EVALUATION.
A. Overview and rationale

This paper critically reviews the course of the Broadmoor Hospital development of the Clinical Decision Making Support System (CDMSS), the prototype of which is currently being tested. The review will be divided into four chronological sections.

Section one will review the CDMS project rationale, its user specification and strategy.
Section two will review the clinical team developments.
Section three will review the programme development.
Section four will review the implementation and testing of the prototype model.

The critique will conclude by examining how far the adopted strategy was properly evaluated in terms of comparisons with alternative and available systems, how far it met the aims of the institution who authorised its inception. Were major difficulties encountered and were they fully resolved? Has it been successfully implemented?

B. Introduction

The Special Hospitals Service Authority (SHSA) Information Technology Strategy Steering Group recognised the need for an IT system to accommodate the needs of clinicians in supporting their decision making process. It was hoped that if the necessary information on patients was readily available and easily accessed, time would be saved which could be transferred to direct patient contact. In 1991, it established a sub-group called the Patient Clinical Information Systems Steering Group. The PCIS steering group comprised of three representatives from each special hospital, Broadmoor, Ashworth and Rampton, a representative from Patients Sections at Headquarters, the case register manager, the SHSA's information manager and was chaired by director of medical services.

The group was commissioned to establish the user requirements for a clinical information system for the three hospital sites that would be acceptable to health care professionals working there, and to foster the development, implementation and evaluation of resultant computerised systems. Rampton Hospital, led by the head pharmacist and a consultant forensic psychiatrist developed a sophisticated pharmacological database and pioneered, in collaboration with Database plc, a local computer dealer, the development of a drug and events monitoring system (DEMIS).
Ashworth Hospital, led by a senior nurse and physicist, concentrated on creating a nursing focused, ward based information system. This is currently being piloted on two wards. Broadmoor Hospital set up a multidisciplinary steering group, chaired by Mr Michael Morgan, Director of Planning and Administration, which consisted of a senior director, a consultant forensic psychiatrist, and initially, the director of social work. The author joined the steering group eighteen months after its inception and was appointed coordinator of the project.

The key tasks were:

* to provide support and professional guidance to hospital based prototyping teams.
* to ensure that proper project management principles are applied.
* to ensure that all developments are evaluated and critically reviewed.
* to contribute to the process of producing development bids and budget setting for future financial years and to set priorities for developments and expenditure.
* to authorise expenditure on patient clinical information systems as delegated from the IT budget, to monitor the consumption of all resources and advise on value for money.
* to ensure that all developments in the wider health service services which might be appropriate to developing a clinical information system are considered and evaluated.

B.1 Section one: 1991/2: CDMS project rationale, user specification and strategy

1. Review of existing clinical information systems
2. Implications for Broadmoor Hospital
3. Identifying the user requirements
4. Developing the requirements
5. The emergent strategy

Section One: Rationale

The council of Europe Committee of Ministers emphasised the importance of the need for information systems in its recommendation that member states develop training strategies for health information systems, which takes account of their overall development and of the organisation and circumstances of local health, teaching and research (Council of Europe 1990). In concert with such guidelines, this early period of the system development was mainly
dedicated to the creation and adoption of the strategy which has guided the project to the present. It was achieved by investigating the best practice in medical computerised assessment, and an elicitation from clinicians of their requirements. The steering group insisted that the prototype approach should be adopted. Under this model, it was intended that the clinicians would lead the development and adapt the design in response to their own user requirements. They would be guided in this by specialists in information technology in the creation of software programmes to meet the user specifications. The notion that all developments in the NHS will end with the same system was too far fetched to contemplate. Deploiring the unprofessional rivalry and individualism witnessed in the development of computerised diagnostic interviews in psychiatry, collaboration within the SHSA system was indicated.

The primary aims
The aims of the Broadmoor steering group were twofold. The primary aim was to develop a system which would provide each discipline on the clinical team with an instrument for collecting the information on patients which was deemed essential for assessments, treatment planning, outcome measurement and other relevant clinical decisions - an integrated data capture schedule by which data would be accessed, collated and presented in a useful and standardised form.

The secondary aim was to provide the clinicians with additional support and standardised methodologies to assist them in clinical decision making, based on their interpretation and analyses of the available data.

1.1 Review of existing models
The immediate task was to gather as much information from published documents describing developments in information systems and computer applications in clinical and psychiatric settings. The use of computers within the NHS had increased dramatically in the previous ten years (Shanks, 1994), particularly in the acute hospitals. It was estimated that by the year 2000 approximately £5m. will have been spent on information technology for each major acute hospital in the country. In contrast little funding has been made available for the development of information systems in mental health and other priority areas.
An influential and insightful paper by Kolenaty (1980) "Hospital Information Systems Planning" correctly identified the 1980's as a critical period (in the United States) for advances in patient care-oriented information processing. The success or failure of any hospital initiative rested on the integration and processing of the multiplicity of patient care functions. Austin (1983) detailed the rise of computerization within the US health services field. Prior to 1960's, there were no computer systems in hospitals. This changed in the late 1960's and the 1970's. This was the early transitional stage in which data processing was applied to the same tasks in hospitals as in other industries, such as payroll and inventory control. Invariably, each of these processes developed separately so there were individual systems within each department. Processes central to patient care were absent. The late 1970's saw early attempts at integrated systems, many of which failed. The development of the personal computer (pc) and the growth of packaged systems led to the successful emergence of integrated systems. The 1980's was marked by the development and marketing of patient information systems. The favoured strategy was, and remained, in-house developments rather than acquiring a commercially produced software package which would require amending to suit the unique needs of the hospital. It also distinguished between two types of processes which would be vital to any development: a "production-oriented" process (information gathering) and "decision-oriented" processing (querying the information).

An evaluation of existing models enabled the group to devise a structured plan of action to accommodate the complex and idiosyncratic nature of different clinical disciplines within a high security psychiatric setting, and the consequent cost of preparing different data bases to meet their disparate needs. It was clear that a standardized data base could not be assembled easily.

The US office of technology assessment (1977) described a clinical information system as a computer based system that receives data normally recorded about patients, creates and maintains from these data, a computerized medical record for each patient, and makes data available for the following uses: (1) patient care, (2) administrative and business management (3) monitoring and evaluating medical care services, (4) clinical research, (5) and planning of medical care resources.
Harrow (1989) suggested the aims of clinical information systems to be:

1. to facilitate nursing decision making:
2. to improve the quality of nursing care by improving communication:
3. to enhance a legible and systematic method of record keeping:
4. to develop methods of evaluating care:
5. to provide accessible data by which nursing services can be monitored and evaluated.

The use of database management systems (DBMS)(King, 1980) in medical and public health lagged considerably behind scientific, commercial and military applications. Systems designed for other applications had not been able to capture the richness of medical data nor had they featured sufficiently helpful or friendly user interfaces for the non-programmer.

These aims were consistent with those of the steering group. Some exemplars were studied in great detail. The principle concepts underlying some well known patient information systems were identified.

**Exemplar: STARS**

East Suffolk Health Authority commissioned Prosolve Business Computers to provide the computer development and support to the STARS (Lambley et al, 1990) research programme. This was a rehabilitation assessment tool developed at Stow Lodge Hospital. Hence the title Stow Lodge Assessment Rehabilitation Scheme (STARS). The team required a specification to assess a patient's needs across a range of personal skills, and the ability to monitor change over a given period of time within the measured categories of the assessment. In addition, the authority wished for a strategy which unified existing information systems and fulfilled the demands of auditing purposes. This project stressed the importance of in-house development and ownership by the clinicians, informed by expert IT guidance.

**Exemplar: PROMIS**

The early leading edge in clinical systems was represented by a computerised problem oriented medical information system (PROMIS) which was developed at the University Medical Center of Vermont. PROMIS was conceived and directed by Laurence Mead MD (1970-81).
The problem oriented medical record approach in psychiatry (Hayes-Roth et al, 1972) had been devised by Weed (1969) who emphasised the need for a structured medical record to allow the clinician to readily find pertinent information on a patient. PROMIS took this notion further with the introduction of personal computers to organise the data. It attempted to represent medical knowledge in a way that was useful in the care of the whole individual. Since each individual was unique, there was almost an infinite number of combinations of variables and personal values. It was necessary to create a structure that defined the universe of data for the care of the whole individual and which could enhance precision in problem formulation. The computer system would lead to higher levels of abstraction.

**Exemplar: HELP**

The University Hospital of Utah developed a system called HELP (Pryor et al. 1980) which attempted to accommodate an ever expanding medical data base and to provide generalized procedures for the acquisition, storage, and review of all data items defined in the data base. The system aimed to develop a computerised medical database to process medical decision logic, and included diagnostic, therapeutic and alarm protocols meeting the medical and administrative needs of the hospital. It also created an effective subsystem that facilitated clinical research.

**Review of computer applications**

A review of developments of computer applications in psychiatry and psychology by Baskin (1990) highlighted the strengths and weaknesses of the then current systems. A national survey of computer utilization in the United States had stated that computers had altered only the form in which [clinical] information was gathered, stored, and accessed. Nonetheless, it concluded that this may change in the future (Baskin and Seiffer, 1990).

**Evaluation studies**

The steering group was influenced by an evaluation study (Schmidtz 1976) carried out on a clinical information system at Deaconess Hospital, St Louis. A patient oriented communication and data collection system was developed and the authors hypothesised that (a) clinicians would have additional time to spend in patient care because charting work would be reduced, and (b) that there would be greater accuracy in the transmission of information in legible form,
identifying the source, destination and time of all messages. Another influential research initiative was the evaluation study on the impact of medical information on an organisation at El Camino Hospital, California. Barnett (1975) determined several sub-objectives which included:

(a) determining changes in the organisation of staff and their activities
(b) attitude and acceptance of medical information systems
(c) the effectiveness of the performance of the medical information system
(d) changes in accuracy and completeness of information.

Results indicated that the medical information system has a favourable impact on the organisation. It improved the ability of staff to deliver patient care and reduced the time spent on administrative duties in favour of direct patient contact time.

1.2 Identify Implications For The Ward and Hospital.

The steering group learned from the research that the purpose of the collection of clinical information was paramount viz., to support the decision making process of clinicians. Hence, the title of the project changed from Clinical Information System to Clinical Decision Making System to reflect this emphasis. At a later date, the title was altered again to its current Clinical Decision Making Support System. The reason for the latter change will be discussed later.

It was clear from others' experiences that success or failure of the implementation and development of the system would be dependent on the understanding and reactions of the workforce. It appeared essential that the system developers operated within the experiences of the users rather than attempt to impose an illfitting model which may require a great deal more from the user than is realistic. Previous research had emphasised the importance of the participation of the users from the earliest stages of its development. In response to this need, the Steering Group organised a two day workshop to which all participants in the prototype model were invited to attend.

**Workshop: staff attitudes to project**

The aim of the workshop was to present the concepts of information technology (IT) to the members of the clinical team and to assess their perceptions of its potential impact on working
practices. A consultant in IT systems was commissioned to facilitate the workshop and describe some potential applications of IT in clinical fields. Researchers from Surrey University were contracted to conduct an evaluation of the effectiveness of the workshop in achieving its aims. Results from both the structured and open-ended questions indicated that the workshop should be considered an overall success in terms of its main objective viz., orienting the staff to the more general aspects of information technology. As a team building exercise, it was judged partially successful. The problem was not due to the workshop per se but rather to difficulties in organisation. Two departments were not represented (Education and Occupational Therapy), and representatives from the hospital administration were only able to attend on the first day. Whilst many of the participants appeared to have realistic expectations of the proposed system, the open-ended questions revealed some scepticism of its value. Some responses revealed quite negative attitudes to its introduction and these were commonly, though not exclusively, from the nursing staff.

"Since the primary proposition for the successful creation of an information technology system is "people willing and able to exploit information technology". it was considered important that considerable effort should be expended on designing a system so that the personal and work objectives of such staff are promoted." (pp 28-29, Hammond and Wood, 1991)

Summary findings

The findings contained in the report evaluating the workshop supported the need to establish a description of the user requirements of the proposed clinical information system. From this would emerge the tactical plan for its future development. As the hospital strives towards excellence of practice, so the clinical teams will be constantly asked to evaluate its own functioning and decision making. This aim is reflected in the Mission Statement of the CDMS project which emerged from the workshop:

1.3 Defining the Mission statement

To enhance the quality of life for our patients by advancing the clinical decision making potential of the members of the clinical team in their duty of care, and thereby improving direct patient contact time.
Expert planning

Tenders were invited from four interested groups in IT application design who were asked to present a planned method of achieving a specification of user requirements. Tenders were presented by:

1. Indepen Consulting Limited (J. Roscoe (R))
   
   Proposal for the preparation of a brief for the introduction of a pilot ward based computerised clinical information system.

2. S. Freckleton (F)
   
   Developing the requirements for a new information system.

3. Jackson Research Limited (J)
   
   Development of a specification for a ward-centred clinical information and management system (pilot).

4. O'Brian Associates (O),
   
   Proposal for feasibility study to Special Health Service Authority.

To decide which proposal would best suit the hospital in the development of the system, it was decided to apply a very focused analysis based on a psychological decision theory paradigm (Humphreys and Berkeley, 1985; Von Winterfeldt and Edwards, 1986). The first step was to determine what values should be served in the process of selecting among them. By values were meant those aspects of the proposals which best reflected the aims of the hospital inherent in the Mission Statement and which were gauged to be most likely to facilitate their achievement. These have been identified as (1) user requirements, (2) prototype methodology, (3) strategy and (4) personal characteristics.

1. User requirements

1.1 Assessment of requirements: which proposal best emphasised the importance of operational requirements contained in the Mission Statement viz: to enhance the quality of life of patients, to advance the clinical decision making of the clinical team, and to improve direct patient contact time?
1.2 **Relationship between requirements**: which proposal best appreciated the rationale of each of the requirements as they operated within the hospital? Hence, an understanding was required of the way in which quality of life for patients was achieved through the development and implementation of hospital policies, management strategies, an awareness of the contributions of the various disciplines involved, their roles and interconnectedness, and finally what data was required for decision making, inputs and outputs, the place of research, direct and indirect patient contact time.

1.3 **Development issues**: which proposal best showed an awareness of how the present process and structures could be developed by making optimum use of existing procedures within this hospital (eg., pharmacy and computer patient information network system), and within the special hospitals as a whole?

1.4 **Appreciation of the problems**: which proposal best displayed an awareness of the inherent difficulties which may hinder progress, such as staff attitudes, practices, level of training, skill levels and communication of information?

Each tender was scored according to how well the steering group assessed it met the defined user requirements. Each item was scored out of ten. The scores are presented below in table 1.

**Table 1: How each tender scored on user requirements**

<table>
<thead>
<tr>
<th>A. User Requirements</th>
<th>Tenders</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEMS</td>
<td>Roscoe</td>
</tr>
<tr>
<td>A1. Assessment of requirements</td>
<td>8</td>
</tr>
<tr>
<td>A2. Relationships between requirements</td>
<td>8</td>
</tr>
<tr>
<td>A3. Development Issues</td>
<td>7</td>
</tr>
<tr>
<td>A4. Appreciation of problems</td>
<td>6</td>
</tr>
<tr>
<td><strong>RAW SCORE</strong></td>
<td>29</td>
</tr>
<tr>
<td><strong>% of perfect score</strong></td>
<td>73</td>
</tr>
</tbody>
</table>
2. **Prototype methodology**

2.1 **Participation of the users:** which proposal best emphasised the importance of the role of the actual user which, in this instance, meant all members of the various disciplines on the clinical team, who will be constantly involved in the process of development as it unfolded? This emphasised the need for total local ownership in its inception and development.

2.2 **Testing and adapting:** which proposal best appreciated the key feature of the prototypical approach in that each step should be tested out as needs and deficiencies are addressed, and adapted until some satisfactory level is achieved?

2.3 **Consultation:** which proposal best represented the need for the members of the clinical team to recognise and seek the advice of specialists in the field of Information Technology and Human Resource Systems and to avail themselves of such expertise within and without the hospital system?

2.4 **Research analysis:** which proposal best represented the need to learn from the previous experience of others in the implementation of similar systems, especially in medical and psychiatric settings, and within the special hospitals themselves?

2.5 **Change facilitation:** which proposal best displayed an awareness of the need to incorporate measures which would facilitate necessary changes in practice and attitude within the clinical team and anticipate its generalization throughout the hospital and specials?

Each proposal was scored out of ten on each item which defined the best fit for prototype methodology. The results are presented in table 2.

### Table 2: How each tender scored on prototype methodology

<table>
<thead>
<tr>
<th>Items</th>
<th>Roscoe</th>
<th>Freckle</th>
<th>Jackso</th>
<th>O'Brian</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. Participation of user</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>B2. Testing/adapting</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>B3. Consultation</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>B4. Research and analysis</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>B5. Change facilitation</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

**RAW SCORE**

<table>
<thead>
<tr>
<th></th>
<th>Roscoe</th>
<th>Freckle</th>
<th>Jackso</th>
<th>O'Brian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>32</td>
<td>37</td>
<td>30</td>
<td>23</td>
</tr>
</tbody>
</table>

**% of perfect score**

<table>
<thead>
<tr>
<th></th>
<th>Roscoe</th>
<th>Freckle</th>
<th>Jackso</th>
<th>O'Brian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>64</td>
<td>74</td>
<td>60</td>
<td>46</td>
</tr>
</tbody>
</table>

146
3. **Strategy**

3.1 **Project planning structure.** Which proposal best represented the need to establish a well constructed plan of action detailing the stages of development which, in our case, would make use of the benefits of several feasibility measurements which the steering group had already achieved?

3.2 **Process:** which proposal best represented the recognition of the dynamics involved in personal and working relationships of the members of the clinical team and the importance of their role in its progress?

3.3 **Evaluation:** which proposal best represented the need to incorporate measures to evaluate the level of achievement at each stage of the way in order to justify its continuation and cost effectiveness?

3.4 **Impact assessment:** which proposal best represented an awareness of the need to assess the impact which the system development would have on staff attitudes, morale etc., in order to allow for this in a constructive manner as the model is adopted on other wards and other hospitals?

3.5 **Costs and strategy:** which proposal appeared to be best value for money.

Results: how each tender was scored out of ten on each item defining strategy is presented in table 3 below:

<table>
<thead>
<tr>
<th>Items</th>
<th>Roscoe</th>
<th>Freckl</th>
<th>Jackso</th>
<th>O'Brian</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1. Project planning structure</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>C2. Process</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>C3. Evaluation</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>C4. Impact assessment</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>C5. Costs</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

| Raw Score | 30 | 36 | 27 | 27 |
| % of perfect score | 60 | 72 | 54 | 54 |
4. **Characteristic assessment:** Which proposal best emphasised the importance which the steering group gave to the personal characteristics of the IT consultants (the proponents) who would be meeting and working with the staff in their development of clinical decision making practices?

4.1 **Experience:** which proponent had the most appropriate experience in the development of information systems and organizational effectiveness with potential application to clinical decision making?

4.2 **Ability to relate:** how had the members of the steering group responded to the personal qualities of each proponent as an indicator of the person's potential to effectively relate to the staff as they attempted to operationalize their working practices in more effective ways?

4.3 **User orientation:** how well did each proposal reflect the proponent's ability to listen to the stated needs of the steering group? This would represent the importance of group cohesiveness, local control and ownership and would be the difference between an imposed system adapted to their needs as perceived by the proponent as expert, or to a dynamically created system with direction and advice from the proponent as a specialist.

Results: how each tender was scored out of ten on items subsuming personal characteristics is presented in table 4 below:

**Table 4: How each tender scored on characteristics assessment**

<table>
<thead>
<tr>
<th>Items</th>
<th>Roscoe</th>
<th>Freckl</th>
<th>Jackso</th>
<th>O'Brian</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1. Experience</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>D2. Ability to relate</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>D3. User requirements</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>RAW SCORE</strong></td>
<td>21</td>
<td>24</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td><strong>% of perfect score</strong></td>
<td>70</td>
<td>80</td>
<td>63</td>
<td>40</td>
</tr>
</tbody>
</table>
Final decision analysis

Various possible outcomes of each proposal can be represented in some orderly way by prioritizing the importance of each value and its contribution to the final outcome of the development as perceived by the Steering Group. Each value is apportioned a percentage according to its importance. The weightings accorded to each were:

1. user requirements 30%
2. prototype methodology 25%
3. strategy 25%
4. characteristics 20%

The steering group assessed how well each proposal appeared to be "linked" to the relevant values of the project. The results of the steering groups views on the four tenders are presented in Table 5.

Table 5: Final results of steering group's view on tenders

<table>
<thead>
<tr>
<th>TENDER</th>
<th>DECISION SENSITIVITY ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Roscoe</td>
</tr>
<tr>
<td>CRITERION</td>
<td>wt</td>
</tr>
<tr>
<td>A. Requirements</td>
<td>30</td>
</tr>
<tr>
<td>B. Prototype</td>
<td>25</td>
</tr>
<tr>
<td>C. Strategy</td>
<td>25</td>
</tr>
<tr>
<td>D. Personal Characteristic</td>
<td>20</td>
</tr>
<tr>
<td>tot</td>
<td>6690</td>
</tr>
<tr>
<td>%</td>
<td>67</td>
</tr>
</tbody>
</table>

The results of this decision analysis, made by the steering group of the tenders, was presented to the main SHSA. IT. strategy group. From the results the tender score totals in order of precedence were:

Freckleton 75
Roscoe 67
Jackson 60
OBA 46
Mr S Freckleton was commissioned on the basis that his tender appeared to match the requirements of the institution better than any of the rest. It should be said that the Roscoe tender was also highly regarded. The consultant's task now was to establish the user requirements in terms of the specific contribution of separate disciplines, their anticipated needs, and recommendations for the implementation of the proposed system.

**Expert's Recommendations For Future Developments**

Freckleton's protocol strongly recommended that the implementation of the pilot system should be undertaken on a staged basis, with sub-systems being developed and introduced to the main system. Progress should be made by producing models within the system which could be tested and used in the pilot.

The group were guided by Mr S Freckleton's analysis of conditions in the hospital which was contained in three separate reports:

2. *Developing the Requirements for a new information system.*
3. *Developing the Requirements for a pilot ward information system.*

The first report identified three main types of problems to anticipate:

* the timing of measurements to take account of the inevitable learning process after the introduction of the change.

* the effect of other changes in policy and operations on those aspects of performance being measured.

* relevance and feasibility of the measures used.

The measurement of the quality of decision making presented a difficult problem. A number of issues arose:

* what was meant by quality of decision making?

* what sort of decisions were being made?

* what effects did these decisions have on the performance of the organisation?
The following set of outputs and related tasks were produced:

* a set of relevant quantifiable measures to estimate the achievement of the immediate objectives and determine the worth of the information system.
* data collection procedures to support the implementation of the measures:
* a report of the performance of the current practice:
* a plan for the measurement and assessment activities after the introduction of the system:
* an assessment of the performance two months after the introduction of the new system:
* an assessment of the performance six months after the introduction of the new system:
* a final report of the performance and assessment of the value of the system twelve months after the introduction of the new system:
* a report describing the hierarchy of objectives for hospital and ward, with suggestions for measures to support long-term development of the management systems to improve overall performance of the organisation.

The following issues were addressed:

* the development and testing of patient contact time measures
* the development and testing of measures on decision-making performance
* the development of data collection and computational procedures
* current performance assessment
* the development of a plan for measurement after introduction
* analysis of the objectives of the institution
* measurement of performance and worth of the new system

**Developing the system requirements**

The second report "Developing the Requirements for a new information system" produced a clear statement of the requirements which would enable the clinical team to implement the pilot project.

Objectives:

* to identify the user groups
* to provide the key elements of the data to be stored for each user group
* identify the requirements for the manipulation of the data for each user group

The relationships between users groups and information processes is presented in figure 1.on the following page.
Figure 1: Functional Groups and Data Bases
The elements of the conceptual structure underlying the approach comprised the following:

* IT structure
* application package structure
* transaction communities (users)
* operational systems.

Sitting on top of this IT structure was a set of applications packages such as word processors, databases, spreadsheets and E-Mail. These were generally available throughout the network. Another set of software will be specially generated to provide specific facilities not provided by the general packages.

The transactional communities comprise members who were directly involved in the clinical team’s activities together with external members with whom information is exchanged represented by the disciplines and data sources:

* medical records
* psychiatry
* psychology
* nursing
* social work
* education
* occupation therapy
* rehabilitation services
* pharmacy
* neurophysiology
* neuropsychology
* seclusion and incidents database

Other internal communities will include:

* general management and administration
* ward management and administration
* unit management and administration
* visitors management
Objectives

1. for each transaction group
   * list of participants, external and internal
   * list of information (entities) which are the subject of transactions: each entity will have an associated list of attributes.
   * list of transactions, types, initiating events, frequency and security arrangements.

2. set of applications to be supported by the IT structure:
   * general to all groups
   * specific to one or more group.

3. outline of the IT structure to support the application.

4. how the information sources would be related and supported in a data base design.

Tasks

The outputs would be produced by a process of progressive refinement, with three stages of refinement:

**Stage one:** to produce an overview of the overall information system requirements with indications of:
   * the priorities in terms of desirability
   * assessment of technological and economic feasibility
   * list of priorities

**Stage two:** to produce a more detailed analysis of the priority areas chosen in stage one, with a further analysis of technological and economic feasibility.

**Stage three:** the final stage of the analysis which will lead to the production of the requirement specification.

Identifying the user requirements

The third report "Developing the requirements for a pilot ward information system" was based on an extensive set of interviews and discussions with members of the clinical team and other members of Broadmoor Hospital staff who had an interest or a stake in aspects of the clinical information system's development. Additional sources of information were documents and papers covering information on other systems, the existing IT structure, and details of existing manual systems.
During the course of the interviews, it became apparent that a good team spirit existed within the clinical team. There was a general openness to the idea that IT can help the team to improve its effectiveness. There were concerns about the need for adequate training and the recognition of the additional burden of entering historical data into the system to staff. It was also clear that there was a strong appreciation of the degree of sharing data and information between professional functions, resource management and patient administration.

**Overview of requirements**

Three general principles were set out as being important in the development of the ward clinical information system.

1. That the data should be entered into the system on creation and that transcription from written entries should be kept to an absolute minimum.
2. That there should be one single shared database which is accessible for all interactions by and with the clinical team.
3. That the resulting database should be controlled by a database administrator.

These principles lay at the heart of modern practice in information systems design and operation. There were a number of reasons why these principles had emerged:

* the avoidance of transcription errors
* significant reduction in clerical effort,
* the removal of the problems of maintaining several different databases containing the same data.

There were a number of longer term consequences of the application of these principles. The clinical team shared data with many different functions across the hospital. Thus, there were data that the clinical team would wish to access from other operational systems in the hospital and there were data in the clinical systems which others would wish to access eg: pharmacy, visitors, medical records, seclusion, incidents. There were a number of external systems with which it was considered desirable to exchange data. One such case was the Case Register of the SHSA.
Viewpoints of main users
The individual members of the clinical team wished to be able to access readily the information and data relevant to specific patients as and when required. They also wished to have support in the preparation of the statutory and other reports which are required internally and externally from them. They also wished to communicate effectively and reliably with other members of the clinical team. In this mode, the members of the clinical team would meet as a ward round or case conference or enquiry. In these functions, they wanted to be able to access information about the clinical state of the patients, clinical histories from the point of view of the different disciplines involved and to come to a decision about the clinical treatment of the patient. These decisions were then required to be recorded in terms of the nature of the treatment and the resources scheduled to implement the treatments.

Clinical research and analysis
When the information system was to be used for research and analysis in support of the clinical team's decision process, there was a need for a set of coherent historical records with data such as the patient state, treatment and behaviour. This data could then be examined using a variety of statistical and other tools to examine the relationships between treatments, behaviour and changes in clinical states. The role of the system would be to support research through the analysis of data which had previously been recorded.

Requirements
The concept that underlay the way in which the requirement had been structured, related the patient to a set of processes operating on the patient, in order to improve the patient's current status to the point at which transfer out of the institution was a viable option. There were four recognisable processes:
* the clinical process
* the resource management process
* the research process
* the communication process
The clinical process
The clinical process represented the functioning of each of the clinical disciplines in a clinical team with a duty of care towards the patient: psychiatry; nursing; social work; education; occupational therapy; rehabilitation services; psychology. These core processes were supported by secondary processes such as pharmacy, neurophysiology, neuropsychology, security, medical records, administration and management.

The resource management process
The resource management processes were concerned with the clinical team's role in allocating the resources that were available to the team to apply to the various clinical processes, in order to achieve the objective of improving the patient's state. These management processes required to know the effectiveness of the various inputs from the clinical processes and the use of the resources assigned to the team. The measure of effectiveness would be related to the improvement in the patient state in the rehabilitative process. The clinical team also required to know, when making their resource allocation decisions, the existing schedule of commitments of the resources that are available to the team. This management process was a description of the way in which the clinical team operate in the "ward round" and the "case conference". The outcomes of these decisions were recorded in the treatment plan. They also were required to monitor the application of the resources and changes in the clinical state of the patient.

Only the nursing resource was regarded as dedicated to the ward while other resources were shared with other wards and functions. Thus in the allocation of these resources it would be necessary to have a system which covered the total hospital resource for these functions and the overall commitment of this resource.

Research and analysis process.
The research and analysis process uses the historical data on the patient's clinical state, treatments and other relevant histories, in order to establish better information of the relationships between treatment and outcomes. Information involved includes patient behaviours, psychological inventories, clinical state examination and other relevant data to improve diagnosis, prognosis, treatment regimes and assessment of future behaviours.
Communication processes
The communication processes between team members are extensive. It was apparent from the interviews that a great deal of support from an information system could be provided to these processes, thereby improving the effectiveness of the team overall, very often by reducing the time taken to acquire data and information and generate reports.

The information requirement
The information processing requirements to support these processes comprised of the following elements:
* a shared single database containing the necessary data elements together with the means of recording, storing and retrieving the data:
* a means of displaying the retrieved data in a meaningful way to the individual users:
* support to communication between the team members:
* support to communication with external inputs and outputs:
* support to communication with the database.

Report production
In addition there was a need for the system to support the preparation of reports to external users.

The reports required included the following:
* annual report to the Home Office (C3) on restricted patients.
* annual reports to management on non-restricted patients:
* tribunal reports at least every three years on each patient. These can be produced annually at the patient's request:
* case conference reports:
* enquiry reports;

The essential requirement was to be able to generate these reports from the current patient state data and the various process (disciplines) reports. It was noted that while some of it will be available in the form of coded data, much of it would consist of free text.

The final report (June 92) recommended that a logical design for the single shared data base be devised which would allow for the long term development of the pilot system in a hospital-wide operational system.

In the longer run the systems will support, in an integrated manner, the clinical processes, management processes, research processes and inter-team communication. In the shorter term, the order of implementation will depend on the priorities given to implementing support to these various processes. (Freckleton, 1992, page 72).
B.2 Section Two. 1993: Clinical Team Developments

1. Familiarization
2. Development of discipline schedules
3. Consolidation
4. Formulation of strategic plan
5. Progress report for 1993

Recommended implementation approach

It was strongly recommended that the implementation of the pilot system was undertaken on a step by step basis with sub-systems being developed and introduced into use, so that the learning load on the users at any one stage was kept to a reasonable level. It was also recommended that progress should be made by producing prototypes which can be tested and used in the pilot.

Three stages should be considered:

- Stage one: Initial introduction and familiarization
- Stage two: Further development
- Stage three: Consolidation

2.1: Familiarization

The purpose of this stage was to introduce computing to the clinical team in a supportive, useful and simple to grasp manner. This stage will also continue to work on establishing the design and further detailed requirements analysis for stages 2 and 3.

Training, in basic techniques through to advanced, in the use of the DeltaV database, was arranged with the software company Compsoft, plc, for all members of the prototype clinical team.

The clinical team visited Ashworth and Rampton Hospitals to view the clinical information system developments there.

Database design

In parallel with these early implementations, it was considered important to set out the logical design for the single, shared database to support the long term development of the pilot system into an operational system.
The logical design of the database is a key activity which must be done correctly in order to ensure the following:

* the ability to extend the database to support a hospital information system through the use of a single, shared database:

* that the integrity of the database is maintained through all processes of addition, deletion and amendment:

* that a wide range of queries can be supported either through the use of application programmes or by the use of a structured query language.

**Other specifications**

There were a number of other elements which were considered for the implementation: These included the administration and recording of psychometric test data. Facilities for storing and retrieving these can be considered for early implementation. There were also a number of structured clinical examinations which would be targeted. These included the Present State Examination (PSE), the Maudsley Assessment of Delusions Schedule (MADS) (Taylor et al, 1994).

**The use of existing facilities**

The existing database software package, DeltaV (Compsoft 1987), was chosen to develop the pilot system. This supported the current patient information system (PIS) in the hospital, used mainly by medical records office. With a view to a single shared database throughout the hospital, it was the logical choice. Whether its inherent qualities met the needs of the clinical system would be tested via feasibility studies.

The further development of the project will depend on the future development of the hospital computer network and maintaining a balance of priorities between supporting clinical team processes, research and analysis requirements and the communication process.
Stage 2.

The key tasks in stage 2 include:
* the implementation of initial database and appropriate user access facilities:
* the implementation of additional application systems:
* the assessment of user reactions to the system:
* the modification to prototype implementations to provide improved user satisfaction:
* development of requirement, design and implementation specifications based on experience with the prototype systems:
* analysis and planning for stage three:
* exploitation planning: aimed at identifying the opportunities for exploiting the experience gained during stages 1 and 2.

Stage three: consolidation

The following tasks were considered appropriate:
* completion of the pilot by adjustment and fine tuning of those elements implemented in stages 1 and 2.
* planning for exploitation within the wider information system and IT strategy for the hospital and SHSA.
* implementation of additional application systems in prototype form:
* extension of the database:
* assessment of user reactions.

The recently updated version of the system software, Delta V, was judged as suitable to meet the current needs in developing the pilot system. The present networked computer system within the hospital could be modestly extended to incorporate the hardware needs of all users involved in the clinical decision making process.
Formulation of The Strategic Plan

In response to the recommendations of the Freckelton report on User Requirements and the way ahead, the steering group identified the following tasks:

a) a logical design for the single shared system
b) assess network and computer facilities of the users of the proposed system.
c) implementation and development of sub databases of users within the system.
d) assessment of user reactions to the system to date by conducting an initial impact assessment of its introduction and present status (Wilson, 1993: MSc Dissertation)

This represented the third contracted research initiative by the steering group. The findings will be found in the document *The organisational impact of a computer system at Broadmoor Hospital (Wilson 1993)*. The conclusions of the report read as follows:

*The stated objectives of the system are to facilitate specific organizational changes which will improve patient care. However, a review of the relevant literature indicates that conscious behavioural and organizational changes are usually required to realise the potential of the system. These changes need to be carefully planned and implemented, since they do not inevitably result from the systems implementation (p. 36).*

These research findings suggested that the success of the project depended on a detailed, developmental strategy, which specified the intended improvements in decision making. Several measures could be appropriate. By specifying more precise aims, staff will be better able to assess whether they are using the information on the system most effectively. The same applies to the other objectives; to improve team communications and increase time with patients.

The literature on hospital studies also highlights the difficulty of introducing a corporate team approach to patient care, and demonstrates that a computer system will not in itself facilitate this change. The concept of the clinical team appears already to be well developed and supported at Broadmoor, compared to the examples in the research literature. However, there are some indications that nurses may not be fully integrated members of the clinical team. The most apparent benefits of the computer system are to the team as a whole, and the most apparent costs (in terms of increased workload and possible loss of control of information) will be borne by the
nurses. Therefore, it was particularly important to address the nurses' concerns and if necessary to modify the systems development to change this perceived imbalance.

The main recommendation of adjusting the imbalance within the clinical team in favour of the nursing discipline was operationalised immediately. Funding was received to second a staff nurse to work with the development group. In order to maintain the momentum which the preliminary groundwork had created and to facilitate the implementation of the decisions which the hospital steering committee had made, it was agreed to release the author from clinical duties and second him to the project on 0.6 wte basis. This would allow him to act as coordinator of the project. It was helpful that the consultant forensic psychiatrist, who chaired the group, was also the medical director to the hospital. He (the author) realised the importance of expert support in psychometrics and computing skills and contracted Dr S Hammond, a psychometrician from the psychology department of Surrey University. Additional administrative and technical support was provided by Mr D Mann and Mrs C Connell, from psychology support services, and Ms C Waters, a student on her industrial placement from Surrey University.

The progress report of July 1993 can be summarised as follows:

Update on Schedule development
Each discipline in Dover Clinical Team (DCT) continues to work on its specific user requirements in terms of identifying the data which it regards as essential in assessing the treatment needs of individual patients. A target date for completion of draft data capture schedules was 30 April 1993.

Psychiatry
The I.T. department, (Mr. Graeme Munro and Mr. Robin Webster had completed a draft/test version of the Admissions Checklist in Delta V(Compsoft.plc) (the database software product.). Dr Sean Hammond continued with the development of a test version of a clinical diagnostic programme derived from the criteria and symptomatology contained in ICD 10. He had chosen to begin with personality disorders in order to demonstrate its compatibility with the
psychometric assessments of personality which were being developed simultaneously as part of the psychology module of CDMS.

**Psychology**

Schedule development has taken the form of the collation of several sub-directories

1. Psychosexual assessment schedule (D Perkins)
2. Neuropsychological assessment schedule (M Hill/J Lumsden)
3. Personality assessment schedule (JD McGinley/S Hammond)
4. Phenomenology of Index Offence (A West/JD McGinley)
5. Alcohol/drug misuse assessment schedule (M Quayle)
6. Childhood developmental checklist (JD McGinley)

The psychology department had elected to operate a two stage CDMS. This is necessary since the psychometric scrutiny of our assessment procedures requires the data to be filed at the item level while decisions based on these assessments will be derived from aggregated scores. Thus for the psychology department, a **local data base** was created. It was hoped that it would be developed within the Delta system, containing precise item level information. This data base will feed the central CDMS with summary information required to aid clinical decision making.

Utilising the features available in Delta, the information fed to the CDMS will involve the following:

**Transactions.**

Summary scores from psychometric assessments, in their raw form (including temperament, cognitive data, psychosexual profiles etc) and clinical interview will need to be stored. This may also include data generated by psychophysiological means. Many of these measures will be repeated since they provide information on patient change and this will necessitate the construction of a data base that may exceed 8 transactions.

**Reports.**

A psychologist's report will be attached to each patient and will be updated when necessary. This will require being stored in Delta in the form of a letter unique to each patient.
**Database and data analysis.**

As many psychometric devices used in psychological assessment utilise norms to aid in interpretation, transformation tables were required within the database. This was possible in Delta and allowed the user to apply a range of normative information to the patient's scores.

**Nursing**

A written test schedule which was based on the nursing process notes and other schedules (e.g., a rehabilitation checklist) neared completion. Mr Dudley Webb, the nurse seconded to the project, consulted with Mrs E Cerri and Mrs Jane Smith (the authors of the nursing process schedule) and was collaborating with Mr D. Smith, a nursing manager, in research and development. The project development work on Harrogate Ward, a female ward, led by Mrs Ann Gatsby (Ward Manager) was an enhancement of part of the nursing process schedule. Their collaboration ensured that any prototype will have equal relevance on male/female/mixed wards.

**Social Work [Mr J Walter/Mr P Johnston]**

Mr Paul Johnston devoted his energy and expertise to the creation and development of his department's information system. Schedule development work on "Components of a Social History" is a parallel task demanded further time. He completed the broad outlines of the schedule using his expertise in the use of Delta V.

**Rehabilitation Therapy Services [Mr P Rooney/Ms J Holt/Ms A Harrison]**

Ms J Holt tested a privately produced computerised information system which had been devised for use in NHS. Mr R Webster visited its author who demonstrated its clinical applications to him. A further demonstration was arranged by J Holt in Broadmoor at which Mr G Munro attended. While having specific relevance to RTS and while many features could perhaps be incorporated into our system, the consensus opinion suggested that it would not match our specific needs and could not be adopted in its present form. It was recommended that a copy of it be purchased from the CDMS budget so that RTS could use it as a template for their own departmental schedule.
**Education Department** [Mrs A Hollis/Mr M Annanin]

Mrs Ann Hollis (education department) had been coordinating the development of the education department's assessment schedule and a draft/pre-test version was available. The Education Department, through the services of Mrs Jenny Leason, had been instrumental in furthering our training needs by providing lessons in WP and keyboard skills.

**Pharmacy** [Mr K Cookson]

Mr Ken Cookson (chief pharmacist) had completed entering the medication histories of all present patients in a specially constructed database developed by the clinical pharmacist at Rampton special hospital. It was recommended that the clinical team implemented the pharmacy model on the ward as an early target. This will entail staff training in the use of the system and the introduction of a laptop on the ward for easy entry and recording of data.

**Seclusion monitoring** [Mrs J Hayward]

Mrs Jackie Hayward, secretary to the general manager, had been responsible for the recording and analysis of all seclusion incidents within the hospital. She was analysing the database with a view to demonstrating its interface with clinical decision making eg. to examine the links between previous violence (a violence rating based on offending history) and seclusion (the triggering event which led to its use): cross tabulations between seclusion and Mental Health classification.

**IT Directorate** [Mr R Webster/Mr G Munro]

Mr Robin Webster, IT manager, and Mr G Munro, assistant IT manager, continued to advise and support developments and were waiting for the completion of the draft schedules from each discipline prior to programming work. Their contribution would be crucial in the creation of test programmes derived from these schedules.
B.3 Section Three: 1994: Programme development

1. Strategic changes

Management changes within SHSA

Management of the IT strategy was devolved to the local hospital sites with the dissolution of the SHSA IT steering group which had supported the initiative to date. Further funding would be accessed via Broadmoor's finance director who was also the director in control of IT developments.

Personnel additions to CDMS development group.
Due to senior management changes in the hospital management team, the duties of the Director of Administration were changed to allow him time to devote to preparing a strategic plan which would take the hospital into the new era of Trust status within the NHS. As a result, he withdrew from the management group of CDMS, although he remained very supportive. The management of the project was the responsibility of Dr M Orr, at that time, Director of Medical Services, and the author, who had been partly seconded for the task of project coordinator. They were closely supported and advised by Dr S. Hammond, who was the consultant to the project management team. Programming demands and research development tasks required the employment of a research and development officer in the person of Mr D. Bishopp, who had recently completed research in homelessness and offender profiling at Surrey University.

2. Software developments

Mr Bishopp's appointment coincided with the advent of a new database package from Compsof, plc, called EQUINOX for windows which was adopted for the project. The shortcomings of the DOS based Delta V system would inhibit the progress of the system developments which had grown to sizeable proportions in terms of the vast number of variables required to accommodate the information needs of the clinicians, and the need for complex transactional interchange of
data. Mr Bishopp took on the responsibility of programme development and received advanced training in the use of the new package at Compsoft headquarters.

3. Clinical changes
The clinical responsibilities of the CDMS management group changed dramatically. Both left the clinical team which had been targeted for the on-site prototype testing of the system. Together with the delay in adjusting to the requirements of the new EQUINOX system development and these clinical changes, resulted in an unfortunate distancing of the development with the clinicians. This was a period of programme development based on the previous year's careful development of the user requirements, now consolidated in the individual discipline assessment schedules, for which draft programme specifications had been written.

4. Conceptual shifts within CDMS: clinical decision making defined
It was becoming clear to the steering group that staff's perceptions of the developments were being distracted by their basic misconception that this was a complicated computer development rather than a clinical development with the aid of computers. The project was re-titled "Clinical Decision Making Support System (CDMSS) to emphasise that the aim of the project was to support the members of the team in their clinical decisions. As the first stage of the development was focused on information capture, it was decided to develop a subsystem to demonstrate the application of the data to a vital decision area - risk assessment.

Clinical Decision Making defined
It was deemed important to clearly define the function of clinical decision making. The field of information science is a product of the computer age. Its primary contribution to decision sciences is in the development of interactive computer models, sometimes referred to as decision support systems, which improve decision makers' ability to evaluate complex decision situations. When you have to predict outcomes frequently and repeatedly, the logical first step is to try and uncover the nature of the function. When people make their decisions intuitively, the process will be idiosyncratic. They may be unwilling to construct explicit models: they may be unwilling to invest the time and the cost required: or they may be unable to collect the necessary data.
There has been little systematic research into clinical decision making. However, one can detect
a growing awareness of the usefulness of the application of clinical decision support systems to
ease the current work load of clinicians by facilitating assessment procedures derived from the
complexity of information available on patients. With the development of multidisciplinary care
planning, the need for systematized approaches is paramount for success in terms of efficiency
and effectiveness. The more unstable the environment, the greater the need to focus on
effectiveness. In uncertain environments, change is the main issue. Efficient performance of
previous tasks is less relevant than the responsive adjustment to environmental and clinical shifts.

Clinical decision support systems implies the use of computers to assist clinicians in their
decision processes. The relevance for clinicians is the creation of a supportive tool, under their
control, which does not attempt to automate the decision process, predefine objectives, or impose
solutions (Keen and Morton 1978).

Decision analysis may help the decision maker to explicitly and systematically examine how
elements of the decision are combined and, thus, check the consistency and logical coherence of
the decision. This may highlight inadequacies in the representation eg missing information. The
analysis assists the decision maker identify which estimates are crucial and, therefore, need the
most care in generating (Chase, 1993).

Decision making models can assist clinicians to identify assumptions underlying their decisions
and how much weight should be assigned to each when dealing with uncertainty. Decision
theories guide the clinician in breaking the decision down into actions, events and outcomes
(\textit{decomposition}) and then putting these parts back together (\textit{recomposition}) according to some
formal rules.

Structuring decision problems into a formally acceptable and manageable format is considered
to be the most important step of decision analysis.
5. Risk assessment strategy and security profiling

The standardization of Risk Assessment methodology became a subsystem aim of the project to demonstrate to clinical teams clinical decision making in action by adopting the systematic approaches in assessing risk factors in relation to each patient using the developing clinical information system. Its implementation would support the Hospital in achieving required quality standards as well as advancing clinical decision making. CDMSS has collaborated with Broadmoor Hospital Security Profiling Group in the development of Security Profiles.

Broadmoor Hospital Security Profiling Group, of which the author was a member, presented the hospital's security strategy at a national seminar on Security within mental health at Winchester, demonstrating how security and clinical needs could be collaboratively merged in the pursuit of security profiles derived from standardized risk assessment procedures being developed within CDMSS. The adopted approach accurately reflected the four principles contained in the SHSA document Security in the Special Hospitals: A Special Task" (1992) produced by Director of Security:

The Security Strategy is based on standardised Risk Assessment and Risk Management procedures which are informed by the clinical analysis and judgement of the members of the clinical teams. Skilled and sophisticated clinical decision making reduces the unpredictability factor of disordered patients' future behaviour to acceptable minimal levels. The prototypical development of Broadmoor's Clinical Decision Making Support System will facilitate and support the process of risk assessment and risk management. Through continuous analysis and research, an appreciation of possible outcomes would be enhanced and thus further reduce the risk of false positives in predicting dangerousness. By the collection of relevant available information and the measurement of change, the management of risks will be improved and more easily monitored.
B.4 Section Four: 1995: Prototype model

1. Early prototype model

A prototype working model was reaching completion early in 1995, due to the programming skills of Mr Darren Bishopp. The model will allow each discipline on the Clinical Team to collect the information on patients deemed essential for assessments, treatment planning, outcome measurement and other relevant clinical decisions. A written specification of the first prototype is now available for which the hospital retain the copyright.

Strong contacts had been re-established with the disciplines in preparation for handing the prototype to them for testing. The nursing development was coordinated by the newly appointed ward manager of Dover Ward, the original targeted ward. She was the victim of a savage attack by a patient which resulted in prolonged sick leave. However, a research assistant had been appointed to support the nursing development who maintained the early momentum created by the ward manager, and remained in contact during this period. The nurse schedule group has now been endorsed by the new unit manager, the unit nurse coordinator and the hospital nursing practice and quality control team.

2. Hospital operational changes

In anticipation of the new demands of the purchaser/provider model, underlying the ideology of political changes being orchestrated by the present Conservative government, the hospital underwent the most dramatic operational changes in its history. Three separate operational units were established, each with its discreet clinical objectives. Separate budgetary and management arrangements were introduced while overall control was maintained by the central management group who would, in their turn, relate directly to a newly appointed commissioning board. These changes were the result of government directives (NHS Executive Briefing, 1995).
3. **Management structure: CDMS**

To accommodate the new management structures within the hospital, and coinciding with the current stage of prototype development, it was proposed that the CDMSS project would be advanced and its progress monitored by having in place a hospital wide operational policy which would embrace the new unitary design. The management group was strengthened with the appointment of the Director of Finance who was also responsible for all IT developments in the hospital. In addition a formal Development Group was appointed, who would be responsible for the implementation of CDMS design, its ongoing development and testing, and the coordination of the Operational Groups, representing the disciplines and subsidiary sub-system development groups. Unit managers would be represented on the development group.

3.1 **Roles of the management group.**

1. overall management of CDMS project
2. accountable to HMT
3. to assist Director of Finance in the security of the system
4. to link with Clinical Audit developments
5. to collaborate with Security profiling initiative
6. to lead Risk Assessment Strategy
7. to lead Read Codes/ICD 10 developments

3.2 **The Development Group Roles**

1. Programme development: to refine schedules and develop output reports for CTs.
2. Risk Assessment Strategy: to continue development of standardizing procedures and identifying and weighting predictive risk factors
3. Security Profiling Group: to continue collaboration with this group.
4. Security of system: to develop and implement directives of management group
5. Clinical Audit to link with Clinical Audit developments as they arise as directed by management group
6. Read Codes/ICD 10: to develop and implement as directed by Management Group
3.2 **The Development Group Roles** (cont)

7. **Clinical Decision Support:**
   - Actuarial Decision Support (ADS) System
   - Computerised Assessment System (CAS)
   - Research Support System (RSS)

8. **Personality Disorder Assessment:**
   To support standardizing assessment approaches to personality disorders and psychopathy based on ICD-10/DSM IV interview schedules and psychometric measures (e.g., PCL-R, MMPI, Morey Scales, IPDE).

3.3 **Operational Groups**

1. **Definition:** Operational Groups represent the development team in the implementation of the prototype on three selected Wards.

2. Each Operational Group will consist of a Manager representative (Ward Manager) from the targeted ward who is accountable to and will represent the interests of the Unit Manager: a member of staff who will coordinate the collation of the clinical information on patients which will inform the CDMS project: and a representative from the development group who will coordinate the implementation of the prototype model.

3. The Operational Group will be responsible for the security of the system on the ward, controlling access to the computer.

4. The Operational Group will meet weekly and supply its minutes to the development group and the clinical team.

5. The Operational Group will report to the ward RMO and clinical team on weekly update basis.

6. The Operational Group will meet with the Development Group monthly.

7. The Operational Group will meet with the Management Group twice a year.
4. Current developments

4.1. Risk Assessment and Security Profiling

The standardization of Risk Assessment methodology has been regarded as an essential aim of CDMSS encouraging Clinical teams to use systematic approaches in assessing risk factors in relation to each patient. Its implementation will support the Hospital in achieving required quality standards as well as advancing clinical decision making. CDMSS has collaborated with Broadmoor Hospital Security Profiling Group in the development of Security Profiles.

4.2. Actuarial Decision Support (ADS) System

Due to the pioneering work of the CDMS consultant, Dr S Hammond, a further facility is being developed which will ultimately serve to support the clinician's decision by providing additional information drawn from actuarial, statistical analyses. It must be stressed that this module is viewed purely as a support to the clinician and it is not to be viewed as a 'computerised decision making system' in its own right. The principles upon which the CDMS-ADS facility is based are statistical prediction models in which existing data is used to predict likely outcomes which may be relevant to certain specific decisions. This requires that large amounts of empirical data will exist upon which the statistical models can be developed. Such a requirement indicates that the CDMS-ADS facility will need to phased in following a period of time during which relevant data is entered into the CDMSS data base.

The information provided by the CDMS-ADS facility will include a probabilistic assessment of outcome and a detailed account of the relevant variables and the weights identified for them by the system which have led to the assessment. Ultimately, this information will be useful in identifying the most predictive combination of variables for a number of specific outcomes.

On-going research in the Department of Psychology at Broadmoor and Surrey University has already revealed the applicability of such actuarial systems in relation to predicting suicide risk, re-offending and security profiling.

The CDMS-ADS programs have been written and are ready to be integrated with the CDMSS data base. There are three modules and these include a variety of statistical models for dealing with the data. The modules are as follows:
Linear and Logistic Procedures

Programs have been written and tested using linear and logistic methods of Regression and Discriminant Function Analysis. These have a number of limitations due to the fact that assumptions of the models are often violated in real data. Nevertheless, they can provide useful indications of broad risk in certain contexts. Logistic methods are useful when the data and outcome are categorical rather than being based on a continuous scale, this is often the case in the CDMSS context.

Bayesian Procedures

A program for profile pattern analysis using initial Maximum Likelihood estimates with the option of adjusting for the prior probability (incidence) and cost of error has been written. This has been developed and tested in a variety of contexts at Surrey University including Offender Profiling and Diagnostic Radiology.

Non-Linear Neural Networks

Programs have been written to generate predictions based upon a number of neural network algorithms. In principal these methods are extremely flexible as they are essentially assumption free. The programs written for CDMS-ADS include Backpropogation and Adaptive Resonance procedures. These have been tested in a variety of contexts at Surrey University including Suicide Risk, Diagnostic Radiology and Criterion Referenced Testing.

4.3. Computerised Assessment System (CAS)

A major advance in the use of computers in Psychiatry and Psychology is in the area of computerised administration and scoring of assessment procedures. CDMSS offers this facility which has the benefit of immediate, graphics-supported, scoring and feedback of psychometric tests and interview schedules. In addition, when tests are administered by the computer, the storage of psychometric data can be done directly as it is collected without requiring an intermediate paper and pencil form (although the system allows the tester to print out the item responses).
The CDMS-CAS system is a shell into which a variety of tests may be installed. At the moment the addition of new tests is not automated although this facility is currently under development. So far a number of demonstration administrations exist including the Nurse Observation Schedule and ICD10 symptoms for personality disorders.

The CDMSS-CAS facility will be linked directly into the CDMSS data base so that tests that have been taken by a particular patient and stored in the CDMSS data banks can be instantaneously accessed and scored and the results presented to the screen and/or attached printer. At the moment the CDMS-CAS facility includes a demonstration scoring system for the MMPI which provides profiles of psychiatric status and personality disorder.

It is necessary that copyright problems are dealt with before tests can be added to the system but any suggestions or requests for certain tests or schedules will be considered by the CDMSS team.

4.4. Research Support System (RSS)

Easy access to large amounts of clinically relevant data should greatly facilitate research at Broadmoor. CDMSS will provide the extra facility of a sophisticated menu driven data analysis module directly linked to the data base. This will allow clinicians and researchers to examine hypotheses and research questions rapidly and directly without having to generate specific stand-alone data sets.

4.4. Research Support System (RSS) (cont)

The types of analysis available through this data analyses system (CDMS-RSS) range from simple descriptive statistics through to more sophisticated multivariate procedures. Many of the procedures in CDMS-RSS are not available on the commonly used computer packages such as SPSS, CSS and SYSTAT and they have been included specifically for psychological and psychiatric research. Thus, modules exist for profile analysis, IRT parameter estimation and non-metric multidimensional scaling.
It is envisaged that the CDMS-RSS will be a flexible and expandable system. Attempts will be made to accommodate any suggestions or requests for particular data analytic procedures that are not available on the system. It is hoped that these will be added to the available modules.

At the present the bridging between the CDMSS data base and the CDMS-RSS is not complete. However, the modules that we have written and tested so far include the following:-

**Descriptive Statistics.**
Central Tendency, Dispersion, Skew and Kurtosis, Distribution fitting.

**Simple tests of group difference**
ANOVA, Students t, Mann-Whitney, Wilcoxon, Freidman, Kruskal-Wallis, Kolmogorov-Smirnov, Chi-Squared, Cochran etc.

**Multivariate tests of group difference**
Multiple Discriminant Function Analysis, MANOVA, Non-Parametric MANOVA, Correspondence Analysis etc.

**Simple measures of association**
Pearson-Bravais Correlations, Polychoric and Tetrachoric estimates, Non parametric correlations including Guttman s, Goodman-Kruskal, Kendal.

**Multivariate Correlational Procedures**
Multiple Regression (including Stepwise and Ridge regression), Canonical Variate Analysis, Factor Analyses (including PC, PFA, ML, GLS, ULS, VSS, Alpha, Multiple Group and non-parametric procedures with orthogonal and oblique rotation).

**Multidimensional Scaling Procedures**
Metric MDS, Rank-Image Permutation, Monotonic Regression, Polynomial Regression.
Profile Analyses
Configural Frequency Analysis, Latent Class Analysis, Partial Order Scalogram Analysis, Multiple Scalogram Analysis.

Psychometric Analyses
Classical Reliability Estimation, Item Analysis, Rasch Model Fitting, Two and Three parameter model fitting, Guttman Scaling, Stochastic Cumulative Scaling.

When fully developed, CDMS-RSS will run in the WINDOWS environment and will have a full graphics capacity. The modules will only be available as a bolt-on to CDMSS.

4.5 DEMIS (Drug and Event Monitoring Information System)
The importance of recording and evaluating the impact of events on a patient’s progress has led to the development of a programme derived from the collaboration between Rampton Hospital (Mr Bernard Huckstep, Head Pharmacist), Broadmoor CDMSS and Database plc called DEMIS. This is an important adjunct to clinical decision making generally, especially in relation to medication records, and risk assessment particularly, in itemizing episodes relevant to the risk type. It was decided by the development group to attempt to replicate the power of the DEMIS system within a customised EQUINOX package. This is currently being developed by Mr D Bishopp in collaboration with Mr R Webster, IT manager, and Mr R Churcher, Compsoft consultant.

EVENT MENU
Events have included within an EVENT MENU the following:


External movement monitoring Rehab Trip: Hospital: Court: Compassionate:
OWP: Day Centre: Coach open/closed

Internal movement monitoring: Tribunal: Ward Change: Social: Sportsfield: Gym:
Shop: Hairdresser: Church: Visits


4.6 Read Codes/ICD 10
CDMS has been represented on READ Code developments nationally. Read Codes are used by the majority of computerised General Practices and an increasing number of hospitals in the UK. They are to be the principal coding system for Scotland in primary and secondary care, and there is considerable international interest in their use. Hospital uses include clinical audit, casemix applications and HISS implementations. They enable clinical records to be coded and stored in computer systems, from which data can be retrieved to support direct care. They are used for statistical purposes eg planning, epidemiology, and management of resources, using translations(mappings) to the standard classification of ICD (International Classification of Diseases) and OPCS-4 (Office of Population Censuses & Survey Classification of Surgical Operations and Procedures).

The Codes exist only in computer readable form. They need to be implemented in an application in order to be used. Read Codes are Crown Copyright. They are distributed via a licensing system administered by Computer Aided Medical Systems Ltd (CAMS) who also provide advice, training and support to end users and developers.

The Department of Health recommends that the full set of casenotes should provide the information source for the process of clinical coding. CDMS recommends that hospital strategic planning uses data coded mapping with Read Codes for market analysis, the development of service strategies, planning facilities, preparing business cases and to support financial modelling. That Read codes are implemented within the clinical information system development as central to the clinical management of patients. That it supports the regular review of all decisions affecting patient care taken by the clinical team. This includes the review of the appropriateness of treatment and its effectiveness.
Coded clinical data is regarded as at the heart of the financial future for Provider units to cost activity and generate bill associated with contract work. Coded clinical data is required by purchasers to monitor the care of their individual patients and patient populations, to monitor contracts for conformance with specification and to reconcile invoices with received activity.

The Tenth revision of ICD(ICD-10) will be mandatory in contract minimum data sets and central returns in the NHS in England on 1 April 1995.

5. Summary of Achievements
The basic CDMSS prototype database has been completed (cf. appendix 1). This has involved:

* identifying the relevant variables for each discipline
* constructing the screens and the database structure
* creating user friendly interface with the database
* importing the Patient Administration System demographics thus merging PAS and CDMS
* developing the algorithms for RSS, ADS and CAS facilities
* preparing the links with Read Codes/ICD 10
* collaborating with Security on security profiles and risk assessment strategy
* collaborating on the monitoring of events in patient's management
* completing links with Seclusion monitoring and Pharmacy database.
* complete setting up prototype wards (Abingdon and Dover)
6. THE WAY AHEAD
Integration
Quality standards
Copyright
System security
Risk assessment and management
Outcome research analysis
Neural networks and prediction
Clinical auditing
Epilogue

6.1 Integration
Integration of the parts will be required to bring together the various sub-developments into one integrated application. Output reports summarising the information which each discipline would wish to produce for clinical team decision making will become the principal focus of CDMSS developments.

This will be achieved by continued collaboration with the disciplines in meeting their specified needs and through sophisticated computer programme development create a compatible structure accessing several software programmes.

Integration with Broadmoor Hospital network by making the system available across the hospital. This will entail integration with the current hospital network. This will be achieved by close collaboration with the IT department who have ultimate responsibility for the hospital network and its maintenance.

6.2 Reliability and Quality assurance
Standards will be established to ensure that the prototype is tested and modified to clear any run-time bugs and to test the system for reliability. In addition, the system may need to be modified to ascertain that data capture is of optimal reliability. This aim will be achieved through the dedicated work of a computer programme developer.
6.3. Copyright issues

The copyright of any software development will remain with Broadmoor Hospital Health Service Authority. According to the Copyright, Designs and Patents Act 1988, a computer program counts as a literary work (e.g., a book). In a response to an enquiry by the SHSA IT Steering Committee, the following advice was offered:

Copyright does not subsist in a literary, dramatic or musical work unless and until it is recorded, in writing or otherwise: the date of first publication is the date on which the author of copyright material presents the material to members of the public.

In the case of Crown copyright material, "where a work is made by Her Majesty or by an officer or servant of the crown in the course of his duties...Her Majesty is the first owner of any copyright in the work"; where the material is not Crown copyright, "where a literary, dramatic, musical or artistic work is made by an employee in the course of his employment, his employer is the first owner of any copyright in the work subject to any agreement to the contrary". Because "the author of a work is the first owner of any copyright in it", if a work is commissioned from somebody outside the employ of the Crown or the commissioner, copyright automatically belongs to the person from whom the work has been commissioned. A written agreement is required, if copyright is to belong to the Crown.

If one takes a modular approach to the development of software, the copyright date may differ on each module. Once the modules are put together, to build a complete system, this may have a further copyright date. *(Reitler P Copyright and Licensing Officer, IMG ME B1: Information Management Group: NHS Management Executive, Department of Health, 1992.)*

6.4 System security

**Security of the system is vitally important.** It should be part of the overall IT Strategy for the hospital which ensures the security of the system from "hackers", saboteurs, and "moles" deciding who has access to what information, write or read, the monitoring of its use, conforming to statutory and SHSA regulations. All information processing systems in NHS and allied bodies should be protected to an adequate level from all likely events which may jeopardise health care activities. Such events will include accidents as well as behaviour deliberately designed to cause
difficulties. Confidentiality must be addressed by which data access is confined to those with specified authority to view the data. The integrity of the system must be ensured insofar as the system is operating correctly according to the specification and in the way the current users believe it to be operating.

Issues of availability must be addressed to ensure that data output is delivered to the point where it is needed, when it is needed.

The dangers have been identified as:

* Unauthorised disclosure of information
* Accidental or malicious modification of the system
* Denial of access to the information
* Destruction of the system or information

The number of systems will become widespread, the application so widely intertwined with the clinical care of patients and networked to other sites, that they are likely to become dangerously exposed to both internal and external misfortune or attack.

Risk analysis is required. It is necessary to find some formal method of assessing the risks and of selecting relevant security methods. The object of Risk Analysis is to review the risks and then select a balanced and appropriate set of security counter measures. It is clearly stated in CAG 47/92 that responsibility for the security of the system lies with Clinical and General Management and should be treated as an organisational issue rather than merely an IT issue.

The most notable UK Acts with a relevance to CDMS are

- The Data Protection Act, 1984
- Copyright, Designs and Patents Act 1988
- Computer Misuse Act 1990
- Access to records Act 1987
6.5 Risk Assessment

The role of the system in the area of risk assessment will be investigated further. This will involve actuarial research into the relevant predictors of a variety of risks within the Special Hospital setting. An investigation into the most useful manner in which the CDMSS could present information in this context will be carried out.

Essential research and development is required to advance the analysis of patients' offending and dangerous behaviour and to produce a standardised approach. Risk decisions depend on the careful itemization of previous incidents, the identification of the relevant features and a functional analysis of the underlying motivations. Such an analysis will facilitate more reliable risk assessments and constructive treatment targets. The Home Office (C3) guidelines on discharge decisions also support such an approach.

Outcome Assessment and Research Support Procedures

There is clear need to support the hospital in achieving its objectives and meet the needs of purchasers in the provision of measurable treatment and care of their patients. This will require the development of treatment outcome measures. The assessment and research support facilities will be developed according to this need. This will involve an investigation of the requirement of the users and the integrations of these requirements into CDMSS.

Actuarial Analyses

The development of statistical and actuarial models linking existing data to potential outcomes. This will involve ongoing research using data as it is collected for CDMSS. The starting point will involve a number of data sets currently developed in the department of psychology.

6.7 Neural networks and clinical prediction

To inform decision making, the information in the CDMS system should be accessible to statistical analysis in order, ultimately, to allow the development of probabilistic prediction models (linear and logistic regression) with particular reference to clinical prediction and risk assessment. Dr Hammond is pioneering the application of artificial neural network technology to clinical prediction within the context of the assessment of dangerousness and recidivistic
behaviour of mentally disordered patients. He presented a paper at a psychometric conference in Germany on the topic (Hammond and McGinley, 1995)

6.8 Applications in Clinical Audit

As Read Codes and ICD 10 become mandatory, it is essential to continue with the mapping exercises. As clinical audit is an important and necessary function within the hospital, it would be supported by the standardisation of assessments and classification and coding of data inherent to CDMSS. A recent executive Audit Commission briefing emphasised the need for integrated information systems to support clinical decision making, to monitor clinical performance and to evaluate business performance (management and contacting. It stresses the requirement that information systems must deliver benefits to patient care. This comment reflect the precise mission statement of CDMS, which is worth repeating to end this paper:

To enhance the quality of life for our patients by advancing the clinical decision making potential of the members of the clinical team in their duty of care, and thereby improving direct patient contact time.

C. Critical evaluation of current status of the project.

The critique will conclude by examining how far the adopted strategy was properly evaluated in terms of comparisons with alternative and available systems, how far it met the aims of the institution who authorised its inception. Were major difficulties encountered and were they fully resolved? Has it been successfully implemented? Was enough attention paid to the psychological processes implicated in innovation and change?

1. Lack of comparable models

Research indicated a complete dearth of current functioning clinical information systems which met the specifications for a new clinical information system as laid down by the Special Health Authority. It had already been decided that new developments would be constructed around a prototype model, which, by definition, implied in-house construction based on the user requirements of the clinicians in the hospital. There were systems in existence which coped with
the data collection of patient demographics, GP based systems and various hospital based computerised auditing procedures. There were no systems to support the clinical decision making process in general medicine or forensic psychiatric care. The development of risk assessment strategies to demonstrate the usefulness of the clinical decision making support system was in advance of the current clamour for such systems and schedules. The innovative quality of the Broadmoor CDMS system was the early conceptualisation and introduction of risk assessment strategies to meet the needs of clinical and security departments.

2. The need for constructive project management.

The credit for the vision underlying the inception of the clinical information systems rests with the IT development group at the headquarters of the Special Hospitals Service Authority who funded each project across the three special hospital sites. The local management authority in each of the hospitals did not immediately foresee the growing importance of clinical information systems until the current, mandatory demands for clinical auditing and standardised risk assessment/management procedures grew in importance. The development group were unable to pursue mature project management as the budget for each financial year was never guaranteed. Therefore, despite the presentation of project development reports and bids, progress was constantly thwarted. The CDMSS project lacked competent project management and required skills and training beyond the clinical and computer skills of the clinical project leaders. 

The function of project management is to foresee or predict as many of the dangers and problems as possible and to plan, organise and control activities so that the project is completed successfully in spite of the risks. This process starts before any resources are committed and must continue until all work is finished. The aim is for the final result to satisfy the project sponsor or purchaser, within the promised timescale and without using more money and other resources than those which were originally set aside or budgeted for (Lock, 1994, pp.1-2). The lack of project management skills and executive authority on the part of the project coordinator would account for the serious delays in development. Efficient project management would have anticipated serious problems. Many of them had in fact been foreseen by the project team but who lacked executive control to resolve them. In particular, it had been identified that the capacity of the software platform on which the development was based would not accommodate the complexity of the interrelationships inherent in the data being collected. The CDMSS project
team were not in a position to choose software which met their identified needs but had to conform to earlier IT policy decisions of hospital.

3. **Accommodating technological change**
The importance of the staff attitudes to the introduction of information technology to facilitate and advance clinical practices was recognised from the outset. The reason for choosing an inhouse, prototypical approach, based on dynamic consultation, was to deliberately avoid imposing a new system on staff. As the system was to be based on the assessment schedules and professional practices of the various disciplines represented in clinical teams, total collaboration was essential. Despite early gains in training and programme development, the momentum was lost. Perhaps not enough attention was paid to the need for direct action in affecting and accommodating innovation in an organisation. The project would have benefitted from applying the principles inherent in total quality management, emphasising not only the importance of training in professional and technical skills, but training in the management process itself (Atkinson, 1990). Human resistance to change was an additional factor which was recognised but perhaps not properly managed. Frequently, management is unaware of the full impact of technological change on staff (Johnston et al, 1990). The social interactions which inevitably would change with technological innovation could have been more effectively managed.

With the introduction of a new operational structure within Broadmoor and the appointment of new clinical unit managers, the future of the project was reviewed. It was agreed, that although the early enthusiasm had been lost, the project remained on the correct lines and offered the best hope of an effective computerised clinical decision making support system to advance standardised assessments for outcome measures of treatment effectiveness, clinical auditing, risk assessment and management procedures. Management and clinicians have reclaimed joint ownership of the project. Internal hospital funding has been guaranteed. Full time personnel are in post. Expert consultancy has been negotiated. Staff attitudes to the use of information technology to enhance clinical practice are very positive, keeping pace with the acceleration of IT developments in every facet of every day life. It is vital to the success of CDMSS that a role is created for a project manager with the appropriate training otherwise the mistakes of the past will revisited.
Epilogue

Senior hospital management are currently working to ensure the successful implementation of the development of the Clinical Decision Making Support System. As the hospital moves ahead to new frontiers in the care and treatment of mentally disordered offenders, the need for a well constructed clinical information system has never been in greater demand. It is the author's hope that the work of the past few years will bear fruit in the shape of an integrated system which will supply the needs of management and clinicians as they become more accountable for the "risky" decisions which are endemic to forensic psychology and psychiatry.
REFERENCES


Computer Aided Medical Systems Ltd (CAMS)


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Lambley, RF., Darling, RE. and Smith, DC.(1990) *Stars Research Project*. East Suffolk Authority and Suffolk County Council Social Services Department.


Read Codes (1992) *Clinical terms project*. NHS Centre for coding and classification (Dr J Read, Director). National Health Service Management Executive and the Department of Health.


SECTION FOUR: RESEARCH

BROADMOOR MMPI PD SCALES 1960-93
A PSYCHOMETRIC STUDY

Copyright: John D McGinley: 1995
SECTION FOUR: Research audit.

Broadmoor MMPI PD Scales (1960-1993) I: A psychometric study

1. Introduction

1.1 Personality assessment at Broadmoor Hospital

Clinical psychologists have been assessing the personalities of mentally disordered offender patients at Broadmoor Hospital by means of the Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway and McKinley (1943)) since 1960. Due to the nature of their disorder, many patients could not comply with the assessment, while others did not validly complete it. The remaining validly completed tests have been extracted from the psychology department files and the corresponding item data has been reliably compiled into one single computerised database by a professional data processor. This study was based on a sample size of 2855 profiles. This is the first of a two-part investigation into the personality profiles of mentally disordered offender patients based on MMPI results. This study will test the reliability of the psychometric properties of the MMPI instrument and its internal consistency in order to gauge the level of confidence to be given to the clinical inferences and relevance of the data to be studied in the follow up study - Broadmoor MMPI PD scales (1960-1995): clinical study. This latter study will address current questions such as the relationship of personality disorders to the legal concept of psychopathy, the relationship of premorbid personality to dangerousness and recidivism, the treatability of psychopathy, if it is linked to personality disorders, and which disorders are most amenable to treatment. Despite the severe criticisms levelled at the MMPI clinical scales, there is sufficient evidence to support the continued use of some of the MMPI content scales. The MMPI PD scales (Morey et al, 1985) are content scales. Their purpose was to support the diagnosis of personality disorders as defined in DSM III (APA, 1980) and to assist in the formulation of appropriate treatment interventions. This study will investigate the reliability of the MMPI PD scales with mentally disordered offenders in the context of high secure psychiatric services at Broadmoor Hospital.
1.2 Personality disorder and psychopathy

Broadmoor Hospital is a specially constituted health authority (NHS Act 1977) for the care and treatment of people who have been involuntarily committed to the highest form of physical security under the Mental Health Act (1983). Patients will have been classified by psychiatric assessment, generally endorsed by the courts, to be suffering from a mental disorder under three categories - mental illness, psychopathic disorder and mental impairment. Their behaviour has been judged to pose a serious threat to the safety of others and themselves. The retention of the administrative category of psychopathic disorder in the Mental Health Act 1983 was described by Blackburn (1992) as the perpetuation of a pernicious nonsense (p. 66). He argued that the notion of psychopathic disorder or antisocial personality is misleading because it focuses on socially deviant or criminal behaviour rather than personality disorder of which this may be a function, and obscures the heterogeneity of personality disorders among the antisocial. In the case of psychopathy, it is also required that the condition is amenable to treatment, sometimes referred to as "the treatability clause" of the Mental Health (83) Act. The legal criterion is that treatment "is likely to alleviate or prevent a deterioration of his condition" (Mental Health Act 1983: 1-07(b)). Clinical judgments of treatability have been shown to be unreliable, and few differences have been found between offenders judged treatable and those regarded as untreatable (Dell and Robertson, 1988: Collins, 1991: Blackburn, 1995). Many clinicians maintain that psychopaths are untreatable. This belief rests more on anecdote than empirical evidence, and recent reviewers conclude that despite the large number of reports on the treatment of psychopaths, too few meet basic methodological requirements to merit any firm conclusions (Blackburn, 1993; Dolan and Coid, 1993). Persisting problems are the vague use of the term "psychopath", and lack of attention to the heterogeneity of populations identified as psychopathic or violent. The fact that the term "psychopathic deviate" is a legal term, with no clear clinical equivalent, has created serious problems for admission and treatment. Recent notions of psychopathy have developed with little reference to personality theory or to the classification of personality disorders. According to Blackburn (1993), Karpman (1949) and Cleckley (1976) saw the latter as unnecessary. This view is not reflected in the DSM-III classification, and the relationship between the concept of psychopathic personality and the classes of personality disorder needs to be clarified.
1.3 DSM III: Axis II personality disorders

Many of the diagnostic categories currently in use in the mental health field are based on the classification systems of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (APA 1994) of the American Psychiatric Association and the International Classification of Diseases (ICD-10)(WHO 1990) of the World Health Organisation. This paper focuses on the disorders classified under axis II of the multiaxial DSM III and IV series ie., the personality disorders. The introduction of the multiaxial DSM-III (1980) established personality disorders as independent diagnostic entities on Axis II. Loranger (1990) found that the number of personality disorders diagnosed more than doubled after the introduction of DSM-III. With the new attention given to personality disorder, there has been a proliferation of research devoted to issues of assessment of personality disorders.

Personality disorders are considered to be based on personality traits and behaviours that are more enduring than symptoms associated with mental illnesses. A personality disorder may be conceptualized as a pattern of traits that have become intensified or exaggerated to the point of being dysfunctional. Personality traits are defined as *enduring patterns of perceiving, relating to, and thinking about the environment and oneself, and are exhibited in a wide range of important social and personal contexts. It is only when personality traits are inflexible and maladaptive and cause either significant impairment or subjective distress that they constitute Personality Disorders. The essential feature of a Personality Disorder is an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual’s culture and is manifested in at least two areas: cognitions, affectivity, interpersonal functioning, or impulse control. (DSM IV, (APA 1994, page 630.)*

Traits themselves may be consequences of the specialised use of defence or coping strategies that develop relatively early in life dealing with stress (Levitt and Waddell, in press; Millon, 1987).
Semi-structured interview schedules have been developed for diagnosing personality disorders. The most productive ones are the Personality Disorder Examination (PDE) (Loranger, et al. 1987), the Personality Disorder Questionnaire (PDQ) (Hyler et al., 1988)), and the structured interview for DSM-III Personality Disorders (SCID) (Stangl et al, 1985).

Following the viability of the use of objective personality inventories, many recent instruments are currently being tested and revised. Among these are the MCMI (Millon, 1983), the Personality Assessment Instrument (PAI) Morey (1991), the NEO-PI R (Costa and MacCrae (1992), and the MMPI personality disorder scales (Morey et al, 1985).

1.4 MMPI PD

The MMPI has been used in Broadmoor Hospital by clinical psychologists since 1960 to assess the personalities of mentally disordered offender patients. It was decided to test out the psychometric properties of the MMPI PD Morey scales (Morey et al, 1985), as they applied to this population. According to O'Maille and Fine (1995), no known studies have been done to evaluate the psychometric properties of existing personality disorder instruments in forensic settings.

The original clinical scales of the MMPI represent clinical entities which are obsolete from a taxonomy standpoint (e.g., psychasthenia), but the MMPI itself contains a rich item pool which continues to be pertinent to present day nosology (Morey et al, 1985: Levitt and Gotts, 1995).

The original MMPI clinical scales imply that the instrument was intended to measure clinical syndromes and not personality disorders. Subsequent research has made it clear that the MMPI item pool is equal to measuring far more than was called for by the nosology of its time (Dahlstrom and Welsh, 1960; Dahlstrom et al., 1972, 1975). Yet attempts to bring MMPI items to bear on the specific DSM-based personality categories have been few (Morey, Waugh and Blashfield, 1985; Zarrella, Schuerger and Ritz, 1990: Levitt and Gotts, 1995). Although it has been suggested by Levitt and Gotts (1995) that there was a studied avoidance of this issue by the MMPI-2 restandardization group (Butcher et al, 1989; Graham, 1987, 1990), developments are underway (Ben-Porath, 1995). Millon (1989) developed his own personality inventory and
applied it to personality disorders and dismissed the MMPI as a possible source of either items or special scales. The present paper is based on the belief that the MMPI item pool has relevance for measuring Axis II disorders, within the DSM series.

In DSM III, disorders of personality were set apart from clinical syndromes such as schizophrenia and affective disorder, and are seen as qualitatively different from these disorders in many ways. Personality disorders are prototype entities rather than discreet categories. They are more akin to oblique factors than to orthogonal solutions. The criteria presented in DSM as discreetly identifying the presence of a disorder are in fact overlapping. This overlap is acknowledged in DSM-III-R: "the aim is to find a single, specific personality disorder that adequately describes the person's disturbed personality. Frequently this can be done only with difficulty since many people exhibit traits that are not limited to a single personality disorder" (APA, 1987, p. 336). Additional acknowledgement is furnished by the cluster system of DSM III in which disorders with similar traits are arranged in three groups. To address this overlap, Levitt and Gotts (1995) suggest that MMPI special scales must be supplemented by use of specific MMPI item sets. These item sets can be selected in consideration of DSM III criteria that are under represented by the special scales. This study will focus on the refinement of special MMPI item sets already developed by Morey et al (1985) as they apply to the mentally disordered offender group in the UK and test their psychometric qualities.

1.5 Personality assessment and psychological tests

The field of personality assessment as an organised scientific discipline is less than a century old. Over the past two decades, personality assessors have been developing new measures and practical procedures for evaluating personality in applied settings. Clinical assessment accounts for the greatest use of personality tests and appears to becoming a more respected and engaging task for clinicians (Butcher, 1995). Psychological tests are more frequently requested and admitted in evidence in court today than they were a decade ago (Pope, Butcher and Seelen, 1993).

Personality assessments are essential for treatment planning, assessing dangerousness and treatability with mentally disordered patients. Ultimately clinical judgement rests on the insight
and experience of the clinician but these insights should be supported by an objective assessment system. Speilberger (1992) recently discussed the decline in interest in assessment that began in the 1960's. As reported by Megargee and Speilberger (1992) and Exner (1995), these included a growing emphasis on teaching behavioural treatment approaches in academic courses, an increase in the use of psychotropic medication, a change of focus from syndromes and personality structure to symptoms, professional time constraints resulting in a preference for brief screening methods over full battery assessments, and the questioning of the utility of assessment for treatment planning purposes.

However, both Watkins (1991) and Speilberger (1992) have also observed a "growing Renaissance in psychological assessment throughout the world" (Speilberger, 1992, p. 6) during the past ten years. From his review of psychological assessment surveys conducted over the past 30 years, Watkins (1991) concluded that psychological assessment has long been, and continues to have, a highly and clearly important role in psychological training and practice. There is a growing membership in assessment-oriented organizations (e.g., the Society for Personality Assessment, the International Society for the Study of Personality Disorders) and number of related conferences. Weiner (1992) also noted how psychodiagnostic assessment has rebounded as a field of study during the past 15 years.

This observed resurgence of appreciation for psychological test based assessment coincides with changes and new demands in the health care fields in which psychological services are provided (Lambert, 1994). This includes quality improvement criteria and total quality management systems in which, through auditing procedures, outcome measures and effectiveness of interventions has assumed paramount importance (Maruish 1990). Although current developments in the management of the health care system may be instigated from political ideology rather than a drive to accommodate patient needs, it has provided psychologists with an ideal opportunity to both capitalise on their skills and contribute to the development of an effective model of mental health care delivery and the marketing of maximum efficiency (Schulman, 1989; Cummings, 1992; Maruish, 1994).
Generally, clinical assessment, of which testing should be considered an integral part, may be viewed as "..the process by which clinicians gain understanding of the patient necessary for making informed decisions" (Korchin, 1976, p. 124). Despite the provision of operational criteria for each disorder of personality, the reliability of clinical judgements of personality disorder remains low (Mellsop et al., 1982). According to Korchin and Shuldbeg (1981), the basic justification for assessment is that it provides information of value to the planning, execution, and evaluation of treatment - areas of crucial importance in the new health care environment. It is regarded by many that the skills employed in psychological testing will be greatly valued, especially self-administered, multidimensional, and problem oriented scales, as well as data gathering instruments that can quickly and effectively highlight the problems requiring attention. In addition, psychometrically sound self-report measures, sensitive to changes in psychological disturbance and administered in pre- and post-treatment fashion, will meet health care trusts organizational needs to demonstrate treatment effectiveness (Maruish, 1990) and, therefore, value for money.

The important aspect of psychological testing is its ability to provide standardization to treatment planning, outcome assessment and auditing procedures in service delivery. Improved reliability has been achieved by the development of questionnaires, rating scales and structured interviews. (Wideger and Frances, 1987).

Some have raised objections to the use of psychological testing in treatment planning. Choca, Shanley, and Van Denberg (1992) claim that it interferes with the therapeutic process. However, the overwhelming weight of the current research literature supports its use (Speilberger, 1992; Weiner, 1992). Watkin's (1991) review of the literature indicated that tests were chiefly used to supply information about a patient's personality structure, psychological needs and for diagnostic purposes. Butcher (1990) maintains that psychological assessments with standard instruments such as the Minnesota Multiphasic Personality Inventory (MMPI and MMPI-2) have two aims. Firstly, in treatment planning, they will assist in the development of a plan which will have internal consistency with the personality and external resources of the patient, and secondly, in therapeutic terms, they have the potential for allowing the patient to find out more about himself/herself and thus facilitating the therapeutic alliance and communication.
The importance of psychological tests in screening for psychiatric disorders has been stressed by Derogatis and DellaPietra (1994). Fundamental to a realistic approach to the psychometric basis for psychiatric screening is the realization that we are dealing with psychological measurement of a hypothetical construct. By contrast, measurement in the physical sciences usually concerns tangible entities, which are measured via ratio scales with true zeros, equal intervals and ratios throughout the scale continuum.

In quantifying hypothetical constructs (eg., anxiety, depression, impulsivity, anger), measurement occurs on ordinal-approaching-interval scales, which of necessity are more primitive and have substantially larger errors of measurement (Luce & Narens 1987). Psychological measurement is no less scientific but is less precise.

Although advocates and adherents argue the different merits of self-report versus clinician ratings, a great deal of evidence suggests that the two techniques have strengths and weaknesses of roughly the same magnitude. Neither approach can be said to function generally more effectively than the other in screening for psychiatric disorder. Each screening must be assessed and evaluated separately. Both approaches lend themselves to actuarial and quantitative methods, which allow for a normative framework to be established within which to evaluate individuals.

Psychological tests are used in three ways:
a) to determine a clinical diagnosis,
b) to assess the frequency and intensity of transitory states, 
c) to assess enduring traits that predict future behaviour or symptoms.

The use of psychological tests for obtaining information about symptoms and patterns that may be checked against diagnostic criteria outlined in DSM-IV or ICD 10, has limitations, largely arising from the fact that diagnostic labels reflect conceptual, rather than actual entities. The criteria of disorders in DSM IV and ICD 10 represent a consensual opinion of a committee of psychiatric and psychological experts as to whether a given pattern of symptoms should be accorded the status of a socially viable syndrome or disorder. However, the committees, or working parties, have excluded empirical information about patient dimensions (eg., coping
styles, resistance, conflicts etc) that have been associated with differential responses to various psychosocial treatments. Recognising the limitations that exist when only procedures advocated by a single theory are selected for use, there has emerged, in recent years, a strong movement toward technical eclecticism among practitioners and researchers (Arkowitz 1992). The MMPI/2, because it is more sensitive to detecting patient personality traits (Butcher, 1990), may be more serviceable for determining trait like coping styles and resistance potential than in assessing symptom severity.

All measures of outcome have weaknesses but using measures that have a history of frequent use will provide advantages that are not available with new or little known measures. Lambert (1983) summarised outcome measures used most frequently in the Journal of Consulting and Clinical psychology between 1976-1980. The MMPI was among the most frequently used. And in a more recent review by Lambert and McRoberts (1993) of 116 studies of psychotherapy outcome, the MMPI remained among the most popular.

1.7 The MMPI: clinical scales

The MMPI is a 556-item true-false, self report, personality questionnaire developed in the 1930s and early 1940s as a diagnostic aid for psychiatric and medical screening (Dahlstrom, Welsh & Dahlstrom, 1972, 1975; Graham, 1977; Greene, 1980). It was developed to provide an objective means to diagnose psychopathology (Hathaway and McKinley 1940) and it quickly became the most widely used and researched objective, abnormal personality inventory. The test originators, Starke Hathaway and JC. McKinley, developed the personality questionnaire using empirical scale construction methods. The scales, which focus on abnormal behaviour and symptoms, such as depression and schizophrenia, were constructed by contrasting item responses of various patient groups with those of a sample of non-psychiatric (normal or normative) individuals.

Data for the original normative sample of 724 subjects (Hathaway and McKinley, 1940) and the so-called refined sample of 541 subjects (Hathaway and Briggs, 1957) were collected before 1940. An attempt at renorming was carried out at the Mayo Clinic in Minnesota (Colligan, Osborn, Swenson and Offord, 1983, 1989). No items were dropped or altered in this project. The most recent restandardisation of the MMPI resulted in the MMPI-2 (Butcher, Dahlstrom,
Graham, Tellegen and Kaemmer (1989). In MMPI-2, 90 of the original items were discarded, 70 were altered and 107 new items were added (Butcher et al, 1989; Levitt, 1990). The normative group for MMPI-2 consisted of 2600 subjects who were selected to be representative of the United States (Butcher et al, 1989). This group matched U.S. census data for age, ethnicity, and marital status, but was above census data on education and occupation. It consisted of adults who ranged in age from 18 to 89 years. The scales are compared to either men or women in the normative sample, because there are effects of gender on a number of scales.

Despite the item amendments that constitute the revised version of the MMPI, the original clinical scales survived almost intact (Butcher, Dahlstrom, Graham, Tellegen and Kaemer, 1989). This continuity between the original MMPI and its revision was the intent of the revision committee (Graham, 1990). An obvious inference is that research conclusions derived from the original MMPI apply to MMPI-2. However, it can also be inferred that most of the criticisms of the original MMPI clinical scales apply as well to the clinical scales of MMPI-2 (Duckworth and Levitt, 1994). Research on the validity of the original MMPI is so prolific that it defies summarization. It has been estimated that there are over 10,000 studies on the MMPI. A number of general MMPI references can provide an overview of this research (Dahlstrom et al 1975; Friedman et al 1989; Graham 1987; Greene 1988, 1991; Levitt and Gotts, 1995). The MMPI/MMPI 2 is generally regarded as a psychometrically sound instrument for assessing personality functioning (Archer, 1992; Nichols, 1992). It is particularly important in forensic setting to be able to justify the use of psychological instruments and the validity and reliability of their application to the subject whose case is being heard in court, and whose future partly depends on psychological evidence. (Weiner, 1995). Therefore adequate normative data to support clinical applications of psychological tests are required. There is no proof that the original normative data can be validly applied to mentally disordered offenders. This study sets out to create a normative data base for mentally disordered offenders and allow comparisons to be made with the original normative data base which will have a bearing on interpretation.
For many reasons, the MMPI, the most widely used test in clinical practice in the United States (Lubin et al 1984) has apparently become the favoured personality instrument for evaluating individuals in forensic settings.

Although the MMPI has been widely used as an objective assessment of personality, it is vulnerable on many points which have been summarised by Faschingbauer(1979) and Levitt and Duckworth (1984). As early as 1946, Weiner and Harmon (1946) observed that there are two types of statements in the MMPI clinical scales: obvious and subtle. An obvious item is one for which the psychopathological or diagnostic response is clear as, for example, responding true to the statement *Life is a strain for me much of the time.* A subtle item is one for which there is no response that is keyed for psychopathology as, for example, *I like Alice in Wonderland by Lewis Carroll.* Every relevant investigation has shown that the correlations between the obvious and subtle subsections of the clinical scales range from zero to low negative, a mathematical argument for dimensional independence. Summing these unrelated subsets into a single score can only be a "cancellation approach" to scale scores (Norman, 1972: Faschingbauer, 1979).

The obvious-subtle differential is not the only criticism that has been levelled at MMPI clinical scales. Faschingbauer(1979) described them as heterogeneous, redundant, and overlapping. Over 100 items are not even scored. How much potentially useful information never enters the code type as a result is still unknown.

Faschingbauer is in essential agreement with Norman (1972) who pointed out that the clinical scales are not only *inefficient, redundant, and largely irrelevant for their purposes* (p. 64), but also the MMPI methods of *combining scale scores and for profile interpretation are unconscionable cumbersome and obtuse.* Norman summed up by noting that it is abundantly clear that they are about as inappropriate and maladapted a set as one could imagine for their current uses in profile analysis, and interpretation and typal class definition (p.64). Archer and Krishnamurthy (1993) theorize that the general absence of correlation between the MMPI and the Rorschach *could be the result of the multidimensional nature of most of the basic MMPI clinical scales* (p. 286).
Wiggins (1966), commenting on the heterogeneity of the clinical scales, remarked that the "...hodgepodge of content which contributes to a high score on a given clinical scale is not suggestive of any consistent personality trait or structure" (p. 31). Graham (1987) listed 44 interpretative statements that can accompany a high score on scale 4, plus 16 statements that follow from low scores. Clopton (1979) pointed out the obvious: respondents endorsing very different subsets of items can obtain the same raw score on any scale.

The MMPI is criterion referenced and the criteria have been derived from American Hospitals. The normal reference group on which the scales are based is too small to be considered a normative sample (Anastasi 1990). The cultural bias is apparent but has not been taken very seriously (Gynther 1972; Butcher and Pancheri 1976; Dahlstrom and Dahlstrom 1980; Dana 1988). The content of the scales is not necessarily consistent with any single specific domain (Wiggins 1966). Analyses based on the concept of domain homogeneity (i.e., factor analysis) do not support the scale structure assumed (Anastasi 1990).

The latest version MMPI 2 has attempted to address many of the criticisms but the adaptations appear very superficial. The former version which differs imperceptibly has never been truly evaluated in Britain. Neither version has been standardised to mentally disordered population, the extremes of which are cared for in special hospitals. Faschingbauer (1979) underscored some of the difficulties facing clinicians attempting contemporary use of the original MMPI: the original Minnesota normative group seems to be an inappropriate reference group for the 90's and for mentally disordered patients. The median individual in that group had an eighth grade education, was married, lived in a small town or on a farm, and was employed as a lower level clerk or skilled tradesmen. None was under 16 or over 65 years of age, and all were white. As a clinician, he found it difficult to justify comparing anyone to such a dated group.

1.8 In defence of the MMPI: clinical scales

Despite these major criticisms, the MMPI clinical scales have their supporters. The rationale of the defence is that the clinical scales were intended to measure psychopathology, not personality traits, and it is unfair to criticise the MMPI for being unable to do what it has never been intended to do (Dahlstrom, 1969; Butcher and Tellegen, 1978).
In forensic psychology, there have been two important applications of the MMPI clinical scales. In the UK, Blackburn (1971, 1975, 1986) has led the field in the use and interpretation of the MMPI. His methodological approach was limited to the use of cluster analytical procedures, using the T-scores of the clinical scales and not the item response scores. Using these methods, he identified four main types of psychopathically disordered offender which emerged from MMPI clinical scale data.

These were: Type 1 (primary psychopathy) which can be identified in elevations in scale 4 (pd: psychopathic deviate) and scale 9 (Ma: hypomania) in combination with low scores on scales measuring emotionality. Type 2 (secondary psychopathy) which can be identified when 4-9 clinical scale profile is combined with elevations assessing anxiety (scale 7 - psychasthenia; scale 0 - social introversion), moodiness (scale 2 - depression), or deviant perceptual and interpersonal experiences (scale 6 - paranoia; scale 8 - schizophrenia). Type 3 (controlled group) who tend to deny the existence of psychological problems, can be sociable and extroverted but are highly controlled and deny negative experiences such as anxiety and paranoia. Type 4 (inhibited group) who are less controlled than type 3 and show signs of paranoia and defensiveness. They tend to be more socially introverted and avoidant. He found that they tend to be over represented among sex offenders. They have been useful in emphasising the heterogeneity of a group of patients classified under mental health legislation as psychopathically disordered.

In the U.S., the most useful typology for classifying criminals was the MMPI based criminal classification system developed by Megargee and Bohn (1979). Using hierarchical cluster analysis of samples of standard MMPI clinical scale profiles, they identified 10 types, most of which have been replicated in other samples (Zager, 1988).

Dahlstrom (1969) pointed out that the internal consistency and homogeneity are not relevant to the task of the MMPI. The important criterion, according to Dahlstrom, is not whether an item correlates with other items but whether it improves clinical prediction about patient groups i.e., external rather than internal validity. Dahlstrom added that the obvious-subtle dimensions of clinical scales are relatively uncorrelated among normal persons but have much higher correlations for appropriate psychiatric patient reference groups.
It should be noted that the original purpose of the MMPI may not be as clear cut as Dahlstrom (1969) and Butcher and Tellegen (1978) suggest. In the original MMPI Manual (Hathaway and McKinley, 1951), it reads:

*The Minnesota Multiphasic Personality Inventory is a psychometric instrument designed ultimately to provide, in a single test, scores on all the more important phases of personality. The point of view determining the importance of a trait in this case is that of the clinical or personnel worker who wished to assay those traits that are commonly characteristic of disabling psychological abnormality....personality characteristics may be assessed on the basis of scores on nine clinical scales originally developed for use with the inventory....although the scales are named according to the abnormal manifestation of the symptomatic complex, they have all been shown to have meaning within the normal range...as for validity, a high score on a scale has been found to predict positively the corresponding final clinical diagnosis or estimate in more than 60% of new psychiatric admissions (pp.5-6).*

On the one hand, the constructors of the MMPI are saying that the instrument is intended for differential diagnosis among psychiatric patients, and on the other, that scale scores also measure personality characteristics of normal persons.

Commenting on these inconsistencies in the revised version of the MMPI Manual (Hathaway and McKinlay, 1983), Levitt and Gotts (1995) forcefully described their efforts to avoid deciding whether they intended to create a personality inventory or a diagnostic instrument as "a succinct bit of weasling" (p.5) which left the question undecided.

1.9 MMPI rationally derived content scales

The MMPI clinical scales are not the only available groupings of MMPI items. The standard validity and clinical scales for the MMPI were developed empirically, but the advent of the Wigging (1966) content scales provided rationally derived scales that could be used for clinical interpretation. Since then, psychologists have devised a substantial number of scales composed of MMPI items. Many hundreds of possible scales have been derived from the items of the inventory - which are the most salient and reliable?
There have been four methods for developing new measures:

1. Cluster analysis and factor analysis of the total MMPI item pool (e.g., Eichman, 1961, 1962.).

2. Ratios of various clinical scales like the Index of Psychopathology (Sines and Silver, 1963) and the Anxiety Index and International Ratio (Welsh, 1952).

3. Content scales based on selection of items by clinical judgement like the Manifest Anxiety Scales (Taylor, 1953).

4. Empirical selection of items usually based on a comparison of contrasting groups. This procedure has furnished the bulk of all the special scales that have been developed from the MMPI pool over the years. (Levitt and Gotts, 1995).

The first edition of Volume I of the MMPI (Dahlstrom and Welsh, 1960) listed 213 special scales and ratios that had been constructed from the MMPI pool. The second edition of this volume (Dahlstrom, Welsh and Dahlstrom, 1975) contained 455 special scales and ratios.

There is little information on the large majority of special scales. Megargee and Mendelsohn (1962) regarded such omissions as seriously detrimental to the clinical researchers who wished to measure some aspect of personality by using one of the scales. Therefore the question of the validity of most of the scales remains unanswered. Others have criticised the special scales for their lack of conceptual clarity (Clopton, 1979). This could be applied to the naming of the special scales, the selection of criterion and comparison groups, and the intended use of the new scale. Both Megargee and Mendelsohn (1962) and Butcher and Tellegen (1979) caution that the title given to a special scale by its constructor may be misleading and should not be accepted uncritically. Butcher and Tellegen (1978) noted that many scales had been constructed by contrasting different samples of convenience, often with heterogeneous makeup and with important characteristics unknown. Often the scales could be criticised for lack of cross validation and psychometric properties. Many new scales prove to be largely redundant alternatives versions of existing scales. (Butcher and Tellegen, 1978: Lachar, Lewis and Kupke, 1979).
Discussion of the interpretation of special scales is uncommon. Graham (1978) has produced a review of the experimental findings with a numbers of the special scales. Clopton (1979) has contributed a chapter on special scale construction. The serious dearth of reviews of the special scales perhaps explains their limited use by most clinicians who still depend on the MMPI clinical scales for diagnostic purposes, despite their serious limitations (Moreland and Dahlstrom, 1983).

However, the special scales offer an abundance of information beyond that provided by the clinical scales and a precision that the clinical scales cannot match. This very positive statement reflects the view of the fiercest critics of the MMPI viz., Levitt and Gotts (1995). Because little information about them has appeared in the research literature, Duckworth and Anderson (1986) argue that their interpretations were based primarily on their own clinical experience. Graham (1987) and Greene (1980) consider such experience to be fundamental for special scale analysis.

The work of Lushene at Florida State University, US is worthy of comment (Levitt and Gotts, 1995). He was responsible for setting up an ongoing research programme to evaluate the complete range of MMPI special scales. Very few scales survived their rigid methodology to be considered diagnostically applicable.

Mental health professionals have employed the MMPI in all ways: as a diagnostic instrument, as a measure of emotional adjustment, and as a technique for personality assessment. No matter how it is used, the major shortcomings of the MMPI clinical scales intrudes on the accuracy and utility of results. The multi dimensionality of the clinical scales makes diagnosis difficult; it interferes to even a greater extent with assessment of personality. However, the greater versatility and homogeneity of MMPI special scales improves personality assessment (Levit and Goats, 1995).
1.10 MMPI PD scales

The MMPI PD scales developed by More et al. (1985), range in length from 14 to 37 items, to assess DSM-III personality disorders. The data used for the scale constructions included MMPI item responses from 475 psychiatric patients randomly selected from a large sample of patients who had been treated at five state hospitals and two regional health centres. The sample was 56% male. The mean age for the sample was 37.5 (sd=13.1). Subjects had been diagnosed under the DSM classification, with most receiving diagnosis of schizophrenia (36%), affective disorder (33%), personality disorder (15%), alcoholism or drug misuse (15%). They reported internal consistency estimates for the overlapping scales ranging from 0.67 to 0.86. Hurt, Clarkia and More (1990) reported test-retest reliability ranging from 0.66 to 0.86 after an average inter-test interval of 3 weeks. Dubro et al. (1988) found that the MMPI PD scales could adequately identify the presence of any personality disorder, two of the DSM-III's personality disorder clusters, and one individual disorder. More et al. (1988) reported that these scales discriminated personality disordered from normal individuals and from patients with different personality disorders.

The scale development procedure of the More scales was similar to one devised by Wigging (1966). The construction of the scales proceeded in two steps. The initial phase involved a rational construction of MMPI scales. Experienced clinical psychologists, who were familiar with the diagnostic criteria for the different DSM-III personality disorders, were instructed to search the MMPI for items which they felt were representative of these criteria. From these evaluations preliminary scales were constructed consisting of all items, which at least two of the four clinicians felt were pertinent to a specific disorder.

Scales were constructed for each of the 11 DSM-III personality disorders and proved to have some congruence with the three DSM-III personality disorder clusters:

cluster A: includes people whose disorders appear odd and eccentric.
cluster B: includes people whose disorders appear dramatic, emotional and impulsive.
cluster C: includes people whose disorders appear to reflect anxiety and fearfulness.
The second stage of the analysis involved an empirical refinement of the scales yielded by the initial stage. Item analyses were performed to sequentially filter items which did not demonstrate discriminative capacity for the scales defined by the clinicians. If an item did not yield significant discriminative capacity, it was dropped. A maximum of three iterations was needed for scale membership. The final versions of the derived scales contained many items which were common to two or more scales. Certain MMPI items were significantly associated with more than one personality scale. This finding was not considered to be unexpected, given the considerable degree of overlap among DSM-III criteria. However, item overlap can be problematic in self report inventories, particularly with respect to the study of interrelationships among scales (Welsh 1952). Thus, More et al (1985) developed a second set of non-overlapping scales.

### 1.11 Broadmoor MMPI PD scales

Both sets of scales will be applied to the Broadmoor sample to test their reliability with mentally disordered offender patients. Their internal consistency will be tested, refinements made if necessary to improve their reliability. Differences between the normative data of the More sample and the Broadmoor sample will be observed and a content analysis conducted on the
emerging Broadmoor MMPI PD scales for content validity and congruence with the diagnostic criteria of DSM IV. If the psychometric properties of the Broadmoor MMPI PD scales are sufficiently reliable, together with the analysis of their rational content, one can confidently proceed to the proposed follow on clinical study.

2. Method

The data used for the testing the psychometric properties of the MMPI PD scales consisted of every validly completed set of MMPI item responses from patients at Broadmoor Hospital between 1960 and 1993. This amounted to 2855 valid profiles entered into the computer by a qualified data processor. A breakdown of MMPI's of the sample, according to the date of testing, completed in each decade is:

- 1960-1969: 1084
- 1970-1979: 983
- 1980-1989: 572
- 1990-: 256

83.7% of the sample represented male patients and 16.3% of the sample represented female patients. Ages ranged between 16 and 82 years, 40 years being the 50th percentile. Differences and correlations among demographic variables such as age, Mental Health categories, classification and index offences will be studied in the follow on study.

3. Procedure

The MMPI PD scales were constructed using the existing special hospital data base. Standard classical, psychometric analysis (Nunally, 1978) were carried out to establish the measurement properties of the new scales. This involved item analysis, cluster analysis, anovas and t-tests. Item analysis can help test users in an evaluation of published tests (Anastasi, 1990). Items can be analysed qualitatively, in terms of their content and form, and quantitatively, in terms of their statistical properties. Qualitative analysis includes the consideration of content validity. Quantitative analysis includes principally the measurement of item difficulty and item discrimination. Tests can be improved through the selection, substitution, or revision of items. The alpha coefficient (Cronbach, 1951) will be employed to test the reliability of the scale scores. This represents the sum of the variance of item scores. The exclusion of items with low
correlations can often improve the reliability standard as well as the inclusion of highly correlated items. An examination of the residual items of the MMPI will be made to further elaborate the construct validity of the new scales. Using Ward's (1988) method of hierarchical clustering, the cluster solution to the Broadmoor scales will be compared to the DSM cluster solution.

4. Results

Table 1. Psychometric properties of the MMPI PD (overlapping) scales

<table>
<thead>
<tr>
<th>scale</th>
<th>Broadmoor norms</th>
<th>More norms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>alpha</td>
<td>mean</td>
</tr>
<tr>
<td>Paranoid</td>
<td>22</td>
<td>0.84</td>
</tr>
<tr>
<td>Schizotypal</td>
<td>36</td>
<td>0.89</td>
</tr>
<tr>
<td>Schizoid</td>
<td>22</td>
<td>0.71</td>
</tr>
<tr>
<td>Histrionic</td>
<td>20</td>
<td>0.74</td>
</tr>
<tr>
<td>Narcissistic</td>
<td>31</td>
<td>0.73</td>
</tr>
<tr>
<td>Antisocial</td>
<td>25</td>
<td>0.65</td>
</tr>
<tr>
<td>Borderline</td>
<td>22</td>
<td>0.76</td>
</tr>
<tr>
<td>Dependent</td>
<td>20</td>
<td>0.80</td>
</tr>
<tr>
<td>Compulsive</td>
<td>15</td>
<td>0.68</td>
</tr>
<tr>
<td>Passive-aggressive</td>
<td>14</td>
<td>0.77</td>
</tr>
<tr>
<td>Avoidant</td>
<td>38</td>
<td>0.92</td>
</tr>
</tbody>
</table>

* p=<0.001

Commentary

The Broadmoor scale mean is significantly different from the More sample mean on all personality scales. The Broadmoor patients, as a group, appear to be more disordered on all personality disorders except on the histrionic and compulsiveness scales, where they are less disordered. Content analysis of the endorsed items of these scales may reveal dimensions other than the criteria associated with these disorders as stated in DSM III and, currently, in DSM IV.
Table two: Psychometric properties of MMPI PD (non-overlapping scales)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Broadmoor norms</th>
<th></th>
<th>More norms</th>
<th></th>
<th>t-test</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>items</td>
<td>alpha</td>
<td>mean</td>
<td>sd</td>
<td>alpha</td>
<td>mean</td>
</tr>
<tr>
<td>Paranoid</td>
<td>15</td>
<td>0.78</td>
<td>10.16</td>
<td>3.27</td>
<td>0.75</td>
<td>5.48</td>
</tr>
<tr>
<td>Schizotypal</td>
<td>15</td>
<td>0.83</td>
<td>9.73</td>
<td>3.73</td>
<td>0.79</td>
<td>6.00</td>
</tr>
<tr>
<td>Schizoid</td>
<td>13</td>
<td>0.64</td>
<td>7.26</td>
<td>2.62</td>
<td>0.65</td>
<td>4.51</td>
</tr>
<tr>
<td>Histrionic</td>
<td>13</td>
<td>0.47</td>
<td>6.45</td>
<td>2.28</td>
<td>0.69</td>
<td>7.19</td>
</tr>
<tr>
<td>Narcissistic</td>
<td>14</td>
<td>0.54</td>
<td>8.29</td>
<td>2.53</td>
<td>0.71</td>
<td>6.82</td>
</tr>
<tr>
<td>Antisocial</td>
<td>20</td>
<td>0.72</td>
<td>11.66</td>
<td>3.65</td>
<td>0.77</td>
<td>7.31</td>
</tr>
<tr>
<td>Borderline</td>
<td>17</td>
<td>0.78</td>
<td>9.76</td>
<td>3.81</td>
<td>0.68</td>
<td>7.00</td>
</tr>
<tr>
<td>Dependent</td>
<td>16</td>
<td>0.77</td>
<td>8.83</td>
<td>3.65</td>
<td>0.63</td>
<td>6.64</td>
</tr>
<tr>
<td>Compulsive</td>
<td>13</td>
<td>0.62</td>
<td>5.64</td>
<td>2.60</td>
<td>0.62</td>
<td>7.98</td>
</tr>
<tr>
<td>Passive-aggressive</td>
<td>14</td>
<td>0.77</td>
<td>7.98</td>
<td>3.38</td>
<td>0.74</td>
<td>6.25</td>
</tr>
<tr>
<td>Avoidant</td>
<td>14</td>
<td>0.80</td>
<td>7.17</td>
<td>3.59</td>
<td>0.64</td>
<td>6.62</td>
</tr>
</tbody>
</table>

* = <0.001

Commentary

Despite the apparent refinement of excluding overlapping items from the scales, similar differences between the Broadmoor sample and the More sample remained with the exception that there was no significant difference between the groups in relation to avoidant personality disorder (AVD). However, the internal consistency of four of the Broadmoor scales (table 3.) did not reach the optimal cut-off point for reliability for a diagnostic battery (Nunally,78), with an alpha score of less than 0.7. Six of the More scales failed to reach this cut off but were not subsequently refined.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizoid (SZD):</td>
<td>0.64</td>
</tr>
<tr>
<td>Histrionic (HST):</td>
<td>0.47</td>
</tr>
<tr>
<td>Narcissistic (NAR):</td>
<td>0.54</td>
</tr>
<tr>
<td>Compulsiveness (CPS):</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Table 3. Broadmoor scales lacking internal consistency

By means of itemetric analysis, discreet items in the overlapping scales were re-introduced which appeared to fit better (correlation index) provided that the scale remained non overlapping.
This resulted in psychometrically strengthened scales which are presented in table 4.

### Table 4. 4 modified non-overlapping MMPI PD scales: Broadmoor sample

<table>
<thead>
<tr>
<th>Scale</th>
<th>alpha</th>
<th>mean</th>
<th>sd</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histrionic</td>
<td>0.78</td>
<td>6.58</td>
<td>3.49</td>
<td>14</td>
</tr>
<tr>
<td>Narcissistic</td>
<td>0.71</td>
<td>8.46</td>
<td>3.23</td>
<td>16</td>
</tr>
<tr>
<td>Schizoid</td>
<td>0.75</td>
<td>7.70</td>
<td>2.95</td>
<td>12</td>
</tr>
<tr>
<td>Compulsive</td>
<td>0.71</td>
<td>6.42</td>
<td>3.04</td>
<td>14</td>
</tr>
</tbody>
</table>

**Commentary**

The re-construction of these scales meant that all MMPI PD scales derived from the Broadmoor item responses reached the alpha 0.7 cut off point, supporting limited reliability as research tools. Their internal consistency differed from the More sample (non forensic) on all scales except AVOIDANT but compared more favourably with those found in a recent study by O’Maille and Fine (1995) using the MMPI PD scales with a prison sample. In their study, the ANTISOCIAL, DEPENDENT AND NARCISSISTIC scales differed from the More sample. Their explanation for these differences was to suggest that the personality characteristics were distributed differently in the correctional sample. The further differences identified in the Broadmoor sample could be explained by the distinguishing characteristics underlying their mentally disordered condition.
Content analysis of the MMPI PD Broadmoor scales.

For diagnostic purposes, these scales would not be sufficient, as they did not reach the Nunally (1978) criterion for diagnostic reliability (alpha = 0.9). When used in conjunction with structured clinical interviews, they may contribute to a reliable and standardised method of identifying the presence of personality disorders. To further this argument, it is necessary to examine the items of each scale and use the same method adopted by More et al (1985) to assess if the items appeared consistent with the criteria of each disorder as described in the current DSM IV manual.

1. Content analysis of Paranoid (PAR) MMPI PD scale (15 items).

19: when I take a new job, I like to be tipped off on who should be gotten next to.
110:* someone has it in for me.
123:* I believe I am being followed.
124: Most people will use somewhat unfair means to gain profit or an advantage rather than lose it.
136:* I commonly wonder what hidden reason another person may have for doing something nice for me.
157:* I feel that I have often been punished without cause.
162:* I resent having anyone take me in so cleverly that I have had to admit that it was one on me.
197: Children should be taught all the main facts of sex.
200:* There are persons who are trying to steal my thoughts and ideas.
218: It does not bother me particularly to see animals suffer.
244:* My way of doing things is apt to be misunderstood by others.
247:* I have reason for feeling jealous of one or more members of my family.
278:* I have often felt that strangers were looking at me critically.
448:* I am bothered by people outside, on buses, in stores, etc., watching me.
347:* I have no enemies who really wish to harm me. (false)

Using the diagnostic criteria for 301.0 Paranoid Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the PAR PD scale, those items marked (*) would appear to be congruent. This represents 11/16 of the MMPI PD items.

<table>
<thead>
<tr>
<th>Diagnostic criteria for 301.0 Paranoid Personality Disorder, DSM IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>A pervasive distrust and suspiciousness of others such that their motives are interpreted as malevolent, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:</td>
</tr>
<tr>
<td>(1) suspects, without sufficient basis, that others are exploiting, harming, or deceiving him or her</td>
</tr>
</tbody>
</table>

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Diagnostic criteria for 301.0 Paranoid Personality Disorder, DSM IV(cont)

(2) is preoccupied with unjustified doubts about the loyalty or trustworthiness of friends or associates

(3) is reluctant to confide in others because of unwarranted fear that the information will be used maliciously against him or her

(4) reads hidden demeaning or threatening meanings into benign remarks or events

(5) persistently bears grudges, i.e., is unforgiving of insults, injuries, or slights

(6) perceives attacks on his or her character or reputation that are not apparent to others and is quick to react angrily or to counterattack

(7) has recurrent suspicions, without justification, regarding fidelity of spouse or sexual partner

2. Content analysis of Schizotypal (STY) MMPI PD scale: 14 items

27: * evil spirits possess me at times.
33: * I have had very peculiar and strange experiences.
35: If people had not had it in for me I would have been much more successful.
50: * My soul sometimes leaves my body.
121:* I believe I am being plotted against.
151:* Someone has been trying to poison me.
284:* I am sure I am being talked about.
292:* I am likely not to speak to people until they speak to me.
317:* I am more sensitive than most other people.
345:* I often feel as if things were not real.
348:* I tend to be on my guard with people who are somewhat more friendly than I had expected.
349:* I hear strange things when I am alone.
377:* At parties I am more likely to sit by myself or with just one other person than to join in with the crowd.
551:* Sometimes I am sure that other people can tell what I am thinking.

Using the diagnostic criteria for 301.22 Schizotypal Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the Schizotypal(STY) PD scale, those items marked (*) would appear to be congruent. This represents 13/14 of the MMPI PD items.
However, many of the items also reflect paranoid ideation and would be consistent with the PARANOID PD scale.

### Diagnostic criteria for 301.22 Schizotypal Personality Disorder

**A.** A pervasive pattern of social and interpersonal deficits marked by acute discomfort with, and reduced capacity for, close relationships as well as by cognitive or perceptual distortions and eccentricities of behaviour, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

1. ideas of reference (excluding delusions of reference)
2. odd beliefs or magical thinking that influences behaviour and is inconsistent with subcultural norms (e.g., superstitiousness, belief in clairvoyance, telepathy, or "sixth sense"; in children and adolescents, bizarre fantasies or preoccupations)
3. unusual perceptual experiences, including bodily illusions
4. odd thinking and speech (e.g., vague, circumstantial, metaphorical, overelaborate, or stereotyped)
5. suspiciousness or paranoid ideation
6. inappropriate or constricted affect
7. behaviour or appearance that is odd, eccentric, or peculiar
8. lack of close friends or confidants other than first-degree relatives
9. excessive social anxiety that does not diminish with familiarity and tends to be associated with paranoid fears rather than negative judgments about self

### 3. Content analysis of Schizoid (SZD) MMPI PD scale: 11 items.

52: *I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.*
286: *I am never happier than when alone.*
324: *I have never been in love with anyone.*
407: *I am usually calm and not easily upset. (false)*
453: *When I was a child I didn't care to be a member of a crowd or gang.*
454: *I could be happy living all alone in a cabin in the woods or mountains.*
473: *Whenever possible I avoid being in a crowd.*

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3. Content analysis of Schizoid (SZD) MMPI PD scale: 11 items. (Cont)

54: * I am liked by most people who know me. (false)
57: * I am a good mixer. (false)
309: * I seem to make friends as quickly as others do. (false)
547: * I have no enemies who really wish to harm me. (false)

Using the diagnostic criteria for 301.20 Schizoid Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the SZD PD scale, those items marked (*) would appear to be congruent. This represents 10/11 of the MMPI PD items.

### Diagnostic criteria for 301.20 Schizoid Personality Disorder

A. A pervasive pattern of detachment from social relationships and a restricted range of expression of emotions in interpersonal settings, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:

1. neither desires nor enjoys close relationships, including being part of a family
2. almost always chooses solitary activities
3. has little, if any, interest in having sexual experiences with another person
4. takes pleasure in few, if any, activities
5. lacks close friends or confidants other than first-degree relatives
6. appears indifferent to the praise or criticism of others
7. shows emotional coldness, detachment, or flattened affectivity

4. Content analysis of Histrionic (HST) MMPI PD scale: 13 items

99: I like to go to parties and other affairs where there is lots of loud fun.
126: I like dramatics.
181: * When I get bored I like to stir up some excitement.
381: I am often said to be hotheaded.
445: I was fond of excitement when I was young.
451: My worries seem to disappear when I get into a crowd of lively people.
482: While in trains, busses, etc., I often talk to strangers.
4. Content analysis of Histrionic (HST) MMPI PD scale: 13 items (cont)

521: In a group of people I would not be embarrassed to be called upon to start a discussion 
or give an opinion about something I know well.
111f: * I have never done anything dangerous for the thrill of it.
180f: I find it hard to make talk when I meet new people.
240f: I never worry about my looks.
304f: In school I found it very hard to talk before the class.
312f: I dislike having people about me.

Using the diagnostic criteria for 301.50 Histrionic PD, DSM IV (see below) as a guide to 
evaluating the content validity of the items of the HST PD scale, those items marked (*) would 
appear to be congruent. This represents 2/11 of the MMPI PD items. The majority of the items 
appear to be more consistent with a description of an extroverted personality type, and not 
necessarily disordered. Therefore this scale appears to lack content validity.

<table>
<thead>
<tr>
<th>Diagnostic criteria for 301.50 Histrionic Personality Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>A pervasive pattern of excessive emotionality and attention seeking, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:</td>
</tr>
<tr>
<td>(1) is uncomfortable in situations in which he or she is not the centre of attention</td>
</tr>
<tr>
<td>(2) interaction with others is often characterized by inappropriate sexually seductive or provocative behaviour</td>
</tr>
<tr>
<td>(3) displays rapidly shifting and shallow expression of emotions</td>
</tr>
<tr>
<td>(4) consistently uses physical appearance to draw attention to self</td>
</tr>
<tr>
<td>(5) has a style of speech that is excessively impressionistic and lacking in detail</td>
</tr>
<tr>
<td>(6) shows self-dramatization, theatricality, and exaggerated expression of emotion</td>
</tr>
<tr>
<td>(7) is suggestible, i.e., easily influenced by others or circumstances</td>
</tr>
<tr>
<td>(8) considers relationships to be more intimate than they actually are</td>
</tr>
</tbody>
</table>
5. Content analysis of Narcissistic (NAR) Broadmoor MMPI PD scale: 16 items.

73: * I am an important person.
165: * I like to know some important people because it makes me feel important.
250: * I don't blame anyone for trying to grab everything he can get in this world.
271: * I do not blame a person for taking advantage of someone who lays himself open to it.
280: * Most people make friends because friends are likely to be useful to them.
319: Most people inwardly dislike putting themselves out to help other people.
353: I have no dread of going into a room by myself where other people have already gathered and are talking.
400: * If given the chance I could do something that would be of great benefit to the world.
415: * If given the chance I would make a good leader of people.
469: I have often found people jealous of my good ideas, just because they had not thought of them first.
520: I strongly defend my own opinions as a rule.
142f: I certainly feel useless at times.
171f: It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of thing.
267f: When in a group of people I have trouble thinking of the right things to talk about.

Using the diagnostic criteria for 301.81 Narcissistic Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the NAR PD scale, those items marked (*) would appear to be congruent. This represents 7/11 of the MMPI PD items. Some items appear to be more consistent with a description of an extroverted personality type, and not necessarily disordered. This scale appears to have limited content validity.

**Diagnostic criteria for 301.81 Narcissistic Personality Disorder**

A pervasive pattern of grandiosity (in fantasy or behaviour), need for admiration, and lack of empathy, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

1. has a grandiose sense of self-importance (e.g., exaggerates achievements and talents, expects to be recognized as superior without commensurate achievements)
2. is preoccupied with fantasies of unlimited success, power, brilliance, beauty, or ideal love
3. believes that he or she is "special" and unique and can only be understood by, or should associate with, other special or high-status people (or institutions)
4. requires excessive admiration
5. has a sense of entitlement, i.e., unreasonable expectations of especially favourable treatment or automatic compliance with his or her expectations
Diagnostic criteria for 301.81 Narcissistic Personality Disorder (cont)

(6) is interpersonally exploitative, i.e., takes advantage of others to achieve his or her own ends

(7) lacks empathy: is unwilling to recognize or identify with the feelings and needs of others

(8) is often envious of others, or believes that others are envious of him or her

(9) shows arrogant, haughty behaviours or attitudes

6. Content analysis of Antisocial (ANT) Broadmoor MMPI PD scale: 20 items.

21: At times I have very much wanted to leave home.
38: * During one period when I was a youngster I engaged in petty thievery.
45: I do not always tell the truth.
49: * It would be better if almost all laws were thrown away.
56: As a youngster I was suspended from school one or more times for cutting up.
93: * I think most people would lie to get ahead.
118: In school I was sometimes sent to the principal for cutting up.
135: * If I could get into a movie without paying and be sure I would not be seen I would probably do it.
146: I have the wanderlust and am never happy unless I am roaming or travelling about.
205: * At times it had been impossible for me to keep from stealing or shoplifting something.
419: I played hooky from school quite often as a youngster.
437: It is alright to get around the law if you don't actually break it.
456: A person shouldn't be punished for breaking a law that he thinks is unreasonable.
463: I have several times had a change of heart about my life work.
471: In school my marks in department were quite regularly bad.
475: When I am cornered I tell that portion of the truth which is not likely to hurt me.
294f: * I have never been in trouble with the law.
460f: I have used alcohol moderately (or not at all).
466f: Except by a doctor's orders I never take drugs or sleeping powders.

Using the diagnostic criteria for 301.7 Antisocial Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the ANT PD scale, those items marked (*) would appear to be congruent. This represents 6/20 of the MMPI PD items. This scale appears to have poor content validity.
Diagnostic criteria for 301.7 Antisocial Personality Disorder

A. There is a pervasive pattern of disregard for and violation of the rights of others occurring since age 15 years, as indicated by three (or more) of the following:

(1) failure to conform to social norms with respect to lawful behaviours as indicated by repeatedly performing acts that are grounds for arrest

(2) deceitfulness, as indicated by repeated lying, use of aliases, or conning others for personal profit or pleasure

(3) impulsivity or failure to plan ahead

(4) irritability and aggressiveness, as indicated by repeated physical fights or assaults

(5) reckless disregard for safety of self or others

(6) consistent irresponsibility, as indicated by repeated failure to sustain consistent work behaviour or honour financial obligations

(7) lack of remorse, as indicated by being indifferent to or rationalizing having hurt, mistreated, or stolen from another

7. Content analysis of Borderline (BDL) Broadmoor MMPI PD scale: 17 items.

39: * At times I feel like smashing things.
74: I have often wished I were a girl. (Or if you are a girl) I have never been sorry that I am a girl.
75: I get angry sometimes.
129: Often I cannot understand why I have been so cross and grouchy.
139: * Sometimes I feel as if I must injure either myself or someone else.
145: At times I feel like picking a fist fight with someone.
158: I cry easily.
208: I like to flirt.
215: I have used alcohol excessively.
234: I get mad easily and then get over it soon.
236: I brood a great deal.
299: I think that I feel more intensely than most people do.
468: I am often sorry because I am so cross and grouchy.
555: I sometimes feel that I am about to go to pieces.
37f: * I have never been in trouble because of my sex behaviour.
379f: I very seldom have spells of the blues.
399f: I am not easily angered.
Using the diagnostic criteria for 301.83 Borderline Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the BDL PD scale, those items marked (*) would appear to be congruent. This represents 3/17 of the MMPI PD items. This scale appears to have very poor content validity.

### Diagnostic criteria for 301.83 Borderline Personality Disorder

A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

1. **frantic efforts to avoid real or imagined abandonment.** Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5.
2. a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation
3. identity disturbance: markedly and persistently unstable self-image or sense of self
4. impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5.
5. recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour
6. affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)
7. chronic feelings of emptiness
8. inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)
9. transient, stress-related paranoid ideation or severe dissociative symptoms
8. Content analysis of Dependent (DEP) Broadmoor MMPI PD scale: 16 items.

82: I am easily downed in an argument.
141: * My conduct is largely controlled by the customs of those around me.
357: I have several times given up doing a thing because I thought too little of my ability.
394: * I frequently ask people for advice.
411: It makes me feel like a failure when I hear of the success of someone I know well.
418: At times I think that I am no good at all.
443: I am apt to pass up something I want to do because others feel that I am not going about it the right way.
517: I cannot do anything well.
531: * People can pretty easily change me even though I thought that my mind was made up on a subject.
549: I shrink from facing a crisis or difficulty.
564: I am apt to pass up something I want to do when others feel that it isn't worth doing.
122f: I seem to be about as capable and smart as most others around me.
170f: What others think of me does not bother me.
257f: I usually expect to succeed in things I do.
264f: I am entirely self-confident.
501f: * I usually work things out for myself rather than get someone to show me how.

Using the diagnostic criteria for 301.6 Dependent Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the DEP PD scale, those items marked (*) would appear to be congruent. This represents 4/16 of the MMPI PD items. This scale appears to have very poor content validity.

<table>
<thead>
<tr>
<th>Diagnostic criteria for 301.6 Dependent Personality Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>A pervasive and excessive need to be taken care of that leads to submissive and clinging behaviour and fears of separation, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:</td>
</tr>
<tr>
<td>(1) has difficulty making everyday decisions without an excessive amount of advice and reassurance from others</td>
</tr>
<tr>
<td>(2) needs others to assume responsibility for most major areas of his or her life</td>
</tr>
<tr>
<td>(3) has difficulty expressing disagreement with others because of fear of loss of support or approval. Note: Do not include realistic fears of retribution.</td>
</tr>
<tr>
<td>(4) has difficulty initiating projects or doing things on his or her own (because of a lack of self-confidence in judgment or abilities rather than a lack of motivation or energy)</td>
</tr>
</tbody>
</table>
Diagnostic criteria for 301.6 Dependent Personality Disorder (cont).

(5) goes to excessive lengths to obtain nurturance and support from others, to the point of volunteering to do things that are unpleasant

(6) feels uncomfortable or helpless when alone because of exaggerated fears of being unable to care for himself or herself

(7) urgently seeks another relationship as a source of care and support when a close relationship ends

(8) is unrealistically preoccupied with fears of being left to take care of himself or herself


90: Once in a while I put off until tomorrow what I ought to do today.
100: I have met problems so full of possibilities that I have been unable to make up my mind about them.
112: I frequently find it necessary to stand up for what I think is right.
148: It makes me impatient to have to people ask me my advice or otherwise interrupt me when I am working on something important.
217: * I frequently find myself worrying about something.
322: I worry over money and business.
343: * I usually have to stop and think before I act even in trifling matters.
346: * I have a habit of counting things that are not important such as bulbs on electric signs.
402: I often must sleep over a matter before I decide what to do.
408: I am apt to hide my feelings in some things, to the point that people may hurt me without their knowing about it.
461: I find it hard to set aside a task that I have undertaken, even for a short time.
493: I prefer work which requires close attention, to work which allows me to be careless.
499: * I must admit that I have at times been worried beyond reason over something that really did not matter.

Using the diagnostic criteria for Obsessive-Compulsive Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the CPS PD scale, those items marked (*) would appear to be congruent. This represents 4/13 of the MMPI PD items. This scale appears to have poor content validity.
Diagnostic criteria for 301.4 Obsessive-Compulsive Personality Disorder

A pervasive pattern of preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:

1. is preoccupied with details, rules, lists, order, organization, or schedules to the extent that the major point of the activity is lost
2. shows perfectionism that interferes with task completion (e.g., is unable to complete a project because his or her own overly strict standards are not met)
3. is excessively devoted to work and productivity to the exclusion of leisure activities and friendships (not accounted for by obvious economic necessity)
4. is overconscientious, scrupulous, and inflexible about matters of morality, ethics, or values (not accounted for by cultural or religious identification)
5. is unable to discard worn-out or worthless objects even when they have no sentimental value
6. is reluctant to delegate tasks or to work with others unless they submit to exactly his or her way of doing things
7. adopts a miserly spending style toward both self and others; money is viewed as something to be hoarded for future catastrophes
8. shows rigidity and stubbornness

10. Content analysis of Avoidant (AVD)Broadmoor MMPI PD scale: 14 items.

86: * I am certainly lacking in self confidence.
138: * Criticisms or scolding hurts me terribly.
201:* I wish I were not so shy.
305: Even when I am with people I feel lonely much of the time.
321: I am easily embarrassed.
344: * Often I cross the street in order not to meet someone I see.
368: I have sometimes stayed away from another person because I feared doing or saying something that I might regret afterwards.
509: I sometimes find it hard to stick up for my rights because I am so reserved.
79f: My feelings are not easily hurt.
9lf: I do not mind being made fun of.
10. Content analysis of Avoidant (AVD) Broadmoor MMPI PD scale: 14 items (cont)

371f: *I am not unusually self-conscious.
391f: I love to go to dances.
450f: I enjoy the excitement of a crowd.
479f: I do not mind meeting strangers.

Using the diagnostic criteria for Diagnostic criteria for 301.82 Avoidant Personality Disorder, DSM IV (see below) as a guide to evaluating the content validity of the items of the AVD PD scale, those items marked (*) would appear to be congruent. This represents 5/14 of the MMPI PD items. This scale appears to have poor content validity.

<table>
<thead>
<tr>
<th>Diagnostic criteria for 301.82 Avoidant Personality Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>A pervasive pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:</td>
</tr>
<tr>
<td>(1) avoids occupational activities that involve significant interpersonal contact, because of fears of criticism, disapproval, or rejection</td>
</tr>
<tr>
<td>(2) is unwilling to get involved with people unless certain of being liked</td>
</tr>
<tr>
<td>(3) shows restraint within intimate relationships because of the fear of being shamed or ridiculed</td>
</tr>
<tr>
<td>(4) is preoccupied with being criticized or rejected in social situations</td>
</tr>
<tr>
<td>(5) is inhibited in new interpersonal situations because of feelings of inadequacy</td>
</tr>
<tr>
<td>(6) views self as socially inept, personally unappealing, or inferior to others</td>
</tr>
<tr>
<td>(7) is unusually reluctant to take personal risks or to engage in any new activities because they may prove embarrassing</td>
</tr>
</tbody>
</table>

228

32: I find it hard to keep my mind on a task or job.
41: I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going".
64: I sometimes keep on at thing until others lose their patience with me.
109:* Sometime people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.
147: I have often lost out on things because I could not make up my mind soon enough.
233: I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing.
235: I have been quite independent and free from family rule.
259: I have difficulty in starting to do things.
342: I forget right away what people say to me.
356: I have more trouble concentrating than others seem to have.
438:* There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done.
447: I am often inclined to go out of my way to win a point with someone who has opposed me.
536: It makes me angry to have people hurry me.
560: I am greatly bothered by forgetting where I put things.

Using the research criteria, this disorder has been removed from the diagnostic criteria but retained under research criteria, for passive-aggressive personality disorder, DSM IV (see below), as a guide to evaluating the content validity of the items of the PAG PD scale, those items marked (*) would appear to be congruent. This represents 2/14 of the MMPI PD items. This scale appears to have very weak content validity.

### Research criteria for passive-aggressive personality disorder

A. A pervasive pattern of negativistic attitudes and passive resistance to demands for adequate performance, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:

1. passively resists fulfilling routine social and occupational tasks
2. complains of being misunderstood and unappreciated by others
3. is sullen and argumentative

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Research criteria for passive-aggressive personality disorder (cont)

(4) unreasonably criticizes and scorns authority

(5) expresses envy and resentment toward those apparently more fortunate

(6) voices exaggerated and persistent complaints of personal misfortune

(7) alternates between hostile defiance and contrition

Table 5: Summary table of content analysis of Broadmoor MMPI PD scales

<table>
<thead>
<tr>
<th>scale</th>
<th>item congruence</th>
<th>strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paranoid (PAR):</td>
<td>11/16</td>
<td>moderate</td>
</tr>
<tr>
<td>Schizotypal (STY)</td>
<td>13/14</td>
<td>strong</td>
</tr>
<tr>
<td>Schizoid (SZD)</td>
<td>10/11</td>
<td>strong</td>
</tr>
<tr>
<td>Histrionic (HST)</td>
<td>2/11</td>
<td>weak</td>
</tr>
<tr>
<td>Narcissistic (NAR)</td>
<td>7/11</td>
<td>moderate</td>
</tr>
<tr>
<td>Antisocial (ANT)</td>
<td>6/20</td>
<td>weak</td>
</tr>
<tr>
<td>Borderline (BDL)</td>
<td>3/17</td>
<td>weak</td>
</tr>
<tr>
<td>Dependent (DEP)</td>
<td>4/16</td>
<td>weak</td>
</tr>
<tr>
<td>Compulsive (CPS)</td>
<td>4/13</td>
<td>weak</td>
</tr>
<tr>
<td>Passive-Aggressive (PAG)</td>
<td>2/14</td>
<td>weak</td>
</tr>
<tr>
<td>Avoidant (AVD)</td>
<td>5/14</td>
<td>weak</td>
</tr>
</tbody>
</table>

Commentary

A content analysis of the Broadmoor MMPI PD scales reveals strong support for Schizotypal and Schizoid PD scales, moderate support for PARANOID and Narcissistic PD scales and weak support for HISTRIONIC, ANTISOCIAL, BORDERLINE, DEPENDENT, COMPULSIVE, PASSIVE-AGGRESSIVE AND AVOIDANT PD scales.
Table 6: Relationships between the scales.

Morey MMPI PD scale correlations

<table>
<thead>
<tr>
<th></th>
<th>PAR</th>
<th>STY</th>
<th>SZD</th>
<th>HST</th>
<th>NAR</th>
<th>ANT</th>
<th>BDL</th>
<th>DEP</th>
<th>CPS</th>
<th>PAG</th>
<th>AVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAR</td>
<td>1.00</td>
<td>0.85</td>
<td>0.46</td>
<td>-0.15</td>
<td>0.01*</td>
<td>0.56</td>
<td>0.62</td>
<td>0.54</td>
<td>0.66</td>
<td>0.81</td>
<td>0.60</td>
</tr>
<tr>
<td>STY</td>
<td>0.85</td>
<td>1.00</td>
<td>0.74</td>
<td>-0.51</td>
<td>-0.43</td>
<td>0.43</td>
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<td>0.66</td>
<td>0.54</td>
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</tr>
<tr>
<td>SZD</td>
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<td>0.60</td>
<td>1.00</td>
<td>-0.76</td>
<td>-0.52</td>
<td>0.21</td>
<td>0.07</td>
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<tr>
<td>HST</td>
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<td>0.71</td>
<td>-0.01*</td>
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<td>-0.86</td>
<td>-0.15</td>
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</tr>
<tr>
<td>NAR</td>
<td>-0.21</td>
<td>-0.21</td>
<td>-0.56</td>
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<td>1.00</td>
<td>0.04*</td>
<td>0.00*</td>
<td>-0.47</td>
<td>-0.04*</td>
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<tr>
<td>ANT</td>
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<td>-0.15</td>
<td>1.00</td>
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<td>0.48</td>
<td>0.60</td>
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<tr>
<td>BDL</td>
<td>0.63</td>
<td>0.63</td>
<td>0.41</td>
<td>-0.31</td>
<td>-0.34</td>
<td>0.59</td>
<td>1.00</td>
<td>0.48</td>
<td>0.61</td>
<td>0.65</td>
<td>0.41</td>
</tr>
<tr>
<td>DEP</td>
<td>0.51</td>
<td>0.55</td>
<td>0.46</td>
<td>-0.41</td>
<td>-0.60</td>
<td>0.39</td>
<td>0.57</td>
<td>1.00</td>
<td>0.51</td>
<td>0.59</td>
<td>0.75</td>
</tr>
<tr>
<td>CPS</td>
<td>0.78</td>
<td>0.60</td>
<td>0.36</td>
<td>-0.21</td>
<td>-0.22</td>
<td>0.50</td>
<td>0.63</td>
<td>0.53</td>
<td>1.00</td>
<td>0.74</td>
<td>0.51</td>
</tr>
<tr>
<td>PAG</td>
<td>0.78</td>
<td>0.77</td>
<td>0.51</td>
<td>-0.33</td>
<td>-0.23</td>
<td>0.66</td>
<td>0.68</td>
<td>0.60</td>
<td>0.75</td>
<td>1.00</td>
<td>0.78</td>
</tr>
<tr>
<td>AVD</td>
<td>0.56</td>
<td>0.63</td>
<td>0.69</td>
<td>-0.70</td>
<td>-0.68</td>
<td>0.35</td>
<td>0.60</td>
<td>0.66</td>
<td>0.55</td>
<td>0.60</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Broadmoor MMPI PD scale correlations

Commentary

In Table 6, those correlations marked (*) indicate a non significant correlation and only appear in the Morey overlapping scale correlations above the diagonal on the matrix. The overlapping nature of these scale items explains the inflated correlations between many of the scales. HISTRIONIC scale and NARCISSISTIC scale are positively correlated but negatively correlated with every other scale.

In the Morey scales, there was no significant correlation between

- NARCISSISTIC and PARANOID
- NARCISSISTIC and ANTI SOCIAL
- NARCISSISTIC and BORDERLINE
- NARCISSISTIC and COMPULSIVE

and between

- HISTRIONIC and ANTI SOCIAL.

The former lack of relationship of many scales with narcissistic personality disorder (NAR pd) suggests that it is clearly a discreet disorder given the reliable psychometric properties of the scale and its strong content validity, with very few, if any, shared items. It appears to have discriminatory power.
DSM clusters.

Using Ward's method of cluster analysis, a dendogram was constructed representing the manner in which the scales combined. According to DSM III and IV, the scales should conform to three cluster types.

Cluster A: PARANOID, SCHIZOTYPAL, SCHIZOID
Cluster B: HISTRIONIC, NARCISSISTIC, BORDERLINE, ANTISOCIAL
Cluster C: DEPENDENT, COMPULSIVE, PASSIVE-AGGRESSIVE, AVOIDANT.

Figure 1: Dendrogram of Broadmoor (B)MMPI PD scales:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARANOID(B)</td>
<td>6</td>
</tr>
<tr>
<td>SCHIZOTYPAL(B)</td>
<td>11</td>
</tr>
<tr>
<td>BORDERLINE(B)</td>
<td>7</td>
</tr>
<tr>
<td>DEPENDENT(B)</td>
<td>9</td>
</tr>
<tr>
<td>ANTISOCIAL(B)</td>
<td>5</td>
</tr>
<tr>
<td>SCHIZOID(B)</td>
<td>4</td>
</tr>
<tr>
<td>AVOIDANT(B)</td>
<td>10</td>
</tr>
<tr>
<td>COMPULSIVE(B)</td>
<td>3</td>
</tr>
<tr>
<td>PASSIVE-AGGRESSIVE(B)</td>
<td>8</td>
</tr>
<tr>
<td>HISTRIONIC(B)</td>
<td>1</td>
</tr>
<tr>
<td>NARCISSISTIC(B)</td>
<td>2</td>
</tr>
</tbody>
</table>
Commentary

There are three Broadmoor MMPI PD clusters but they do not replicate the DSM clustering. The Broadmoor and DSM clusters are:

<table>
<thead>
<tr>
<th>Broadmoor</th>
<th>DSM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster A:</strong></td>
<td></td>
</tr>
<tr>
<td>PARANOID</td>
<td>PARANOID</td>
</tr>
<tr>
<td>SCHIZOTYPAL</td>
<td>SCHIZOTYPAL</td>
</tr>
<tr>
<td>BORDERLINE</td>
<td>SCHIZOID</td>
</tr>
<tr>
<td>DEPENDENT</td>
<td></td>
</tr>
<tr>
<td>ANTISOCIAL</td>
<td></td>
</tr>
<tr>
<td><strong>Cluster B:</strong></td>
<td></td>
</tr>
<tr>
<td>HISTRIONIC,</td>
<td>HISTRIONIC</td>
</tr>
<tr>
<td>NARCISSISTIC</td>
<td>NARCISSISTIC</td>
</tr>
<tr>
<td>BORDERLINE</td>
<td></td>
</tr>
<tr>
<td>ANTISOCIAL</td>
<td></td>
</tr>
<tr>
<td><strong>Cluster C:</strong></td>
<td></td>
</tr>
<tr>
<td>COMPULSIVE</td>
<td>COMPULSIVE</td>
</tr>
<tr>
<td>PASSIVE-AGGRESSIVE</td>
<td>PASSIVE-AGGRESSIVE</td>
</tr>
<tr>
<td>AVOIDANT</td>
<td>AVOIDANT</td>
</tr>
<tr>
<td>SCHIZOID</td>
<td>DEPENDENT</td>
</tr>
</tbody>
</table>

Those disorders marked in bold, represent the scales which are common to both cluster patterns. Broadmoor cluster A loses SCHIZOID and gains BORDERLINE, DEPENDENT and ANTISOCIAL. Rationally, this could still include those people whose disorders appear odd and eccentric, as described in DSM. It emphasises the discreetness between schizoid and schizotypal disorders. It is possible that this cluster closely represents the psychopathic group within Broadmoor, a hypothesis which will be tested out in the follow up study. Broadmoor clusters B and C will perhaps represent the variant personality traits underlying the mentally ill grouping, again a hypothesis which will be tested in the follow on study. Included among this group are people whose disorders appear dramatic, emotional and impulsive, and who appear more anxious and fearful than most.
Table 7: Sex differences in the Broadmoor MMPI PD scales.

<table>
<thead>
<tr>
<th>Scale</th>
<th>male mean</th>
<th>male sd</th>
<th>female mean</th>
<th>female sd</th>
<th>f</th>
<th>p</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARANOID</td>
<td>10.01</td>
<td>3.97</td>
<td>10.16</td>
<td>3.28</td>
<td>21.99</td>
<td>&lt;0.001</td>
<td>-0.74</td>
<td>ns</td>
</tr>
<tr>
<td>SCHIZOTYPAL</td>
<td>9.93</td>
<td>3.98</td>
<td>9.74</td>
<td>3.73</td>
<td>3.04</td>
<td>ns</td>
<td>0.87</td>
<td>ns</td>
</tr>
<tr>
<td>SCHIZOID</td>
<td>7.82</td>
<td>2.84</td>
<td>7.40</td>
<td>2.96</td>
<td>2.07</td>
<td>ns</td>
<td>2.51</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>HISTRONIC</td>
<td>5.91</td>
<td>3.43</td>
<td>6.86</td>
<td>3.50</td>
<td>0.40</td>
<td>ns</td>
<td>-4.73</td>
<td>0.001</td>
</tr>
<tr>
<td>NARCISSISTIC</td>
<td>7.12</td>
<td>3.06</td>
<td>8.46</td>
<td>3.23</td>
<td>2.85</td>
<td>ns</td>
<td>-7.09</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ANTISOCIAL</td>
<td>10.85</td>
<td>3.87</td>
<td>11.66</td>
<td>3.66</td>
<td>1.79</td>
<td>ns</td>
<td>-3.46</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>BORDERLINE</td>
<td>11.52</td>
<td>3.47</td>
<td>9.77</td>
<td>3.81</td>
<td>14.86</td>
<td>&lt;0.001</td>
<td>7.86</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>DEPENDENT</td>
<td>10.12</td>
<td>3.38</td>
<td>8.83</td>
<td>3.65</td>
<td>6.69</td>
<td>&lt;0.01</td>
<td>6.20</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>COMPULSIVE</td>
<td>7.38</td>
<td>3.22</td>
<td>6.42</td>
<td>3.04</td>
<td>4.83</td>
<td>&lt;0.05</td>
<td>5.29</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>PASSIVE-AGG</td>
<td>8.03</td>
<td>3.66</td>
<td>7.99</td>
<td>3.38</td>
<td>3.90</td>
<td>&lt;0.05</td>
<td>0.48</td>
<td>ns</td>
</tr>
<tr>
<td>AVOIDANT</td>
<td>8.58</td>
<td>3.48</td>
<td>7.17</td>
<td>3.59</td>
<td>1.67</td>
<td>ns</td>
<td>6.70</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Commentary

There were no significant differences between male and female samples on PARANOID, SCHIZOTYPAL and PASSIVE-AGGRESSIVE scales. Females scored significantly higher on personality disorder scales HISTRONIC, NARCISSISTIC and ANTISOCIAL, while males were higher on SCHIZOID, BORDERLINE, DEPENDENT, COMPULSIVE and AVOIDANT. It should be noted that the significance between the samples will be inflated due to the large sample size and therefore caution should be observed in the interpretation of differences.
5. Discussion

The aim of this study has been the evaluation of the psychometric properties of Broadmoor MMPI PD. scales. No known studies have been done to test the psychometric properties of existing personality disorder instruments in a forensic population (O’Maille and Fine, 1995). It was necessary to test their reliability and validity prior to investigating their relevance in identifying personality traits and pathology which distinguish the mentally ill from the psychopathically disordered patients. The scales were derived from the study by Morey et al (1985) who investigated the dynamics of personality disorders as represented in DSM-III (APA, 1980) using the MMPI item pool. If the scales are demonstrated to be valid and reliable, the forensic clinical psychologist with mentally disordered offenders would have a ready source of assessment information consistent with the current diagnostic system to formulate appropriate treatment interventions. The scales may have the potential to predict patient progress in treatment and contribute to the risk assessment prediction (Heilbrun and Heilbrun, 1995). These scales were derived on a rational as well as empirical basis. The normative data was obtained from a heterogenous American psychiatric population. Its application and internal consistency had never been tested on an UK sample, nor on an extreme group within psychiatric care viz., the mentally disordered offender population.

The MMPI has been used in Broadmoor Hospital since 1960 and the collation of this vast source of data represents a formidable database. However, previous studies using Broadmoor MMPI data used limited sample sizes (averaging 100) and rarely used the original raw data (item pool), choosing instead to manipulate the scale scores (T-scores). No normative data has ever been developed based on the original item pool. Given the weakness inherent in the clinical empirical scales, any clinical inferences and insights could only come from rational content scales. Such are the MMPI PD scales of More et al (1985). Several attempts have been made to refine them. The latest was by Levit and Goats (1995) but in the published report on their findings, they failed to give the norms (i.e., standard deviation and means) to their claimed refined PD scales, and thus, eliminated the possibility of replication.
This study has demonstrated, in psychometric terms, limited internal consistency of the Morey scales and the Broadmoor refined scales. It should be stated that its reliability was estimated by internal consistency methods only. Other traditional methods of testing for reliability were not used eg. parallel form, split-half and test-retest. However, the various methods of estimating reliability may not be equally relevant in assessing the psychometric adequacy of different scales (Weiner 1995). A scale may yield consistent scores over time but lack internal consistency, because it is multifactorial. The temporal stability of test findings is an aspect of reliability that is very important in forensic psychological court reports, as the majority of cases rely on extrapolating from the patient’s current status to their psychological functioning at the some past occasion (index offence) or future possibility (risk assessment of dangerousness). In this context, test-retest correlations will provide estimates of reliability only for phenomena that are expected to be stable over the time interval of the re-test. In the measurement of personality characteristics that are known to change substantially over time or have for whatever reason changed in a particular subject or group of subjects, retest correlations do not adequately reflect the intrinsic reliability of a scale - and less so the longer is the retest interval (Weiner, 1995, p 61). Test-retest reliability methods would be meaningful in the case of the assessment of trait dimensions of personality, but would not be relevant in the case in which a state dimension is being measured. The reliability of the temporal stability of the MMPI PD scales should be addressed by assessing long term changes over time by repeated measures. There is a large enough cohort within the Broadmoor MMPI data base of patients who have completed more than one test to investigate this property of the scales.

The refinement of the original Morey PD scales within this study meant the removal of certain items with a low Alpha score (< 0.7) and their replacement with non-overlapping items with an alpha score greater than 0.7. It is possible that this procedure has compromised their validity. In choosing the alternative items, care was taken to match the item with the DSM criteria for that disorder. However, this was by means of a personal heuristic which was not externally validated. The content analysis reveals that in the cases of the modified scales, Histrionic and Compulsive remained weak, Narcissistic was moderate while Schizoid was assessed to possess strong content validity. Hence, while the psychometric properties of the modified scales was improved, the content validity could certainly have been compromised. Further testing and cross validation are definitely required.

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The content analysis of the scales indicated serious weaknesses which are particularly relevant in the quest for reliable diagnostic methods of identifying discreet personality disorders. This is important for treatment and outcome measurement but also for offering reliable information in disaggregating the legal concept of "psychopathic disorder" into potentially constituent personality traits, dimensions and disorders. Acknowledging the limitations of the Broadmoor PD scales, it is possible to study the MMPI PD profiles of Broadmoor patients cautiously, and derive some meaningful insights into the personality disorder dimensions underlying their pathology. Their content validity requires further testing and could have been pursued through a convergent validity study with another criterion instrument for personality disorders such as the PDQ-R (Hyler and Reider, 1987).

In assessing the contribution of this study to the advancement of personality theory as applied to mentally disordered patients, it should be remembered that theoretical controversies in personality psychology are inextricably linked to issues of personality measurement (Krahe, 1992). Criticisms levelled at self-report measures are directed at the inaccuracy as well as unreliability of a person’s own account of his or her behaviour (Pryor, 1980). Additional strategies are required to overcome these problems. Some advocate the use of experimental responses, which is not possible in an archival study such as the present. An alternative strategy consists of complementing self report by other data sources, or relying on the convergent validity of additional psychometric instruments claiming to address similar constructs of personality (Acklin, 1995).

Many questions remain unanswered. While the concept of personality disorder assumes quantitative rather than qualitative variations from normality, the use of categorical classification in DSM-III "spuriously implies a discontinuity between disorders" (Blackburn, 1993, p.78), and between disorder and normality. While the inclusion of personality disorders under Axis-II has renewed interest in their classification (Widiger et al, 1988), it should be noted that the classifications of personality disorders in the DSM III and IV series are deliberately atheoretical and nonquantitative. Kline (1993) raises the question of their psychological meaning describing the diagnostic system as classification by fiat (p.337). Having critically analysed the Broadmoor MMPI PD scales, and established limited reliability, it will now be possible to conduct the
second part of the investigation studying the personality profiles of the patients. Some confidence can be ascribed to the weighting of the clinical inferences derived from the self report measures. The MMPI is based on criterion-keyed scales which not only have no necessary psychological meaning but they are also multivariate. Given that psychiatric groups are likely to vary on many variables, identical scores on such scales may have different psychological meaning. The scales are the result of pure empiricism - that the items will discriminate groups. On the premise that personality disorders are primarily deviations from the norms of interpersonal behaviour (Foulds, 1971), an empirically established dimensional system for describing interpersonal behaviour is required. The interpersonal circle originating in the work of Leary (1957), and developed by Wigging (1982), who was so influential in promoting the value of MMPI content scales in clinical work, might offer such a framework. Given that assessment methods should be theory based, interpersonal and cognitive conceptions of the pathological processes in personality disorders are sufficiently developed for assessment. Blackburn (1989) has demonstrated how personality disorder categories might be accommodated by the interpersonal model and it is hoped that the further investigations of the MMPI PD scales might further this model.

DSM recognises overlap between categories, and recommends multiple diagnosis when a person meets criteria for more than one disorder. Nevertheless, to establish validity, it needs to be shown that categories are internally consistent and distinguishable from each other. Evidence for the validity of specific categories is limited, although More (1988) found that criteria clustered into categories which broadly resemble those proposed in DSM-III. They also claim that their derived scales were a fair reflection of the DSM-III constructs they were attempting to measure. These findings were not supported by this study. While the content analysis of the Broadmoor MMPI PD scales was conducted by the author (a forensic clinical psychologist), the content analysis of the More scales was conducted by four clinicians in concert. Therefore, the weight to be attached to the content reliability ascribed to the Broadmoor MMPI PD scales requires further testing. If anything, the judgements are severe and perhaps represent a "worst case scenario", given the specific nature of the Broadmoor sample. It seems unlikely that the categories currently specified represent the optimal clustering of inflexible and maladaptive dispositions (Blackburn, 1993).
Morey et al (1985) issued a similar caveat about the nature of the psychiatric population from which they obtained their norms. They stated that future studies must be cognizant of the normative data in the further refinement of the scales and thus clarify the precise domains being measured. Therefore further construct validation was called for. Because the DSM III and DSM IV are atheoretical, polythetic and prototypic systems of classification, Torgersen et al, (1993) recommended that the most productive approach is to create dimensions of personality disorder criteria by means of factor analysis, to study the etiology of the dimensions, and to apply cluster analysis to reach the final aim - to find a way of classifying, not criteria, but individuals. This will be the aim of the follow on study of the patients' profiles.

The sex differences in the Broadmoor sample indicate that the female offender patients are more paranoid, antisocial, narcissistic and histrionic than the male offender patients. Given that they represent the margins of any sample distribution, including the psychiatric population, it is not inconsistent to suggest that the DSM clustering is inappropriate as an indicator for correlations among the personality disorders. The fact that neither the male nor female groups conform to the rationally derived DSM clusters might indicate severely fragmented, irrational personality traits.

As a screening instrument, the MMPI PD scales present the opportunity of identifying discreet groupings of patients within the psychopathic and mentally ill Mental Health Act classifications. Such discriminations may signify significantly different underlying personality traits demanding different treatment approaches. This would require further clinical investigation.

The follow on study will present the opportunity, given the time period it encompasses, to evaluate the relationships of Axis I (mental illness diagnosis) with Axis II (personality disorders), using several time points (Klein, 1993, Blackburn 1993). This study has established limited reliability of the Broadmoor MMPI PD scales, for their psychometric properties, based on internal consistency. Its cautious use as a screening instrument could be recommended. It is not reliable enough as a diagnostic tool and should be used in conjunction with structured interviews, rating scales and classification criteria (DSM IV and ICD 10).
The content validity of the scales is questionable with the exception of schizotypal (STY) and schizoid (SZD). It is significant that these constructs closely resemble the symptomatology associated with certain forms of schizophrenia (Axis I). This might assist in identifying the comorbidity of schizophrenic like symptoms with psychopathically disordered patients for whom certain psychotropic medication appears to alleviate their distress and fearfulness. As such, it could contribute to the treatability of psychopaths debate. This hypothesis will be followed through in the follow on study.

The mentally disordered population represented by the Broadmoor sample differs significantly on the MMPI PD scales than the psychiatric population of the More norms. An investigation of the underlying pathologies of the patients will be a key element in Broadmoor MMPI PD study II. Sex differences will also be more closely examined to test the hypothesis that the female patient group are qualitatively different from the male group requiring different treatment methods and levels of security.

It will also be the purpose of Broadmoor MMPI PD study II to investigate the hypothesis that the Broadmoor cluster A represents a psychopathic syndrome, which if found to be correct, will inform treatment plans and outcome studies.

This study has established limited reliability for the use of MMPI PD scales to investigate the personality profiles of Broadmoor patients. While allowing for certain limitations in the application of MMPI to personality disorders, this reliability study ensures that any clinical inferences drawn from the data will be made with caution ensuring that the data set (approximately 3000 profiles), representing 35 years of personality assessment, will be interpreted appropriately and no conclusions drawn beyond the limited strength of its reliability.
6. References


Archer, RP. (1992) Minnesota Multiphasic Personality Inventory-2. In JJ.Kramer and JC.Conoley (eds.) Eleventh mental measurement yearbook (pp. 558-562). Lincoln, NE: Buros Institute of Mental Measurements.


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Duckworth, JC. and Levitt, EE. (1994) Minnesota Multiphasic Personality Inventory-2. In DJ. Keyser and RC. Sweetland (eds.) *Test critiques (Vol. X).* Austin, TX: Pro-Ed.


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Hathaway, SR. and McKinley, JC. (1951) *Minnesota Multiphasic Personality Inventory manual* New York: The psychological Corps.


Morey, LC. (1991) *Personality Assessment Inventory professional manual*. Odessa, FL: Psychological Assessment Resources


Nichols, DS. (1992) Minnesota Multiphasic Personality Inventory-2. In JJ. Kramer and JC. Conoley (eds.) *Eleventh mental measurement yearbook (pp. 562-565).* Lincoln, NE: Buros Institute of Mental Measurements.


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Wiener, DN. and Harmon, LR. (1946) *Subtle and obvious keys for the MMPI: Their development*. Minneapolis, MN: VA Advertisement Bulletin No. 16.


SECTION FIVE: MSc DISSERTATION

SOCIALIZATION OF SERIOUS SEXUAL OFFENDERS

Thesis submitted for M.Sc. in Clinical Psychology at
the University of Surrey
Copyright 1989
ABSTRACT

The aim of the project was to study the effects of early childhood socialisation in the histories of serious sexual offenders. Particular associations were sought between sexual and physical abuse experiences in childhood and the nature of the violence and sexuality expressed in the adult offences. Attention was given to the consistency of relationships with care givers and significant role models. Use was made of rationally and clinically derived rapist typologies to generate profiles of offenders and to identify the possible aetiology of the underlying motivations in sexually aggressive behaviour. The research was conducted within the theoretical framework of facet theory and associated data analysis of Smallest Space Analysis (SSA), and Partial Order Scalogram Analysis (POSA). A sample of patients from a Special Hospital were interviewed, whose index offences were of a serious sexually aggressive nature, against post-pubertal females. Analysis of the data demonstrated that the concept of socialisation provides a coherent framework which may explain the context from which maladaptive sexual and aggressive motives and behaviour emerged. Sexual abuse in childhood by female members of the family was interpreted as abuses in power and intimacy, and was related to the amount of violence shown in serious sexual offences in adulthood. The results are discussed in relation to their implications for clinical practice and further research.
ACKNOWLEDGEMENTS

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1. INTRODUCTION

1.1 Introduction

The aim of this research is to demonstrate the clinical usefulness of profiling techniques, derived from Facet theory methodology and data analyses, to a U.K. sample of serious sexual offenders, investigating the coherence of socialisation as a framework which may explain the context from which maladaptive sexual and aggressive behaviour emerge.

The classification of sexually aggressive offenders has generated profiles on which treatment programmes have been based. Classificatory systems are theoretical models of types and categories of general application in offending behaviour, leading to psychological profiles of distinguishing features in personality and motivation, inferred from empirical collections of data. Classification complements clinical knowledge from which profiles are derived.

Recent validation analyses of rationally derived typologies (Prentky, Knight, & Rosenberg, 1988) confirmed the inter-rater reliability of the broad categories associated with sexual aggression. It was argued that discrepancies in motivational assignation would be reduced if the clinician had knowledge of childhood attachment experiences which might indicate the origins and causes of the distorted sexuality and aggression displayed in sexual offences.

Landmarks in the classification literature will be traced which led to the development of typologies emphasising the motivational components of sexually aggressive offences.

1.2 The classification of sex offenders

1.2.1 Earlier studies

Earlier attempts to classify sexual offenders was based on broad psychiatric diagnostic categories (Frosch and Bromberg, 1939), or on specific offence characteristics, such as the nature of the act (Mohr, Turner & Jerry, 1964), or victim characteristics (MacDonald, 1971). Investigators have either looked at the incidence of neurosis, personality disorder and psychosis among sexual offenders (Glueck, 1956), or have compared psychiatric or legal sub-groups on various dimensions (Kozol, 1963).

Classificatory systems began to develop a more structured approach by comprehensively examining the motivational aspects of offending behaviour. This approach, more constructive than the earlier work, generated and tested rational taxonomies based upon clinical experience.
with sex offenders. It provided the groundwork for future developments. Guttmacher and Weihofen (1952) proposed one of the earliest rapist typologies. Psychoanalytic in its roots, it differentiated three rapist sub-types on the basis of motivational components in the offence. They distinguished between "true sex offenders", sadistic rapists and aggressive offenders. However, the three way division, which was derived from collective experiences within clinical interviews, lacked any evaluation analysis. Kopp (1962) was less concerned with motivational aspects and focused instead on the character structures of sexual offenders. He dichotomised them according to ego components of syntonicity and dystonicity in the offence behaviour. Type I was described as compliant, while Type II was described as an aggressive psychopath. Gebhard, Gagnon, Pomeroy and Christenson (1965) divided sex offenders into fourteen categories, according to the gender and age of the victim and the use of force. Besides conducting intensive personal interviews with more than 1500 convicted sex offenders, they had access to the sexual histories of thousands of persons who were never convicted of a sex offence, which they used as controls. It was regarded as a commendable attempt at classification, despite confining the study to "whites" in the social system. They claimed that minority groups, as defined by "race differed so significantly in their sexual behaviour and attitudes as to be considered separately.

1.2.2 Recent studies

Recent studies have merged the two disparate strands of historical research by a) focusing on the motivational and conflict history of sexual offenders, and b) attempting to formalise observations into a testable classificatory system (Prentky, Cohen and Seghorn, 1985).

By organizing the data base into reliable scales and dimensions of behaviour, it was possible to generate profiles of offenders. Derivatives from those earlier typologies can be identified in two recent classification systems. Both incorporated specific motivational themes and personality styles, were based on clinical experience, and were the result of collaborative work at the Massachusetts Treatment Center (MTC) for sex offenders. They were a) the Cohen model, and b) the Groth model.
1.3 **The Cohen model**

The Cohen model was derived from the work of Cohen, Garafalo, Boucher, and Seghorn (1971) which focused on the relative contributions of sexual and aggressive motives. It was argued that although all rape includes both motivational components, for some rapists the aim was primarily aggressive - to humiliate, defile or injure: whereas for others, the aim was primarily sexual, with a relative absence of violence and brutality. The crossing of these motivational components yielded four types. In the compensatory type, the displaced aggression appeared to be instrumental and the aim was hypothesised to be primarily sexual. In the displaced aggression type, the aim was primarily aggressive, with sexual behaviour being used for the secondary purposes of defilement and harm. In the sex-aggression type, sexual and aggressive motives were intertwined, and there was sadistic quality to the assault. In the impulse type, the assault was predatory and neither sexual nor aggressive motives appeared to be important.

1.4 **The Groth model**

The Groth model owed its origin to Groth, Burgess and Holmstrom (1977) who adopted a taxonomy that underscored power and anger as the primary motives in rape. From their clinical experience with convicted offenders and with victims of reported sexual assaults, they found that in all cases of forcible rape, three components were present: anger, power, and sexuality. The hierarchy and interrelationships among these components, together with the relative intensity with which each is expressed, vary from one offender to another. In every act of rape, both aggression and sexuality are involved, but it is clear that sexuality becomes the means of expressing needs and feelings that operate in the offender and underlie his assault. The offending behaviour is motivated more by retaliatory and compensatory motives than by sexual ones, and is regarded as a pseudo-sexual act, complex and multi-causal, addressing issues of hostility (anger) and control (power) more than desire (sexuality). The question is left unanswered as to why sexuality becomes the mode of expressing power and anger, and of discharging tension and frustration (Groth, 1979).
1.5 Best available typologies

The two models were independently refined and differed on the emphasis placed on the motivational components hypothesised to underlie sexual aggression. Accepting these taxonomic systems as the best available typologies about how rapists might be classified, there was no data on their reliability.

1.6 The validation of the Cohen model

The taxonomy system that had some empirical validation was the Cohen model. Prentky et al. (1985) refined the system and tested its reliability. They found that simply looking at the two primary motives of sex and aggression failed to capture the heterogeneity of the offenders observed in clinical practice. They recognised the need to examine motivational histories and how they were lived out in the offence (Seghorn and Cohen, 1980). Designing a system that accurately reflected the decision making process, required simultaneous attention to the relative importance and meaning of both sexual and aggressive motives in all rape offences, as well as the role of impulsivity in the life history of the individual. Independent assessment of these motivational themes resulted in the conceptualisation of a sub-typing process in terms of a three step decision tree. The resulting model required 1) an initial decision concerning the meaning of aggression in the offence, 2) a decision concerning the meaning of sexuality in the offence, and finally 3), a decision concerning the relative amount and quality of impulse-control in the life history of the individual.

Since the adoption of the revised system, more than 200 offenders have been classified, and a series of validity studies carried out by the same research and clinical team at MTC.

1.7 The reconceptualization of the Cohen model

The first study by Prentky et al. (1988) led to a reconceptualization of those aspects of the system which had been the sources of greatest error in the decision process. While the first decision was intended to capture the quality and degree of aggression in the offence, one third of all inter-rater disagreements were due to difficulties in assessing the qualities of expressive aggression. It was clear from this initial discrepancy analysis that overt behaviour was not sufficient for making a reliable instrumental versus expressive differentiation in aggression. It was necessary to make a clinical inference regarding the internal motivational state of the
offender. This would be a totally speculative undertaking, as most of the data was from records and archival material. To overcome this, any further research must address motivational history as perceived by the offenders themselves. They concluded that the major distinctions in the profile have some discriminatory power and should be retained viz., the meaning of the aggression in the offence, and the amount and quality of impulse control in the life history of the offender. However, from their analysis, they suggested that impulsivity required sub-dividing according to the developmental stage in which acting out behaviour first became manifest. This dimension did not emerge as an effective group delimiter because approximately three quarters of all offenders classified were rated as high in impulsivity. They did find in their sample that judgements of higher impulsivity were associated with a wide variety of non-criminal, anti-social behaviour and a number of criminal offence variables. Early aberrations in adaptation and maturation appeared to antecede a pattern of anti-social acting out in adolescence and adulthood (Knight and Prentky, 1987). The impulsive and anti-social variables were subsumed under a factor labelled "social competence" which had emerged as a major but unspecified discriminator which required clarification if the validity and reliability of the system was to be improved. This point was advanced in the second study in a series of validation analyses.

1.8 Validation of the revised Cohen model

R. A. Knight and R. A. Prentky (1989) implemented an approach, developed by Skinner (1981), which integrated classification theory and methods. It was based on construct validation using cluster analytic procedures. They applied the methodology to the revised rapist taxonomy and attempted to integrate a rationally devised model with its empirical operationalization. They found that the types in the taxonomy were too heterogeneous to profit from discrepancy analysis because the system failed to include important discriminators like social competence. Because the criteria for assignment to groups were too loosely defined, decisions would be made, in the absence of a characteristic, by default. They revised the typology by reversing the top-down dendrogram to a data driven, inductive, bottom-up process. The instrumental versus expressive aggression distinction was no longer a preemptory discriminator and therefore the major source of inter-rater error was removed. Social competence was identified as playing a major role in discriminating between types. They introduced two new types to accommodate aggressive offenders who did not match the characteristics of either the displaced anger type or the sadistic
type viz., the pervasively angry and the muted sadistic. Among other changes, life-style impulsivity was divided into adolescent and adult components. They hoped that the twice revised typology adequately incorporated the consistencies observed among rapist sub-groups. They concluded that the revised system required validation.

1.9 Further revision of the Cohen model

The final validation study in the series was conducted by Knight and Prentky (1989). It focused on the caretaker and institutional histories of the subjects in order to identify markers which might indicate the origins of the sexually aggressive motives of the offence. They found that sexual and non-sexual aggression in adulthood were related to distinct aspects of the developmental histories of their patients. In early childhood, caretaker inconsistencies were related to the amount of sexual aggression in the offence, while childhood and juvenile institutional histories were associated with the amount of non-sexual aggression exhibited in their offence history. Sexual deviation within the family system was related to increased sexual aggression. The results suggested that the quality of early attachments and the experience of sexual abuse as a child, may be important to the understanding of sexual aggression in adulthood. Reliable indicators were sought from the quality of early inter-personal attachments which might further test the validity of the profiling system, and enhance its predictive value in making accurate decisions about motivational aspects in the overt offence behaviour.

1.10 Conclusions from the Cohen validation studies

The conclusions from the final validation study of the revised Cohen model contained four hypotheses. The first was that family inconsistency is related to the amount of sexual aggression displayed in the offence. Secondly, that sexual and physical abuse in childhood were related to the amount of aggression shown in non-sexually specific criminal behaviour. The third hypothesis was that the role of social competence will act as discriminator in distinguishing types. And a fourth hypothesis stated that attachments in childhood would emerge as a major discriminator among types of offenders. It is the intention of this research to re-phrase these hypotheses in the terminology of socialisation rather than of attachment theory on which the Cohen model depends, and in terminology drawn from the Groth model.
1.11 Hypotheses for present study

1. That early socialisation experiences of serious sexual offenders will provide a coherent framework which might explain the emergence of maladaptive sexually aggressive behaviour.

2. That sexual and physical abuse in childhood, as understood as abuses in power and intimacy, are related to the amount of aggression shown in sexually aggressive offences in adulthood.

1.11.1 Rationale for first hypothesis

The rationale for the choice of socialisation as a conceptual framework in preference to attachment theory, requires a) an analysis of the conceptual base of the Cohen Model, beginning with its source references and its uncritical acceptance of Freudian theory, and b) the merits of socialisation versus attachment as conceptual frameworks.

1.11.2 An assessment of the revised Cohen model

An assessment of the seminal papers from which the Cohen model was derived shows a preponderantly psychoanalytic conceptualisation. This included many implicit but unchallenged concepts with regard to the interrelationship of sexual and aggressive impulses. It reflected the Freudian and neo-Freudian understanding of the developmental levels of those impulses, ego interests and attitudes, defensive structures, unconscious fantasy, the mode of object relations and the levels of these ties. There is sparse reference to any theoretical underpinnings with regard to personality theory in their account of the development of the typology. It suggested an uncritical acceptance of the psychoanalytic theory of sexuality and aggression. Freud wrote that the sexuality of most males contains an element of aggressiveness - a desire to subjugate. The biological significance of it seemed to lie in the need for overcoming the resistance of the sexual object by means other than of wooing.

"Thus sadism would correspond to an aggressive component of the sexual instinct which has become independent and exaggerated and, by displacement, has usurped the leading position" (Freud, 1962).

In Freudian theory, it is taken as axiomatic (the original insight deriving from early clinical work) that the path to adult sexuality begins in early childhood. Sexual development is mediated through the family, and in particular, through the child's relationship with its parents. For all
children, the earliest love-object is the mother, and specifically the breasts from which the first sexual pleasure is forthcoming, along with physical nourishment. Children, according to the theory, thus desire their mother's body but they have to learn that they cannot possess it. It is within this complicated process that the Cohen model seeks to identify the traumatic childhood experiences at those crucial points which distorted and thwarted healthy development. However, psychoanalytic authors appear unable to decide whether psychic life is determined by family structures, or vice versa. On the other hand, by emphasising male and female sex role stereotyping, the focus of the debate has switched to the influence of socialising factors, more than instinctual ones, underlying the development of sexual and aggressive motives (Brownmiller, 1975). In a recent investigation into motives in sexual murders, Cameron and Fraser (1987) wrote:

"Once we start to think about the way social arrangements must determine psychic life, it might well seem as if complex psychoanalytic accounts of the latter are superfluous in discussions of sadistic sexual murder."

1.11.3 Socialization versus attachment

It is the contention of this study that the concept of socialisation provides a more coherent framework than the concept of attachment, in which to assess developmental issues in childhood. A theoretical basis for this position is contained in the thesis by Kaye (1982) that "parents create persons", which lends itself to constructive treatment programmes in adult life. The latter thesis is a study of socialisation based on two principles: that parents adjust to the inborn rhythms of the infant-organism, to his/her repetitive action patterns and attentional preferences: and that a dynamic transactional praxis exists between the infant and adult when the infant-apprentice internalises conventional and cultural gestures. Clinical application can be made of the theory, by offering a conceptual schema to re-create an optimal frame, or environment, within which to implement the two principles on which emotional stability depend. The general criticism of the Cohen model which is being met here, is its lack of a treatment framework in which to apply profiling techniques. The Kaye thesis offers an alternative to the use of attachment theory in clinical practice, without in any way wishing to belittle that particular research tradition (Belsky and Nezworskii, 1988). Any criticism of attachment theory does not imply a denial of the value of a large body of research in the realm of socio-emotional development that has indicated
theoretically meaningful associations between development in infancy and later functioning (Bretherton, 1985). It does criticise any implication that individual differences in the security of attachment are deterministic of later developments, and that the individual will be impervious to subsequent experiences. The concept of socialization will offer a constructive framework in which to infer the effects of family inconsistencies and social incompetence, referred to in the Cohen hypotheses, more so than the narrower concept of attachment.

1.11.4 Family inconsistencies

Prentky et al. (1988) found in their sample that caretaker inconsistencies were related to the amount of sexual aggression in the offence, while childhood and juvenile institutional histories were associated with the amount of non-sexual aggression shown in over-all offence behaviour. Their definition of inconsistency is related to the amount of presence or absence of significant caregivers. No attempt was made to suggest how the experience of the inconsistencies had any relevance to the offending sexual behaviour. It is suggested that, should such inconsistencies exist, the profiling methods of this research may highlight inherent dynamics.

1.11.5 Social competence

The claim that the role of social competence emerged as a discriminator between types of aggression shown in the offence, begs the question that social competence is a unidimensional concept. Prentky et al (1988) subsumed impulsive and anti-social acting out variables under a factor labelled "social competence". It has been shown in research that acting out and disorders of impulse control should be distinguished, and cannot be considered part of the one orthogonal dimension of behaviour (Frosch, 1977; Lacey and Evans, 1986).

In summary, the re-phrased experimental hypothesis concerning the coherence of the concept of socialisation, is intended to provide a descriptive framework within which to study the dynamics of childhood learning experiences which may explain adult behaviour, and will focus on a) family inconsistency, b) social competence as understood as an aspect of social skills and assertion, and c) acting out, as an aspect of childhood disorders.
1.12 Rationale for second experimental hypothesis

The second experimental hypothesis of this study mirrors the Cohen hypothesis that sexual and physical abuse in childhood are related to the amount of aggression shown in the offence, but qualifies the abuses as "abuses in power and intimacy." The qualification emanates from the alternative motivational components of the Groth model.

1.12.1 Assessment of the Groth model

The fact that the Cohen model alone had undergone validation analyses, has tended to draw attention from the conceptual bases for the Groth model. The classifications of Cohen and Groth are in fact similar, both in their derivation from clinical interviews and theoretical underpinnings. The Groth model is a variation of the psychoanalytic stance, in which rape is viewed as a pseudo-sexual act, complex and multi-causal, addressing issues of hostility (anger) and control (power) more than desire (sexuality). Power is defined as the offender's desire to possess the victim sexually. The model lends itself to validation through the administration of productive measures of power motivation developed by Veroff (1957), and revised by Winter (1973).

Recent research has confirmed Groth's position linking power with sexuality and intimacy (McAdams, 1988). It was found that a person high on power motivation and low on intimacy will lack the capacity to engage in intimate relationships, which is regarded as the "sine qua non" of psychosocial development in adult years. The sexual response was regarded as the physical component of a wider affiliative need. There are many reasons on theoretical grounds that the development of the sexual motive should relate to the development of the affiliative and intimacy motives. The research by Buhrmester and Furman (1987) highlighted the importance of the development of companionship and intimacy in early childhood. Companionship was defined as engaging in enjoyable activities with others, whereas intimacy was defined in terms of disclosing personal thoughts and feelings with significant others. Eight components to intimacy, elicited from a general population, were: affection, cohesion, expressiveness, compatibility, conflict resolution, sexuality and identity (Waring, Tillman, Frellick, Russell and Weisz, 1980).

To summarise, the second experimental hypothesis addresses issues regarding the association between the sexual and physical abuse in childhood and the amount of violence displayed in sexually aggressive offences in adulthood. The components of the sexual and aggressive motives seen to underlie the behaviour will be understood in terms of power, anger, intimacy and sexuality.
2. Aims and hypotheses

2.1 Aims of the study

The aims of the present study were the identification of characteristics in a U.K. sample of serious sexual offenders which were related to the form and quality that their early socialisation took in childhood. The coherence of the concept was intended to provide a descriptive framework within which to study the dynamics of childhood experiences which may explain motivation in adult behaviour. Attention will be given to aspects relating to family stability, and the identification of inconsistencies in its structure and functioning, which were perceived as disruptive in the lives of the offenders. Associations will be sought between sexual and physical abuse in childhood and the amount of aggression displayed in sexually aggressive behaviour.

2.1.1 Limitations of the aims

The aims of the study are limited to a description in a U.K. sample. The context from which the samples were derived in U.S. research, bears little resemblance to the U.K. context and no cross referencing can be done until the establishment of a U.K. data base, where none exist at the moment. The Cohen and Groth samples came from the Massachusetts Treatment Center that provides for the diagnostic evaluation of anyone convicted of sexual assault in regard to the probability of repetition and dangerousness. Knight, Prentky, Schneider and Rosenberg (1983) acknowledged the uniqueness of their sampling methods and the difficulties of the applicability of their findings. The criteria for selection were based on the extremes of the offender population in a state larger than England, with differing legal and sentencing statutes, differing approaches to imprisonment and treatment, and different law enforcement priorities and logistics. The incomparability of the samples, for the same reasons, has been accepted in offender psychological profiling methods in criminal investigations (Canter, Heritage, & Kovacik, 1989). One can accept the fruits of the U.S. endeavours as representing the most reliable commentary on the classification of sexual offenders, and can incorporate some of their conclusions in the formulation of testable hypotheses to be applied to a British sample of sexual offenders.
2.2 Hypotheses

1. That the socialisation of serious sexual offenders provides a coherent framework in which to study profiles which may explain the emergence of maladaptive sexually aggressive behaviour, displayed in adult offences.

2. That sexual and physical abuse in childhood, as understood as abuses in power and intimacy, are related to the amount of aggression shown in sexually aggressive offences in adulthood.

3. Methodology

3.1 Introduction

To test the hypotheses, it was necessary to collect information from serious sexual offenders about their early childhood experiences with care givers. This would be done by a) an archival search to identify potential subjects, and as a base for cross referencing the consistency of the accounts; b) the use of a structured interview to elicit information about childhood memories, which would not be available in the records; and c) a semi-structured interview to verify the motivational components in the offence by recording the unprompted recollections of the offenders.

3.2 Archival data collection

This data was necessary to test the consistency, if not the veracity, of the subjects accounts of their offences and personal histories. If consistency existed, the probability is greater that the accounts of their perceptions of childhood experiences will be free from deliberate error, omission or confabulation. (Scully and Marolla, 1985).

3.3 Structured interview.

The data on childhood experiences, as perceived by the patients, was elicited by a structured interview schedule based on two sources; a) the developmental interview schedule (Research Staff of the Massachusetts Treatment Center [MTC], 1987), and b) a checklist of behavioural indicators for childhood disorders (Ressler, Burgess and Douglas, 1988). Responses to the questions could vary within a seven point scale indicating a) a negative (non applicable), or b) no memory of the indicated event, or c) positive (applicable), its frequency and the perceived degree of its effects. Having recorded an unprompted reply to each question, where
applicable, the interviewer would invite elaborations to allow both parties to explore the meaning of the questions and answers involved. Any misunderstandings could be checked immediately. This procedure combined the rigidity required for reliable analysis of the results (the unprompted replies), showed awareness of the ethnographic potentialities in the situation (Agar, 1986), and facilitated more meaningful interpretation of the data.

3.4 Semi-structured interview

The aims of this interview were to establish and verify the nature of the offence, and to elicit the motives for the offence as the offender recalled them. This would establish the motivational and functional aspects of their sexually aggressive behaviour. From the operational definition established by MTC research group, violence in the offence was measured according to the degree of physical injury suffered by the victim. This does not imply that some rape and serious sexual attacks are not violent. Nothing can diminish from the seriousness of any form of sexual intrusion or violation. Rather, it was an attempt to distinguish motivational components of instrumental and expressive types of sexual assaults.

The consistency of accounts given in the interview could be checked with the records. A statement of motivation was rarely recorded in reports, but was sometimes inferred by the person making the report. The reliability of retrospective statements could be compromised unless error sources were reduced to a minimum. The offender's initial encoding of past experiences as a mental construct would have been influenced by the affective intensity of the event itself, and its recall may have been repressed or distorted.

The relationship between method and substance in qualitative research is such that a researcher cannot be concerned about the reliability of methods in abstract. The techniques adopted to reduce retrospective biases were a) the avoidance of leading questions (Baddeley, 1979), b) the imposition of a minimum cognitive load, c) the encouragement of respondents' recall of inexplicable memories which, by their nature, were less amenable to reconstruction (Tagg, 1985), and d) plausible explanations, such as forgetting or retrospective reconstruction, were sought at the time (Levy, 1981).
4. Data analysis

4.1 Introduction

The Massachusetts Treatment Center have used variations in factor analytic methods without supporting their choice. Factor analysis often places considerable emphasis on the orthogonality of the dimensions it derives, and presumes a linear relationship among the variables. A methodology and analysis which allows the structure of relationships to freely emerge would be preferable, in which a scientist-clinician is able to pin point the locus of the interplay of variables in a data set (Donald, 1987). The responses of the first interview, based on a structured schedule, would be amenable to multi-variate statistical analysis. The information elicited from the second interview which employed a more open format would be the object of content analysis to abstract and categorise the common features.

From the heterogeneous nature of the population of sexual offenders, their profiling will involve a multitude of variables within which patterns of association will emerge between current behaviour, offence characteristics and relevant developmental antecedents. There is a need to consider the relationships between numbers of variables rather than taking one variable at a time, and is part of the process of multi-variate analysis.

4.2 Tactics

Having derived a questionnaire and a data matrix of the responses, multidimensional scaling procedures were carried out as outlined by Shye (1985), and Shephard, Kimball Romney, and Nerlove (1972). The advantages of these procedures are that they allow one to discover patterns in the data which were not readily apparent. The programmes used were the Guttman-Lingoes non-metric programme series (Lingoes, 1973), comprising the Smallest Space Analysis (SSA), and Partial Order Scalogram Analysis (Shye, 1985).

4.2.1 Smallest space analysis

Smallest Space Analyses (SSA) were used as step prior to the application of Partial Order Scalogram Analysis (POSA), which was the principal procedure on which the analysis was carried out. The responses to the questionnaire generated a large number of variables and so the first step was to calculate a matrix of associations between all of the items. The programme then plotted each of the items into a n-dimensional space.
Items were abstracted which were most highly correlated and maintained a conceptual unity. This procedure prepared the way for the use of POSA.

4.2.2 Partial order scalogram analysis (POSA)

Guttman (1950) initially proposed scalogram analysis as a method for simultaneously ordering persons and variables with respect to some underlying continuum. POSA offers a theoretical framework for examining relationships among profiles. Where the rank of the item response categories for all items have a common direction (e.g., high to low in terms of the behaviour being measured), and where the items collectively measure a common construct (e.g., family stability), the items are said to have a common range. A rationale exists for examining structural relationships among respondents in terms of the degree to which they possess some attribute, and in terms of the type of attribute manifested by their profiles.

With POSA, the concept of a Guttman Scale, or "perfect scale", forms the core to its rationale. The items in a Guttman scale have the properties of being ordinal and cumulative. For instance: the items in a Guttman scale may be slapping, punching and burning which are ordered according to their cumulative degree of physical abuse. It is highly likely that a person who was punched was also slapped, and that anyone who was burned was also slapped and punched. If a number of degrees of types of physical abuse are ranked in order, then many subjects will endorse the early ones, indicating that they have been slapped and punched etc., but sooner or later they will "cross over" and fail to endorse such remaining items as there might be (e.g., cut with a weapon etc.). This cross over point is their individual score and from it one knows precisely which items they must have endorsed. The procedures of POSA are designed to test a given universe of a group of items for scalability (Oppenheim, 1966). It enables a researcher to see how far people's responses deviate from the ideal scale patterns. It is extremely rare for empirical data to conform to perfect scales (Shye, 1978). Therefore the notion of a partial order provides a framework for representing similarities and differences among all observed profiles, scale-types and non-scale types alike.

POSA was used with the reduced set of variables from SSA analyses. These variables became the basis of a new data matrix. As the response items were scored on a seven point scale, they
were transformed into dichotomous data according to how they deviated from the mean. Such a procedure allows one to reveal structures which may not be so apparent when including the full range of available scores.

4.2.3 Content analysis

Content analysis is a qualitative research method concerned with intentions in the interpretation of communications where quantitative analysis is not sensitive enough (Mostyn, 1985). It is a diagnostic tool used to identify specific characteristics of communications systematically and objectively, in order to convert the raw material into scientific data (Krippendorff, 1980). The content area on which the analysis was to be done within the semi-structured interview, was reduced to a minimum for the purposes of this research. Verification of the offence category in terms of intent, as perceived by the offender, was accomplished by cross reference with the archives. The remaining decisions were a) to categorise the antecedents to the event, and b) to categorise the motivation energising the event. The former decision was free from evaluation and less liable to subjective bias and fulfilled the demands of this present undertaking. The second decision was open to subjective researcher bias but the area was minimised for content analysis. The lack of precision in the analysis of content analysis data is said to account for low reliability (George, 1959). Reliability was enhanced by using prepared categories of sexuality, power, and aggression, based on the research findings of Groth et al (1977), and Prentky et al (1988), and intimacy and power from McAdams (1988), and Waring et al (1980).

Problems of validating the results of qualitative content analysis, where intuition and interpretation play a major role in the analyse are obvious. The only type of validity relevant to qualitative data according to Krippendorff (1980) is "semantic validity", or the degree to which a method is sensitive to the symbolic meanings in context.
5. Implementation

5.1 Sample

An underlying premise on which the study is based is that profiling has important value in the treatment modality. A sample of serious sexual offenders was sought from one of the Special Hospitals in which treatability has particular relevance. Such hospitals exist for persons who "... require treatment under conditions of special security on account of their dangerous, violent or criminal propensities." (NHS Act 1977).

5.2 Approval

Approval for the study was given by the ethics committee of the hospital, and an honorary contract with security acceptance was arranged. The collection of the data was accomplished through daily attendance at the hospital on a full time capacity over two months.

5.3 Archival search

The consultant psychiatrists (Responsible Medical Officers) were asked to identify those patients with an offence history (index or otherwise) of serious sexual offences against post-pubertal females. Predicting similarities in motivation and in early childhood experiential antecedents, subjects were sought whose offending history included rape, attempted rape, and sadistic sexual motivation in physical violation.

5.3.1 Archival data

A file was created from hospital records on each of 31 patients identified by the RMO's. Each contained information on their life histories as reflected in psychiatric, psychological, social work, admission and conference reports, court statements and police records, which sometimes contained witness statements.

On closer scrutiny of the files, some of the identified group were excluded whose offence history did not meet the criteria. On the advice of staff, the present mental state of some patients precluded their selection for interview. Of the remaining twenty three patients, three declined to be interviewed. Twenty patients agreed to be interviewed and signed the consent form. It was clearly stated to each patient that no information from the interviews would be passed to the
professional groups or administration, without the expressed wish of the patient, and within the normal constraints of ethical practice. Each interview, whether structured or not, took on average two to three hours.

5.4 **Structured interviews.**

Patients were asked to remember, as best they could, how they were as children (birth to twelve). They were asked to rate the extent to which a particular event or experience affected them on a seven point scale. The questions addressed the following areas:

* perceived childhood temperament.
* family system characteristics.
* family system functioning.
* childhood physical abuse.
* childhood sexual abuse.
* childhood sociability and disorders.

5.5 **Semi structured interviews**

Following the structured interview, a second session was organised with each patient, to elicit accounts of their index offence history, its antecedents and consequents, and their perceived motive (i.e., what? how? and why?). To strengthen the reliability of the content analysis, the categories chosen from the research literature were:

a) violence in the offence: initiatory, reactive, retaliatory,

b) references to power,

c) references to concepts of sex role differentiation,

d) references to sexuality and intimacy.
6. Results

6.1 Sample characteristics (n=20)

6.1.1 Offence indicators

Rape 14
Attempted rape 5
Serious wounding/sexual motive 1


Psychopathic disorder(pd) 12
Mentally ill(mi) 7
Psychopathic/mentally ill(pd/mi) 1

6.1.3 Mental Health (1983) Act: section

37/41 (direct from court) 12
47/49 (transfer from penal system) 6
38 (interim hospital order) 1
3 (compulsory admission order) 1

6.1.4 Ages of sample

<table>
<thead>
<tr>
<th>Index offence</th>
<th>now</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-20</td>
<td>1</td>
</tr>
<tr>
<td>21-30</td>
<td>17</td>
</tr>
<tr>
<td>31-40</td>
<td>2</td>
</tr>
<tr>
<td>41-50</td>
<td>0</td>
</tr>
<tr>
<td>51-60</td>
<td>0</td>
</tr>
</tbody>
</table>

6.1.5 Other sample characteristics

Criminal record (non-sexual) 16
Criminal record (previous sexual) 11
Head injuries reported 10
Institutional history 6
Psychiatric history 11
Sexual deviations 7
Deviant fantasies 7
Married (incl. common law) 9

273
Ethnicity  European  17  
          West Indian  2  
          African  1  
Filial status  natural  18  
              Adopted  2  
Birth order  eldest  6  
              only child  4  
              youngest  3  

6.1.6 Offence characteristics

Burglary  3  
Indoors  11  
Violence (excessive injury to victim)  12  

6.1.7 Victim characteristics

Known to offender  7  
Ethnicity  European  20  
Ages  12-16  17-20  21-30  31-50  50+  
       3  4  8  4  1  

6.2 Results of structured interviews

Figure 1 (next page), represents the results of SSA analysis on variables which had been extracted from the original data matrix. The partitioning was superimposed subsequently according to the conceptual harmony which groups of variables appeared to share. The results represent eight constructs which are visible in the plot as

a) presence,
b) modelling,
c) disciplining: verbal and non-verbal,
d) attention,
e) sociability,
f) acting out:
            affective
            behavioural.
By means of Partial Order Scalogram Analysis (POSA), the variables subsuming each of the constructs were examined separately to look for structure and internal consistencies. The profiles will be presented in the form of a Guttman scale and a brief discussion will highlight the psychological sense of the item groupings and the construct subsuming them.

6.2.1 Presence of caregivers

The stability of the structure of the childhood environment was assessed by the consistency of the presence of significant caregivers, and the number and effect of separations. Partitioning in the SSA had placed four variables in close proximity suggesting an association. These four items were:

1. The presence of the mother (or mother substitute as in adoption or fostering).
2. The presence of the father or substitute.
3. The effects of separation from caregivers; either parents or substitutes: through divorce, hospitalisation, imprisonment, job demands, or statutory care.
4. The presence of significant others (excluding siblings) who lived with the patient as a child, such as step-parents, grandparents or other adult relatives, and other adults (e.g., parent's lover).

In terms of the properties of a Guttman scale, 16 of 20 patients scaled according to the accumulative effects of the absence of mother(M), the absence of father(F), the number and effects of separations(S), and the presence of significant others(O), and is presented in table 1.

Table 1. Caregiver presence

<table>
<thead>
<tr>
<th>CAREGIVER PRESENCE</th>
<th>M</th>
<th>F</th>
<th>S</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTHER (M)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2 (5)</td>
</tr>
<tr>
<td>FATHER (F)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2 (1)</td>
</tr>
<tr>
<td>SEPARATIONS (S)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1 (3)</td>
</tr>
<tr>
<td>OTHERS (O)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2 (3)</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1 (5)</td>
</tr>
</tbody>
</table>

COEFFICIENT OF REPRODUCIBILITY = 0.94
COEFFICIENT OF SCALABILITY = 0.85
Commentary

The number in parenthesis represents the number of patients who endorsed that particular profile. The five central profiles represent the perfect Guttman scale and is endorsed by 16 out of 20 patients. The additional profiles indicate that there is another dimension to be accounted for in the dynamics of the items. The rank order may indicate that it was the presence or absence of the mother which had the most telling effect on the lives of the patients. A profile of 2222 (a cumulative score of 8) indicates that when the mother was not present (2), one can also expect the absence of the father(2), together with a lack of continuity in terms of separation(2) from those others (2) substituting for the absent parents. This situation was endorsed by 5 patients. Presuming that a patient's profile conforms to the properties of the Guttman scale, an individual summed score can indicate the relevant effects of each item on the scale. It is important to investigate the rationale for those profiles which deviate from the scale. A profile of 1221 is endorsed by three patients. No realistic summed score can be given as the profile lacks the cumulative property and is not comparable with those of the Guttman scale. This deviant profile pattern indicates the presence of the mother, the absence of the father, and a lack of continuity with the mother as the result of separations, with no adequate parental substitute. It suggests that they were left to their own devices, or were in the care of siblings. The patients can easily be identified from the data and the next step would be to refer to the original clinical sources to investigate the underlying dynamics which have caused the profile to deviate. The other deviating profile of 2121 is also non-comparable, and identifies the only patient out of twenty who experienced the loss of the mother but did have the father's presence. This presence lacked continuity and was not supplemented by the presence of an parental substitute. The extra dimension to which the deviant profiles belong appears to be related to the absence of an adequate parental substitute and lack of adult supervision.
6.2.2 Modelling effects of caregiver communication

Among a group of variables encompassing a range of possible caregiver modeling behaviours, were included affection, social skills, socializing, emotionality, acting out, alcohol abuse and violence. From them, three emerged which represent a subrange of behaviours which most affected the patients:

1. Occasions when they witnessed arguments (A).
2. Occasions when they witnessed verbal abuse (V).
3. Occasions when they witnessed attempts at communication (C).

The configuration of the profiles is presented in table 2.

Table 2. Modelling effects

<table>
<thead>
<tr>
<th>MODELING ARGUMENTS (A)</th>
<th>VERBAL ABUSE (V)</th>
<th>NO COMMUNICATION (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>V</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2 (8)</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>2 (1)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2 (3)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1 (4)</td>
</tr>
</tbody>
</table>

CR = 0.93  CS = 0.82

Commentary

Four profiles scaled unidimensionally and were endorsed by 16 of 20 patients. There was one deviant profile endorsed by the remaining 4 patients and signifies the existence of a second dimension. The rank order indicates that if arguments caused significant disruption, then one could presume the existence of the extremes of verbal abuse and a total lack of productive communication. The deviant profile 221 indicate a very inconsistent atmosphere in which attempts at communication were interspersed with a great amount of argument and verbal abuse, or perhaps the actual communication attempts took a very harsh form.
6.2.3 Attention from caregivers

Of the forms that attention to their needs took, three items emerged which had the properties of a Guttman scale. The items were:

1. attention from caregivers who showed an interest in the daily events in the life of the child (E).
2. attention to the problems and difficulties encountered by the child (P).
3. attention to the feelings of the child (F).

The configuration of the profiles is presented in table 3.

Table 3. Attention from caregivers

<table>
<thead>
<tr>
<th>ATTENTION</th>
<th>EVENTS (E)</th>
<th>PROBLEMS (P)</th>
<th>FEELINGS (F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E P F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 2 2 (13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 2 (4)</td>
<td>2 1 2 (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 1 (1)</td>
<td>1 1 2 (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 1 1 (0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CR = 0.97
CS = 0.80

Commentary

The rank order indicates that if no attention was paid to the daily events of the patient as a child, then one can presume the absence of attention in solving their problems, and certainly no attention being given in response to the expression of their feelings. Three profiles emerged which were endorsed by 18 of 20 patients, having the properties of the Guttman scale. The two profiles which deviate from the scale indicate that attention to problems had particular significance. If attention was given to problems, then no attention was paid to daily events or feelings. This suggests a concentration on negatives to the exclusion of positives (eg including lack of reinforcement). If attention was not paid to problems, it appears that attention was more positive and focussed on daily events and feelings, but possibly lacked support in problem solving and possibly in conflict resolution.
6.2.4 Discipline: non-verbal

From an array of variables describing possible forms of discipline, two groups emerged which appeared to be related to verbal and non-verbal forms, with three items in each. The three items which represented a pattern of non-verbal disciplining were:

1. the experience of withdrawal of privileges which had been bestowed on them (P);
2. the withdrawal of entitled enjoyment as a form of punishment (E);
3. the experience of physical exclusion which frequently took the form of being locked in a room (Ex).

Of the six profiles, four conformed to a Guttman scale and was endorsed by 17 of 20 patients. The configuration is presented in table 4.

Table 4. Disciplining: non-verbal

<table>
<thead>
<tr>
<th>DISCIPLINING [NON VERBAL]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIVILEGES WITHDRAWN (W)</td>
</tr>
<tr>
<td>ENJOYMENT PREVENTED (E)</td>
</tr>
<tr>
<td>PHYSICAL EXCLUSION(Ex)</td>
</tr>
<tr>
<td>W</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>CR = 0.95</td>
</tr>
<tr>
<td>CS = 0.88</td>
</tr>
</tbody>
</table>

Commentary

35% of the patients did not experience any form of non-verbal discipline. It was found, by referring to the data, that they experienced extreme forms of verbal abuse.
6.2.5 Discipline: verbal

A pattern of three items emerged which were related to how verbal discipline was experienced by the patients. They were:

1. when the reprimand or correction took the form of a verbal insult (I):
2. when the reprimand manipulated guilt (G) feelings:
3. when the reprimand was expressed in terms of total rejection (R).

The profile configuration is presented in table 5.

Table 5. Disciplining: verbal

<table>
<thead>
<tr>
<th>DISCIPLINING [VERBAL]</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERBAL INSULT (V)</td>
</tr>
<tr>
<td>GUILT (G)</td>
</tr>
<tr>
<td>REJECTION (R)</td>
</tr>
<tr>
<td>V G R</td>
</tr>
<tr>
<td>2 2 2 (13)</td>
</tr>
<tr>
<td>2 1 2 (3)</td>
</tr>
<tr>
<td>1 2 2 (2)</td>
</tr>
<tr>
<td>1 1 2 (1)</td>
</tr>
<tr>
<td>1 1 1 (1)</td>
</tr>
</tbody>
</table>

CR = 0.97
CS = 0.93

Commentary

The cumulative scale suggests that when a patient claimed to have been rejected, one can also expect the manipulation of guilt feelings and verbal insults. 17 of 20 patients endorsed profiles conforming to the properties of the perfect Guttman scale. 60% scored 6 indicating the extremes of the scale and indicating constant exposure to verbal abuse. One deviant profile 212 was endorsed by three patients which indicated that rejection and insult were associated but not guilt. The subtleties of this interplay warrants further investigation of those patients on a dimension often associated with psychopathy, in terms of an apparent lack of guilt feelings and compunction.
6.2.6 Sociability

Of the list of variables associated with time spent with others, three items emerged:

1. the presence of friends (F):
2. time spent alone (A):
3. time spent in the company of siblings (S).

The profile configuration is presented in table 6.:

Table 6. Individuality: sociability

<table>
<thead>
<tr>
<th>INDIVIDUAL [SOCIABILITY]</th>
<th>PRESENCE OF FRIENDS (F)</th>
<th>TIME ALONE (A)</th>
<th>TIME WITH SIBLINGS(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F A S</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 2 2 (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 2 (1)</td>
<td>2 2 1 (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 1 2 (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 1 1 (6)</td>
<td></td>
</tr>
</tbody>
</table>

CR = 0.96
CS = 0.90

Commentary

Five profiles emerged, four of which conformed to the properties of the Guttman scale and included 18/20 patients. The scale indicates that if the patient had no experience of close friends in childhood, they would have experienced a lot of loneliness but did not consider the company of their siblings as an acceptable substitute, whose company they generally shunned. The scale and the fifth profile 221 indicate that it was possible to have the company of siblings but feel very alone. Presence alone does not overcome loneliness.
6.2.7 Acting out: behavioural

From the list of childhood disorders used by Ressler et al (1988), and questions on acting out in the Developmental Interview Schedule (MTC 1987), only seven items emerged as being associated. They appeared to represent two dimensions of acting out behaviour a) behavioural forms, and b) affective forms. The behavioural items were:

1. swearing (S);
2. moodiness (M);
3. shyness (Sh).

Six profiles emerged, of which four conformed to the properties of a Guttman scale and were endorsed by 18/20 patients.

The scale configuration is presented in table 7.

Table 7. Acting out: behaviourally

<table>
<thead>
<tr>
<th>ACTING OUT [BEHAVIOURAL]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWEARING (Sw)</td>
</tr>
<tr>
<td>MOODINESS (Mo)</td>
</tr>
<tr>
<td>SHY (Sh)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Sw</th>
<th>Mo</th>
<th>Sh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2  (2)</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1  (1)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1  (8)</td>
</tr>
</tbody>
</table>

CR = 0.97
CS = 0.92

Commentary

Swearing in childhood was not common. The scale suggests that if swearing was indicated, then on the cumulative scale, one would expect the presence of moodiness and shyness. 40% of the sample did not act out on any of these items, suggesting the possibility of internalising their fears and feelings. Their profile on the affective scale would test this hypothesis.
6.2.8 Acting out: affective

The items on this scale were:

1. the extent to which they admitted having imaginary friends (I);
2. the extent to which they worried (W);
3. the extent to which they were tense (T);
4. the extent to which they were unhappy (U).

A configuration of five profiles is presented in table 8.

Table 8. Acting out: affective

<table>
<thead>
<tr>
<th>ACTING OUT (AFFEFFECTIVE)</th>
<th>IMAGINARY FRIENDS (I)</th>
<th>WORRIED (W)</th>
<th>TENSE (T)</th>
<th>UNHAPPY (U)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I W T U</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 2 2 2 (5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 2 2 (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 1 2 2 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 1 1 2 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 1 1 1 (8)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CR = 0.99  CS = 0.97

Commentary

On the affective scale six profiles emerged, with five conforming to the properties of a Guttman Scale endorsing 19/20 patients. This indicates an almost perfect unidimensional scale. Closer inspection of the items shows a scale ranging from psychotic-like to neurotic-like behaviour, stirring up the debate as to whether neuroticism and psychoticism are unidimensional. If a person in the sample had imaginary friends, one can presume the accompanying experiences of worry, tension and unhappiness. The single deviant profile indicates a lack of physiological tension despite the existence of the other items.
6.3 Semi-structured interview

6.3.1 Sexual/physical abuse/violence

To assist in testing the experimental hypothesis which linked physical and sexual abuse with violence in the offence, the relevant list of variables confirmed in the semi-structured interviews were cross tabulated. The variables were:

1. Sexually abused in childhood;
   a) by an adult,
   b) by maturer other,
   c) by both groups,
   d) not at all

2. Physically abused in childhood: yes/no.

3. Violence in the offence: yes/no.

The results of the content analysis is presented in table 9.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Physical abuse</th>
<th></th>
<th>No physical abuse</th>
<th></th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>excessive violence</td>
<td>reduced violence</td>
<td>excessive violence</td>
<td>reduced violence</td>
<td></td>
</tr>
<tr>
<td>Sexual abuse by adults</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Sexual abuse by others</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Sexual abuse A &amp; O</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No sexual abuse</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Totals</td>
<td>7</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 9. Sexual and physical abuse childhood experiences of the sex offenders

Commentary

It appears that those patients who displayed the most violence in their sexual attacks on female victims were those who had been both physically and sexually abused by female family confidants in their childhood.
7. Discussion

7.1 Socialization as coherent framework

Justification for the hypothesis that socialisation was a coherent conceptual framework within which to study early childhood experiences, appears to have been borne out by the number of potentially maladaptive patterns of behaviour, associated with the processes of socialisation, which emerged from the data through POSA analysis. Discussion of each of those patterns was deliberately included in the results section, in order to elaborate on the psychological sense of the items in the generation of the profiles. It remains to summarise the profiles as they relate to the concept of socialisation.

7.1.1 Offender profiles

The profiles which emerged from the data, offer ways of measuring the functioning of each patient in his interaction within identified spheres of the social systems of his childhood. Eight scales emerged from the patients' responses with sufficient coherence and structure to suggest that they represent important markers of childhood experiences. Two were related to the consistency of the social environment in terms of a) the presence of care givers, and b) the modelling effects of adult relationships. Three were related to the interaction between care giver and patient in terms of a) the attention which was paid to cares and feelings, and b) the verbal and non-verbal forms which disciplining took. Three were related to the patients manner of relating to systems beyond the family, in terms of a) sociability, and b) disorders suggestive of underlying pathology. Social competence, as construed by Prentky et al (1988) as the interaction between the acting out scales and the sociability scale, did not emerge as a discriminator within this group, which is contrary to the predictions of the revised Cohen model. Results from other investigations have shown sexual offenders to be less socially skilled than demographically similar groups of men with no criminal or psychiatric history, but it could not be specified that this difference actually implied incompetence (Stermac & Quinsey, 1986).

The profiles offer a coherent approach to the study of the socialising processes of childhood. These profiles of early socialising experiences can be augmented by the addition of external variables e.g. established characteristics of each patient. In this way, further associations can be observed between early experiences and adult behaviour. To demonstrate
this, the emerging profiles of the eight patients (40%) who were sexually abused by family members, and displayed extremes of violence in their offences, will be studied.

7.1.1 Profiles in context

There were three constructs in which their profiles conformed to the properties of the perfect Guttman scale, and therefore are directly comparable and uni-dimensional. These were a) attention given to cares and feelings, b) forms of discipline, and c) affective acting out behaviour. The remaining constructs may be compared to the degree of maladaptive behaviour but because their profiles are not uni-dimensional, they lack comparability with regard to the specific types of behaviour.

The profiles on "attention to needs" construct reveals that seven patients have a maximum cumulative score of 6 (222), and one patient with an isolated score of 5 (122). The profiles indicate the total lack of attention to practical and emotional needs. As their profiles indicated on the "presence" construct that the mother was consistently present, it suggests that the omnipresent care giver (mother) did not create a framework within which the patient as a child felt secure and attended to. One can only surmise that there was a lack of synchrony in the earlier attachment period too. An essential quality demanded of a care giver is the ability to attend to the needs of the child by adequately responding to accurately assessed signals. Each patient perceived that he had been rejected in childhood, as indicated in the "discipline" profiles, and his implicit trust in the relationship betrayed in the abuse of power and intimacy, as indicated in the form which the sexual abuse took.

Their scores on "acting out: affective" construct, though comparable, show no homogeneity but are helpful in indicating its form in individual cases.

There are important external variables which can be mapped against the emerging profiles. Each patient in this group has been classified as psychopathic. The Special Hospital RMO's have the onerous responsibility of diagnosing patients according to a legal definition of psychopathy where no medical one exists. No diagnostic category exists within ICD-9 or DSM-III-R. It is likened to a personality disorder, and therefore their treatment will be more analogous to remedial education than to medical treatment (Blackburn, 1989). The socialisation, as evidenced in the histories of these patients is not mediated by punishment, but is more amenable to the modelling influences of care giver behaviour in communication. The emerging profiles appear to support the approach which construes psychopathy in terms of the
consequences of failures in the socialising environment which produces maladaptive but active coping styles. There is evidence to suggest that punitive behaviour in parent figures is likely to provide models for inappropriate behaviour, as well as generating an "oppositional" approach to personal relationships (Marshall and Barbaree, 1984). Their inability to maintain intimate relationships, and their lack of experience of appropriate behaviour in the resolution of conflict, are seen as behavioural deficits resulting from their socialisation history (Stermac and Quinsey, 1986).

7.2 Sexual and physical abuse: the second hypothesis

The second hypothesis focused on the association between the offender as the victim of abuse in childhood and the offender as the perpetrator of abuse in adulthood. The results of interviews with this sample of serious sexual offenders indicated that an association existed between sexual and physical abuse in childhood and the amount of violence in the offending behaviour. The interview data revealed that all patients (30%) who were both sexually and physically abused were violent in the offence. It transpired that the person who abused them sexually was an adult female member of their own family.

7.2.1 Offender as victim

The data revealed that sexual abuse "per se", in isolation from physical abuse, did not predict violence; nor did physical abuse in isolation from sexual abuse predict violence. However, in this sample, sexual abuse in which the abuser was a female member of the family was predictive of violence. On inspection of the data on the two patients, who had been sexually abused by other than adults, and had been violent in the offence, identified adolescent female siblings as the abusers. Therefore, all patients (40% of total sample) who had been sexually abused by members of their own family displayed an extreme amount of violence in the offence. The discriminating influence for this group was the experience of sexual abuse in childhood by female members of their family. The relationship between victim (person abused) and the perpetrator (abuser) is a familial one such that there is likely to be greater bonds of implicit trust. An abuse of this trust may be interpreted as an abuse in the power held by senior members of a family over junior, and a distorted expression of the inherent intimacy. Therefore the motivation, primary or secondary, underlying the offence and displayed in the anger and
violence, could have been generated by the abuse of the trust and power within intimate relationships in childhood. By cross referencing with the data from the semi-structured interviews, the three patients with displaced anger mentioned abuse of trust as a secondary motive. The finding that abused sexual offenders were victimised by family members, is consistent with the literature that associates relationship of offender to victim with severity of outcome, particularly when one considers the degree of violence evident in the offences (Seghorn, Prentky and Boucher, 1987).

7.3 Sexual aggression: a learned behaviour

The overall trend of the evidence of socialisation links sexual aggression to environmental variables and suggests that sexual aggression, like all behaviour, is learned (Scully & Marolla, 1985). The exploration and resolution of intra-familial conflict which pre-disposed the patient to offend in adult life, constitute an important task for the therapist, despite a guarded prognosis. The interpretation put on the actions of their victims by offenders can only reflect commonly held beliefs and mythology surrounding the male and female roles in sexuality, and is a function of the ongoing forces of socialisation and culturization.

The present research findings suggests that the sexual component in sexually aggressive behaviour, is closely related to early socializational praxis, and is therefore situational more than an idiopathic dysfunction.

7.4 Summary

The aim of the project was to study the childhood socializational experiences of serious sexual offenders drawn from a special hospital population in U.K. The framework was sufficiently coherent to allow structured patterns of behaviour to emerge from maladaptive childhood experiences which might indicate the aetiology of maladaptive adult behaviour patterns. Within this framework, specific associations were found between adult sexually aggressive offences and childhood experiences of sexual and physical abuse. As identifying the type of aggression displayed in the offence was an important dimension in their classification, knowledge of the motivations underlying the sexually aggressive act would be a more reliable method of achieving this aim than inferences drawn from observations of overt or reported behaviour. The most reliable source for this information was the offenders themselves, as any
other method would be speculative. Even this more direct approach was vulnerable to selective bias in the encoding and recall of past experiences.

Accepting the premise that an act has underlying motivation, conscious or unconscious, the aetiology of aggressive sexual motives associated with sexually aggressive behaviour in adulthood may have developed in response to maladaptive experiences in childhood. Through the use of partial order scalogram techniques, profiles of patients have emerged, giving structure to a mass of variables which was not immediately apparent. These profiles have served to emphasise both the heterogeneity of the population of serious sexual offenders and, at the same time, has provided comparable scales and scores to assess their homogeneity. Patterns of behaviour distinguishable in the data, indicated the possible aetiology of persistent maladaptive behaviours reflected in adult behaviour. It remains to be seen if these patterns are merely aspects of a single continuum, or can be considered as distinct facets of behaviour and, as such be accounted for separately in treatment.

7.4.1. Treatment implications

The offence history of patients is the obvious focal point for treatment. Decisions concerning the release of patients will be based on an evaluation of the effectiveness of treatment schedules. Effective treatment will address the components of the offence, and reliably modify the patient's behaviour to the extent that the factors which must be considered in the prediction of subsequent behaviour are clarified, while the actual prediction itself will remain probabilistic. It has been recognised that violence is a function of personal attributes beyond the focal question of the offence, and that these attributes must become the target of treatment. The sexuality and violence displayed in the offence play a function in the life of the offender. Their function will have roots which may be identified by studying his functional developmental history. The notion of a developmental functional history (DFH) of an individual has its roots in Aristotelian philosophy (Siverstein, 1988). Its application to profiling research introduces two complementary components viz., the use of functional analysis as an assessment instrument, and functional analytic psychotherapy as a specific treatment approach (Kohlenberg & Tsai, 1987). An individual's functional history is cumulative and developmental in nature. The first event in each DFH, its actual generation, is particularly vital in fixing its operating characteristics. DFH approach emphasises the distinction between classification systems as the search for universal
principles, and individual profiling as the description of unique particulars within a given focus. Motives can be regarded as a personality disposition for the individual (McClelland, 1987), in rule-following purposive behaviour (Peters, 1958), and as such serve to energise, direct and select behaviour and experiences, within the context of constraints and opportunities afforded by the environment. Hegeman and Meikle (1980) stressed the importance of finding out how offenders perceived their own motives and life history, as an offender will display a degree of consistency in sexually motivated behaviour thus concretizing a functional relationship. Sexual behavioural assessment, as part of the treatment process, should be focused at least as much on determining the complex components influencing the patient's motivation as on the nature of their understanding of the concept of sexuality and power (McConaghy, 1988). Attention to the early interpersonal socialisation of the patient may indicate the aetiology of motives which developed as functional, maladaptive and learned mechanisms in response to perceived threat to personal identity. Personal causation is made up of cognitions, skills, and motivations. If aspects of the motivational component have been identified, as this study suggests, cognitions and skills must be addressed, in order to maintain a comprehensive approach to treatment which accepts the interplay between the components. Hence, an early generation of motivations to anger, in response to the violation of trust and intimacy, coupled with an inability to appropriately cope with conflict and its resolution, will presume an embryonic cognitive schema which encompasses it. The cognitive schema provides the vehicle by which motivations are sustained - the mediating construct which explains the persistence and development of the effects of earlier experiences.

7.5 Research implications

Research should closely ally itself to clinical needs. The constructs which emerged from the childhood experiences of the offenders have not been established as distinct domains and it is likely that they share a common facet. This can be pursued using facet theory methodology and related statistical packages which have been specifically designed to test the existence of independent constructs, and whether they share a common range within a unique facet (Canter, 1985). For example, the associations between non-verbal disciplining, verbal disciplining, physical abuse and sexual abuse which emerged from the data suggest that they belong to the one domain, and patients could be measured according to how far along the scale their cross over
point was. Their cross over score could be predictive of the amount of violence used in sexually aggressive offences. As physical and sexual abuse did not emerge as distinct discriminators, it is possible to hypothesize that they are elements of a facet related to personal integrity.
REFERENCES


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