

**Association between recidivism risk and scores
on psychological measures and outcome of therapy
in sex offenders. Dissimulation, coping and defence
styles in sex-offenders, non-sex offenders and non-offenders.**

Submitted in partial fulfilment of the requirements of the
degree of Doctor of Clinical Psychology

By

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Abstract

This thesis comprises three studies. Study 1 investigates the relationship between scores on psychological measures and risk of recidivism in sex-offenders. Study 2 investigates the relationship between level of recidivism risk and outcome of group therapy for sex-offenders. Study 3 investigates dissimulation, and defence and coping styles in sex-offenders, non-sex offenders, and non-offenders.

Study 1 found no significant relationship between level of risk of recidivism and scores on measures of anger, self-esteem, psychosexual variables and cognitive distortions in one hundred and sixteen sex-offenders. Only the variable anger control increased consistently between risk of recidivism categories (although this effect was not significant). These findings are discussed with regard to differences in sex-offenders (i.e. appetitive vs non-appetitive: Hudson and Ward, 1999) and research indicating that *acute* changes in psychological state significantly predict recidivism (Hanson and Harris, *submitted*, a, b).

Study 2 compared outcome after twelve months of group therapy for sex-offenders at lower ($n = 28$) and higher ($n = 22$) risk of recidivism. No significant group differences were found between the groups on three outcome measures, although summary data were consistent with the hypothesis. Possible reasons for the failure to find significant group differences are discussed, including the possibility that treatment dropouts and therapy exclusion criteria may have affected the results.

Study 3 found that a discriminant function analysis significantly discriminated between sex-offenders, non-sex offenders and non-offenders. Dissimulation was

significantly more prevalent in the sex-offender group. A discriminant function labelled adaptive coping was the best discriminator between the sex-offenders and the other groups (non-offender, non-sex offender).

A speculative model of sex-offending in non-appetitive sex offenders based on the results of Study 3 and a finding from Study 1, and incorporating failure in self-regulation (Muraven and Baumeister, 2000) and the cognitive deconstructed state (Baumeister, 1991) is presented. Clinical implications of the research considered within the thesis are presented last.

Introduction

Research indicates that the prevalence of sexual assault (SA) is high. For example, nearly thirteen per cent of a community sample of four thousand and eight women in the USA reported being raped at least once in their lifetime (Resnick, Kilpatrick, Dansky, Saunders and Best, 1993). Research on adult male victims of sexual assault is rare, but an epidemiological survey of two thousand four hundred and seventy four men in England found that nearly three per cent had been forced into sexual contact by another person after the age of sixteen (Coxell, King, Mezey and Gordon, 1999). A recent review of the prevalence of child sexual abuse (CSA) found rates ranging from seven per cent to thirty six per cent for women and eight per cent to twenty nine per cent for men (Finkelhor, 1994). Victims of SA experience a number of psychological disorders and medical injuries (see Resnick, Acierno, and Kilpatrick, 1997 for a review). A review of the cost of treatment of victims of crime in the USA in 1991 estimates the cost of such treatment to be nine point seven billion dollars, with over four billion dollars estimated to be spent on victims of child sexual abuse (Cohen and Miller, 1998: Table 1).

Table 1 **Estimated value of counselling/treatment received by victims of various types of crime (millions of 1991 US dollars: adapted from Cohen and Miller, 1998).**

Crime category	Total (based on mean costs)
Recent child sexual abuse	618
Child sexual abuse years earlier	4025
Attempted or completed rape	863

It is clear that the effective management of persons who sexually offend is important to reduce victim distress and to reduce the health care burden of sexually aggressive behaviour. Effective management will only be possible if the aetiology of sexually aggressive behaviour is adequately understood. Such an understanding could lead to optimal therapeutic interventions and/or management designed to reduce the risk of re-offending.

Theories of sexual assault

There currently exist a number of theories that aim to explain various forms of sexual aggression. Hudson and Ward (1998) have argued that these theories comprise three levels:

Level 1. Theories at this level are multi-factorial and aim to provide an integrated and thorough explanation of sexual offending. Hall and Hirschman's (1991) quadripartite model is an example of such a theory. According to this theory, the likelihood of sexually aggressive behaviour is increased by the presence of four critical components:

- physiological sexual arousal;
- cognitions conducive to, or in justification of, sexual aggression;
- dyscontrol of affective states and;
- personality problems.

Level 2. Theories at this level focus on specific factors which are deemed to be relevant aetiologically. Research in areas such as cognitive distortions, empathy deficits, and coping skills are examples of research conducted at this level.

Level 3. These are so called 'micro-theories' (Hudson and Ward, 1998) which seek to describe the behaviour sequences involved in sexual offending. In fact, these are less theories than they are descriptions of behavioural sequences coupled with a description of emotional/motivational factors at various stages of the sequence. This information then forms the basis for developing theories.

Most research on sexual offenders has been conducted at level 2. Typically, clinical observations and/or review of case material leads to inductive hypotheses about the relative frequency and/or intensity of cognitive distortions, emotional state(s) or behaviour in sex-offenders. Offenders are then compared with controls on measures of the cognitive distortion or emotional state(s) or behaviour and significant differences between sex-offenders and controls are construed as evidence for the role of that variable in sexual offending.

Level 2 theory research

Level 2 research has been conducted on both dynamic (i.e. principally psychological constructs such as anger which change over time and can be changed in therapy) and static variables (such as a history of child sexual abuse, which cannot be changed).

Research has found differences between sex-offenders and non-sex offenders/controls on a number of dynamic variables (see Marshall, Anderson and Fernandez, 1999 for a review). Areas of inquiry have included: victim empathy (see Marshall, Hudson, Jones and Fernandez 1995); self-esteem (see Marshall, Anderson and Champagne, 1996); cognitive distortions (See Ward, Hudson and Johnston, 1997 for a review); anger (Groth, 1979); previous sexual abuse (Weeks and Widom, 1998) and psychosexual variables (Nicholls and Molinder, 1984). Case record research (Pithers, Beal, Armstrong and Petty, 1989) shows that a number of these psychological difficulties are precursors to sexual aggression (Table 2).

Table 2 Precursors of sexual offending (Adapted from Pithers *et al.*, 1988).

Precursor	Rapists (%)	Paedophiles (%)
Anger – generalised	88	32
Anger - towards women	77	26
Cognitive distortions	72	65
Deviant sexual fantasies	17	51
Disordered sexual arousal	69	57
Low self-esteem	56	61
Low victim empathy	61	71
Lack of sexual knowledge	45	52
Social-skills deficit	59	50

Consistent with the data in Table 2 , Marshall *et al.* (1999) have argued that:

‘ ... a host of ... affective and cognitive states occur immediately prior to a rape and find expression in the behaviours of rapists during the assault ... various studies suggest that sexual motivation is not the only, or even the primary, force that drives sexual offending’.

This is likely true of most sexual offending, and level two theories have been incorporated into treatment programmes. For example, the Sex-offender Treatment Programme used by probation services in the UK incorporates treatment modules which address areas such as cognitive distortions, social skills, assertiveness and anger control (see Beech, Fisher and Beckett, 1998).

It is obvious that many of the precursors to sexual crime in Table 2 above are not specific to sex-offenders, or even offenders per se. The goal of research with sex-offenders is to identify variables which increase the risk of sexual offending. Thus, the goal is to identify offenders' *criminogenic needs* (Andrews and Bonta, 1996):

'Many offenders, especially high-risk offenders, have a variety of needs. They need places to live and work and/or they need to stop taking drugs. Some have poor self-esteem, chronic headaches or cavities in their teeth. These are all 'needs'. The need principle draws out attention to the distinction between criminogenic needs and noncriminogenic needs. Criminogenic needs are a subset of an offenders' risk level. They are dynamic attributes of an offender that, when changed, are associated with changes in the probability of recidivism. Noncriminogenic needs are also dynamic and changeable, but these changes are not necessarily associated with the probability of recidivism'.

In this thesis I briefly review the data on a number of level 2 theories. I then test the relationship between scores on measures of level 2 theories in men estimated to be at different levels recidivism risk according to their scores on a risk assessment scheme based on static risk variables. I also consider the relationship between risk level and outcome in therapy. Finally, I consider differences between defence and coping styles in sex-offenders, non-sex offenders and non-offenders since it has been

theorised that dyscontrol of affective states is implicated in sexual offending (Hall and Hirschman, 1991).

Anger

Groth (1979) has argued that the rape of women is primarily motivated by anger and a number of other negative emotional states rather than being primarily sexually motivated. One obvious difficulty with research in this area is that offenders may *report* that their behaviour was (partly or solely) due to a given situation and/or emotion as some form of post-hoc rationalisation of their behaviour. However, case work with sex-offenders does suggest that 'Unpleasant emotional states may trigger deviant sexual fantasies' (McKibben, Proulx and Lusignan, 1994) and this observation led these authors to conduct a study of the association between negative emotional states and deviant sexual activity. McKibben *et al.* asked imprisoned sex-offenders (thirteen rapists and nine paedophiles) to enter the following information into a computer every two days (thirty data entries per offender):

- the frequency of deviant and non-deviant sexual fantasies;
- whether masturbation took place to these fantasies;
- a mood rating;
- the presence/absence of interpersonal conflicts and;
- emotions aroused by conflicts.

For rapists there was a significant association between the experience of interpersonal conflict and deviant sexual fantasy ($p < 0.001$), negative mood and deviant sexual fantasy ($p < 0.001$) and between masturbation and deviant sexual

fantasy ($p < 0.05$). Negative emotions provoked by conflicts with others included anger (reported forty-one times); rejection (real or imaginary) by a woman (reported fifteen times); feelings of inadequacy (reported fifteen times); humiliation (reported forty-six times); and loneliness (reported sixty-four times). For paedophiles there was a significant correlation between deviant sexual fantasies and negative mood states only ($p < 0.001$). These findings are important since it is argued that deviant sexual fantasy and masturbation to same are likely to be the most powerful learning process to becoming sexually aroused by deviant stimuli (Laws and Marshall, 1990).

Non-deviant sexual fantasy and masturbation to same were independent of affective states and the presence of conflicts for rapists and paedophiles. Thus, while there is a clear distinction between fantasising about an illegal sexual act, and actually committing such an act, there is evidence that deviant sexual behaviour is associated with negative mood states (including anger) and interpersonal conflict in men who commit sexual offences against children and adults.

One of the few researchers to investigate female sex-offenders is Saradjian (1996). Saradjian did not find differences between three groups of female sex-offenders on self-ratings of 'aggressiveness' and a control group of matched female non-offenders. However, group sizes were small (Group A: offenders who targeted young children ($n=14$); Group B: offenders who targeted adolescents ($n=10$); Group C: offenders coerced by male offenders ($n=14$) and controls ($n=36$)) and the rating was a single item non-standardised question. Interestingly, Saradjian did report that

'Many women in each of the groups struggled ... to reach a decision. The struggle centred on the discrepancy between their feelings of aggression

and the expression of these feelings. Several women talked of feeling very aggressive at times but ‘holding’ or ‘swallowing’ these feelings’.

Thus, there is some suggestion that not only the level of anger an offender experiences, but also the way this anger is managed may be important in the aetiology of sexual offending.

Measures of trait anger and anger suppression from the State-Trait Anger Expression Inventory (STAXI: Spielberger, 1988) have been found to correlate significantly (Kalichman, Henderson, Shealy and Dwyer, 1992) with psychosexual and cognitive distortion measures in the Multiphasic Sex Inventory (MSI: Nicholls and Molinder, 1984; see Table 3). This is an important and practical finding since the MSI is used in more than one thousand four hundred hospitals, clinics and various other agencies in the assessment of sex-offenders (Nicholls and Molinder, 1984: this inventory is described in some detail in the method section).

Table 3 Correlations between MSI and STAXI scales for 139 men convicted of sexual offences against female children and adult women (adapted from Kalichman *et al.*, 1992).

MSI scale	Trait anger	Anger suppression
Sexual obsessions	0.54	0.52
Sexual dysfunction	0.26	0.41
Cognitive distortions and immaturity	0.43	0.49
Justifications	0.26	0.31

Saradjian (1996) has suggested a link between suppressed anger and subsequent sexual aggression. She argues that sexual aggression affords a relief of tension in the

aggressor. Thus, the frequent experience of anger (trait anger) which is not expressed appropriately (suppressed) may lead to the offender using an inappropriate means of expressing suppressed anger by being sexually aggressive toward another person. The correlation between the above anger measures and sexual obsessions is also important since it has been found (see later in this report) that sex-offenders use sex as a coping strategy.

There is indirect evidence that trait anger and anger suppression may be related to poor treatment outcome and risk of recidivism. A regression analysis of treatment outcome data on one hundred and twenty-two men convicted of sexual offences against children found that the MSI cognitive distortions and immaturity (CDI) scale was a significant (negative) predictor of overall treatment outcome and of the number of therapy goals completed (Simkins, Ward and Bowman, 1989). Further, scores on the CDI scale were significant (positive) predictors of clinician rated estimates of future recidivism (Simkins *et al.*, 1989). To reiterate, scores on the CDI scale correlated positively and significantly with trait anger and anger suppression scores (see Table 3 above).

Kalichman *et al.*'s data on the correlation between anger and cognitive distortions and sexual obsessions are important, but incomplete: they present data on only two STAXI scales (trait anger and anger suppression), but omit data relating to anger expression and anger control. The anger expression scale measures the frequency of use of certain expressions of anger (e.g., striking out, losing temper, slamming doors), while the anger control scale measures the frequency of use of anger control (e.g., controlling behaviour, being patient, calming down quickly). Anger

suppression and anger expression do not correlate (Spielberger, 1988; Pollans, 1983: in Spielberger, 1988) and are factorially orthogonal (Spielberger, 1988) and it is possible that scores on the anger expression scale may measure angry behaviour implicated in sexual assaults.

Anger control is also a separate factor in the STAXI which does not correlate with anger suppression, but does correlate with anger expression (Spielberger, 1988). Although a high score on anger control may seem desirable, this may not be so for sex-offenders for (at least) two reasons. First, a high anger control score coupled with high trait anger and low anger expression is associated with passivity, withdrawal and depression (Spielberger, 1988). Scores on a measure of depression are significant predictors of deviant sexual fantasies and/or behaviour (Bagley, Wood and Young, 1994). Second, since the scale measures the *frequency* of anger control it also suggests that persons with high scores on this scale are frequently angry. Thus, it would seem that high scores on this scale may be associated with the frequent experiencing of anger, and anger is associated with sex offending.

Measures of anger expression and anger control may also be important predictors of risk of sexual offending since a meta-analysis has found that sex-offenders who also have a conviction for a violent crime are at greater risk of sexual recidivism than those without such a history (Hanson and Bussiere, 1998). Indeed, anger has been proposed as a risk factor which should be considered in the assessment of recidivism risk (Hanson and Harris, *submitted*, b), and violent offences are included in risk assessment schemes which aim to predict level of risk of future sexual offending (e.g. Hanson and Thornton, 2000).

Self-esteem

The data from Pithers *et al.* (1989) suggests that low self-esteem is a very common precursor to sexual offending, and both Groth (1979) and Finkelhor (1984) argue for the importance of low self-esteem in sexual offences convicted against women and children. Marshall *et al.*, (1996) recently reviewed the evidence on self-esteem and sexual crime and concluded that low self-esteem has been demonstrated to be common in persons convicted of sexual crimes. For example, rapists have also been found to have lower levels of social self-esteem than non offenders (Marshall *et al.*, 1995). Further, Marshall, Cripps, Anderson and Cortoni (1999) found that social self-esteem (as measured by the Social Self-Esteem Inventory (Lawson, Marshall, and McGrath, 1979)) in child molesters is significantly lower than in offenders convicted of non-sexual offences and non-offenders ($p=0.006$; see Table 4).

Table 4 Mean Social Self-Esteem Inventory scores of child molesters, non-sex offenders and non offenders (adapted from Marshall *et al.*, 1999).

Child molesters	Non-sex offenders	Non-offenders
mean (s.d.)	mean (s.d.)	mean (s.d.)
125 (22.3)	153 (25.3)	140 (29.2)

Saradjian (1996) asked female sex-offenders to complete Rosenberg's (1965) self-esteem test to provide a measure of current self-esteem and also to provide retrospective ratings of self-esteem at the age they were sexually abusing children

(the control group was asked to provide ratings of self-esteem at the age when the sex-offender she was matched with started sexually offending). Sex offenders had significantly lower scores on current self-esteem and self-esteem at a previous time (see Table 5).

Table 5 Mean Self-Esteem Test scores in three groups of female sexual offenders and matched non-offending controls (adapted from Saradjian, 1996).

	Sex offender group A mean (range)	Sex-offender group B mean (range)	Sex-offender group C mean (range)	Non- offenders mean (range)
Self-esteem when offending	14.4 (9-21)	31.4 (19-44)	15.4 (8-24)	42.8 (33-54)
Current self- esteem	17.4 (9-26)	31.0 (17-44)	28.6 (14-36)	43.5 (34-53)

These data are interesting since they suggest that for two groups (A and B) of these female sex-offenders there seems little evidence of potential dissimulation of self-esteem scores for ratings provided at the time when they were actually sex offending. Saradjian contends that the difference in self-esteem scores when offending and current self-esteem in group C is attributable to these women being separated from their co-abuser and that this ‘... was the first time for years, if ever, that they had not received daily criticism, humiliation, and condemnation from those closest to them’.

Thus, there is some evidence that sex-offenders (both male and female) have lower levels of self-esteem than do non-sex offenders. However, Saradjian's data also show that for two of her sex-offender groups self-esteem at the time of offending was not greatly dissimilar to current levels of self-esteem.

Scores on a measure of self-esteem are correlated with other level 2 theory variables (Marshall, Champagne, Brown and Miller, 1997 and Marshall *et al.*, *in press*). Marshall *et al.* (*in press*) found that social self-esteem is negatively correlated with deviant sexual arousal and positively correlated with empathy for own victims

(
Table 6).

Table 6 Correlation between self-esteem and various psychological measures in child molesters (from Marshall *et al.*, 1999).

Variable	Social self-esteem
Intimacy	0.66
Loneliness	-0.60
Empathy for own victim	0.57
Emotion-focused coping	-0.59
Deviant sexual arousal	-0.36

Baumeister, Smart and Boden (1996) have also argued that self-esteem is associated with sexual offending. However, they argue that for some sexual offenders, overly favourable and inflated self-esteem may play a causal role in offending. For example, Baumeister *et al.* argue that persons with psychopathic disorder often have high levels of self-esteem, quoting Hare (1993) who stated that psychopaths have a

‘narcissistic and grossly inflated view of their self-worth and importance [and] a truly astounding egocentricity and sense of entitlement and see themselves as the centre of the universe, as superior beings’.

Research with non-psychopaths also supports the thesis that high self-esteem may be associated with sexual crime. For example, Scully and Marolla (1985) interviewed more than 100 convicted rapists regarding their motivations for rape. Evidence from interviews strongly suggested that rape was often motivated by the rapist’s sense of superiority which was challenged or disputed by another person, who was then raped as a way of re-establishing the rapist’s sense of superiority. Such a sense of superiority has also been implicated in marital rape. Many husbands feel entitled to sex in marriage and this entitlement has been expressed in the rape of wives (Finkelhor and Yllo, 1985). It is argued that such rapes allow some husbands to demonstrate their ‘control over a victim’ and to achieve some form of ‘victory’ over their wife (Baumeister *et al.*, 1996).

Entitlement to sexual access and/or control over a victims is a common cognitive distortion in sex-offenders (see following section) and thus, this form of egotism may be seen as an important (though very under-researched) factor in sexual offending. Baumeister *et al.*’s thesis is yet to be adopted by researchers in sexual offending, however. A striking example of this is the fact that Baumeister *et al.*’s paper is referred to in a recent book on cognitive behavioural treatment for sex-offenders (Marshall *et al.*, 1999), but evidence referred to in the book only supports the view that low self-esteem is associated with sexual offending.

Cognitive distortions

Various cognitive distortions are deemed to be implicated in the facilitation and justification of sexually aggressive behaviour (see Ward *et al.*, 1997 for a review). Importantly, it is argued that it is not the tendency to distort information which is singular to the sex-offender, but the content of their distortions and the behaviour associated with such distortions which is important (Marshall *et al.*, 1999).

Most studies of distortions have concentrated on a restricted range of cognitions (i.e. cognitive products such as attitudes and beliefs), and little attention has been paid to cognitive structures (e.g. schemata) or cognitive operations (information processing: Ward, Fon, Hudson and McCormack, 1998). Further, most research in this area is primarily concerned with post-offence cognitions. As such, this research neglects the role of various cognitive structures and operations that are likely to contribute to offending behaviour (Ward *et al.*, 1998). Of course, research into cognitions which may influence offending behaviour are still researched after offences have been committed, and the data obtained may represent post-offence rationalisations about factors causal to offending and/or dissimulation.

A number of studies have been conducted on the cognitive distortions or rationalisations provided by sex-offenders regarding their offending behaviour. An analysis of three hundred and fifty statements from child molesters coded into thirty-eight categories found that the most common beliefs about the offences were that victims enjoyed the experience, victims were not harmed, or placed the locus of blame on situational factors such as alcohol intoxication (Neidigh and Krop, 1992).

Excuses regarding offending provided by offenders have been found to belong to six categories (Pollack and Hashmall, 1991);

1. mitigating factors regarding the situation;
2. the belief that sex with children is not wrong;
3. insisting that the incident was not sexual;
4. mitigating factors regarding psychological state (e.g. momentary loss of control);
5. victim blaming and;
6. Denial.

Pollack and Hashmall (1991) found that the most common reasons sex-offenders gave for committing their crime(s) were alcohol intoxication, claiming victim consent and/or seduction by the victim, and loss of, or reduced mental control.

Ward and Keenan (1999) used interview and written descriptions of reasons given for offending in child molesters and identified five implicit theories. These theories include the belief that children are sexual objects, that some people (men) have greater entitlements than others, that sex with children can form some kind of retribution against the child and/or that children will not exploit the offender, belief in a lack of control over sexually abusive actions, and a belief that child sexual abuse (CSA) is unlikely to harm the victim.

A common theme in this research is the offenders' belief that sexually abusive behaviour is partly attributable to a temporary loss of mental control, and/or that children enjoy, and are not harmed by, sexual contact. Research has also found that

some rapists claim that women are sexually provocative and blame women for their own sexually abusive behaviour (see Beckett, Beech, Fisher and Fordham., 1994). Some exhibitionists also believe that women are interested in and impressed by the expositors' genitals (see Beckett *et al.*, 1994). Thus, there is evidence that cognitive distortions are not particular to child sex-offenders.

The MSI contains two scales which assess cognitive distortions. The Cognitive Distortions and Immaturity (CDI) scale assesses the extent to which the offender believes they are accountable for their actions. The Justifications (Ju) scale contains items related to various justifications that offenders might use in mitigation of their sexual offending (e.g. marital discord, alcohol intoxication, life stresses). As discussed above, scores on the CDI scale were significant predictors of clinician assessed risk of recidivism in a study of sex-offenders. Further, and consistent with offenders stating that they lack control over their actions, is the finding that CDI (-0.51, $p < 0.001$) and Ju (-0.33, $p < 0.005$) scores correlate significantly and negatively with locus of control scores (i.e. Low locus of control scores (indicating external locus of control) are correlated with high CDI and Ju scores: Fisher, Beech and Browne, 1997).

Psychosexual factors

There is evidence from self-report measures that sex-offenders experience a number of psychosexual difficulties. For example, Pithers *et al.* (1989) found that disordered sexual arousal and lack of sexual knowledge were both frequent precursors to sexual offending against adults and children. Nichols and Molinder (1984) also found that child molesters score significantly lower on scales of sexual knowledge than do non-

sex offending controls. Further, there is evidence that sex-offenders report less satisfactory sexual experiences than do non-sex offenders (Hanson and Woscynska, 1995). Further, Araj and Finkelhor (1986) have reviewed evidence that anxiety about sexual matters, disturbances in adult romantic/sexual relationships and repressive norms are all implicated in sexual attraction to children.

Poor sexual knowledge and sexual dysfunction could increase the likelihood of sexual offending by lowering self-esteem. For example, Kalichman *et al.* (1992) found that sexual dysfunction (as measured by the sexual dysfunction scale of the MSI) was negatively and significantly correlated with self-esteem in men convicted of sexual offences against adults and/or children. Obsession with sexual matters (again as measured by a scale of the MSI) is also negatively and significantly correlated with self-esteem (Kalichman *et al.*, 1992).

Offenders' scores on the above variables have been given importance in the likelihood of future offending since treatment programs in the UK now incorporate components to improve sexual knowledge and beliefs. Scales measuring sexual obsessions, atypical sexual outlet, and denial of sex drive and sexual behaviour are now included in the assessment of treatment outcome in sex-offenders (Beech *et al.*, 1998).

History of sexual abuse in sex-offenders

The assumption of an association between CSA and subsequent sexual offending is widespread (Weeks and Widom, 1998). Research on convicted sex-offenders has found high rates of CSA (e.g. Seghorn, Prentky and Boucher, 1987). For example,

Tingle, Barnard, Robbins, Newman and Hutchison (1986) found that fifty-six per cent of child molesters, and thirty-eight per cent of rapists, in their sample, reported CSA as a child. These percentages are high and are greater than percentages of CSA victims as identified by the majority of epidemiological work on the prevalence of CSA worldwide (Finkelhor, 1994).

A recent study of three hundred and one convicted offenders found that a history of CSA was more common in men convicted of sexual offences than men convicted of violent offences (odds ratio 2.49, 95% CI 1.1 – 5.6, $p < 0.05$: Weeks and Widom, 1998). These data are in contrast to data from a meta-analysis which found that child sexual abuse was not a predictor of recidivism (Hanson and Bussiere, 1998). This finding may be affected by a number of factors. First, it is known that studies use very different definitions of sexual abuse (Gorey and Leslie, 1997) and it is possible that variance attributable to the definition of sexual abuse could affect the association between CSA and recidivism. Second, the definition of recidivism also varies. Some studies in the meta-analysis included parole violations as a measure of recidivism (Hanson and Bussiere, 1998). Third, the source of recidivism data was not reported in fifteen of the eighty-seven research reports contained in the meta-analysis. Fourth, time at risk in the meta-analysis varied from six months to twenty-three years (median forty-eight months, mean sixty-six months: Hanson and Bussiere, 1998). Thus, it appears that a number of difficulties exist with regard to interpreting the results regarding any relationship between CSA and recidivism in the meta-analysis.

A further source of variance in the association between CSA and sexual offending is that offenders may claim that they were sexually abused when this was not in fact the case (Howitt, 1995). Bernard (1985) argues that many sexual abusers not only deny their offence but try to manipulate or deceive persons conducting assessments upon them. Doubts about the veracity of non-corroborated reports of CSA in sex-offenders have led to research on a putative association between CSA and subsequent sexually coercive behaviour in non-offender samples.

Community studies (e.g. Lodico, Gruber and DiClemente, 1996) of non-offenders have found an association between CSA and subsequent sexually coercive behaviour, and that this association holds for males and females. A study of 6224 school children in the USA found an association between the experience of sexual coercion and self reports of forcing someone else into sexual contact for boys and girls (although the relative risk was higher in boys (RR boys 14.6) than in girls (RR 3.5: Lodico *et al.*, 1996). Research on sexually abused adolescents has also found that male adolescents are more likely to report having 'forced someone for sex' than abused female adolescents (14.1% v 4.2%; odds ratio 3.72, 95% confidence intervals 2.6-5.3, $p < 0.001$: Chandy, Blum and Resnick, 1996).

Research on a community sample of adults has also found an association between CSA and SA. Stevenson and Gakarsky (1992) found that adult males with a CSA history were more likely to also report obtaining sexual intercourse by threat than were women with a CSA history. This is an important finding since it suggests that CSA is also associated with sexual offences committed against adults.

Bagley *et al.*, (1994) obtained self-report data on early experiences, life stresses, and symptoms of mental disorder in a community sample of seven hundred and fifty men aged eighteen to twenty-seven years. The men were asked about any experience of emotional and physical abuse, and the nature and duration of any sexual abuse. Assessment of mental health was undertaken using a number of self-report instruments. Data were also obtained on stress experienced in the previous six months and on lifetime history of suicidal behaviour (intent and attempt(s)).

The men were placed into three groups (no unwanted sexual experiences in own childhood, single unwanted sexual experience in own childhood, multiple unwanted experiences in own childhood) prior to univariate analyses on measures of sexual interest and activity with persons under sixteen years of age. Significantly higher proportions of men in the multiple unwanted experiences group reported being interested, very interested, or having had sexual contact with a girl aged under thirteen years, a male aged under thirteen years, or with a male aged thirteen to fifteen years. There was no significant association between group membership and sexual interest/activity with a girl aged thirteen to fifteen years.

To assess the relative strength of various possible predictors of sexual interest or activity with minors the two scales representing interest/activity with males aged thirteen to fifteen and with both males and females aged twelve years or younger were combined. A number of measures were significant predictors of scores on this combined measure (Table 7).

Table 7 Multiple regression analysis of a self-report measure of sexual interest and activity with males between the ages of thirteen and fifteen, and children of both genders aged under twelve years.

	Correlation prior to multiple regression	Correlation after multiple regression *
Age of respondent	0.13	0.13
Stress: previous six months	0.15	0.17
Trauma symptom checklist	0.23	0.11
Suicidal ideas and behaviour	0.23	0.18
Depression ¹	0.20	0.14
Psychoneurosis ²	0.15	0.11
Amount of social stress: previous six months	0.15	0.11
Emotional abuse before 16	0.23	0.15
Duration of CSA before 16	0.25	0.15
Severity of CSA	0.30	0.05
Victim 'too attached' to abuser to report	0.19	0.11
Multiple correlation	-	0.44

¹ Centre for Epidemiological Studies Depression Scale (Radloff, 1977)

² Middlesex Hospital Questionnaire (Bagley, 1980).

* Correlations $r > 0.1$ significant at $p < 0.05$ or beyond.

These results support previous findings that a history of CSA is associated with sexual contact with children, but also suggest that this association is possibly mediated by mental health problems (Bagley *et al.*, 1994). It is important to point out here that the two variables with the highest correlation with a self-report measure of sexual interest and activity with males between the ages of thirteen and fifteen, and children of both genders aged under twelve years, are stress in the previous six months and suicidal ideas and behaviour. All information in this study was gained

via a computerised interview, and questions regarding health and perceived stress were asked prior to questions about deviant sexual fantasies or behaviour. Thus, it seems unlikely that stress could have been given as an excuse for also reporting deviant sexual fantasies and/or behaviour. In summary, the evidence suggests that CSA is associated with later sexual aggression committed by both males and females (in the case of adolescents) and against both children and adults.

The utility of level 2 theories

The claimed importance of some of level 2 theories as aetiological factors in sexual offending is exemplified by their inclusion in assessments of risk of recidivism. For example, the Sexual Violence Risk assessment scheme (SVR-20, see Douglas, Cox and Webster, 1999) includes factors drawn from level two theories such as childhood abuse and different types of cognitive distortions. However, a meta-analysis has found that psychological variables are poor (i.e., non-significant) predictors of recidivism (Hanson and Bussiere, 1998).

A recent study of two hundred and fifty one incest offenders published since Hanson and Bussiere (1998) also found that psychological variables were not associated with recidivism (Firestone, Bradford, McCoy, Greenberg, Larose and Curry, 1999). This study compared men who did and did not commit a further sexual offence on measures of hostility, alcohol abuse, psychopathy, attitudes regarding sexual contact with children, and sexual arousal (via penile plethysmography). Only scores on the Michigan Alcoholism Screening Test ($p < 0.012$) and Psychopathy Checklist Revised scores (PCL-R) ($p < 0.036$) were significantly higher in men who committed a further

sexual offence. One potential weakness of this study is that it was conducted only on men who had committed incest offences.

A further way to assess the relationship between psychological variables and recidivism is to compare scores on psychological variables for persons at different levels of risk. Loza and Loza-Fanous (1999) used four different risk assessment schemes and four measures of aggression to test the relationship between psychometric evaluations of aggression within various risk categories. There was no relationship between risk category levels for two instruments (General Statistical Information on Recidivism Scale (Nuffield, 1982); Level of Supervision Inventory-Revised (Andrews and Bonta, 1996).

Loza and Loza-Fanous found that men with scores of fourteen on the Violence Risk Appraisal Guide (VRAG: Harris, Rice and Quinsey, 1993) had significantly higher scores on the Buss and Perry (1992) aggression questionnaire than did two groups of men with lower VRAG scores (VRAG \leq 8; VRAG 7-13). Furthermore, men scoring greater than twenty nine on the PCL-R also had higher scores on the Buss and Perry (1992) aggression questionnaire than did men in two groups with lower PCL-R scores (PCL-R 17-29; PCL-R $<$ 17). However, these analyses did not adjust alpha to control for multiple comparisons, and had this been controlled the results would not have been significant. Indeed, even given their claimed significant findings, Loza and Loza-Fanous question the utility of the results of anger questionnaires with regard to the prediction of violent offences.

Unfortunately Loza and Loza-Fanous' data are difficult to interpret because the data were collected from men in prison. These men may be more dangerous (and angry) than men who have committed violent offences that were not sufficiently severe to warrant imprisonment. Essentially, non-significant findings could be due to restriction of range in the dependent variable. Thus, while the method used by Loza and Loza-Fanous is appropriate, the sample on which the research is based may not be. Loza and Loza-Fanous' method has not previously been attempted with data from sex-offenders. However, the method may provide a better understanding of the relationship between level two theory variables and further sexual crime than actual recidivism studies because:

1. Research comparing recidivists and non-recidivists is confounded by the fact that much sexual crime is not reported to the police (O'Connell Davidson and Layder, 1994). As such, researchers cannot be sure that further sexual crimes have not been committed by men classed as non-recidivists.
2. Findings from Hanson and Bussiere's meta-analysis are difficult to interpret because of the wide range of definitions of recidivism used in the meta-analysis (Hanson and Bussiere, 1998).
3. Levels of risk ascribed to sex offenders by risk of recidivism measures are potentially metrics of larger samples of criminal behaviours that have been found to be associated with recidivism risk. Further, these measures often also include variables that are predictors of recidivism, but are not dependent upon the reporting

of a crime (e.g., the offender not having lived with a romantic partner for a period of two years or more (Hanson and Thornton, 2000)).

4. Offenders can be characterised as having different levels of risk and this affords the potential for a more fine-grained analysis of the potential relationship between level two theory variables and sexual crime than does a binary comparison between recidivists and non-recidivists.

Study 1 in this thesis will use Loza and Loza-Fanous' method to assess the utility of level two theories in the aetiology of sexual crime. An estimate of recidivism risk will be used to divide sexual offenders into groups. Scores on measures of anger, self-esteem, cognitive distortions and psychosexual variables will then be compared between the groups to see if scores from self-completed questionnaires differ significantly between the groups. Importantly, the sample of men in the study will represent a wide range of risk.

Estimation of recidivism risk

Assessments of potential risk are typically made based upon either clinical judgment or via analysis of historical data (actuarial prediction), and debates exist about the merit of these approaches (e.g. Grubin, 1997). Risk assessments can also be based upon a combination of clinical and actuarial variables (as with the Sexual Violence Risk assessment scheme (SVR-20; see in Douglas *et al.*, 1999)).

Clinical judgement

Critics of actuarial approaches to risk assessment suggest many possible deficiencies of actuarial approaches to the assessment of risk. For example, Hart (1998) has suggested that actuarial methods typically utilise relatively few variables and that it is only assumed that the method will be useful in different settings and with persons outside the sample upon which the approach was developed. Grubin (1997) argues that the use of historical data only may miss highly important and idiosyncratic information about the person being assessed which may be highly relevant to recidivism risk. For example, a person may achieve a very low score on an actuarial risk of recidivism scale, but have an explicit plan and an identified target for a future offence.

Grubin (1997) and Hart (1998) have raised important issues, but the force of their argument is diminished by a number of points. First, a meta-analysis has found that the mean predictive accuracy of clinical judgments about future risk of sexual offending is very small ($r=0.1$: Hanson and Bussiere, 1998). Second, a recent review of studies of clinical versus actuarial prediction found that of one hundred and thirty-six studies, eight found greater accuracy for clinical judgement, sixty-four found greater accuracy for actuarial methods and sixty-four found no difference (Grove and Meehl, 1996).

Actuarial prediction

Grove and Meehl (1996) describe statistical/actuarial prediction as involving

‘ ... a formal, algorithmic, objective procedure (e.g. equation) to reach the decision’ and contrast it with clinical prediction which ‘relies on an informal “in the head” impressionistic, subjective conclusion, reached (somehow) by a human clinical judge’.

It is known that human decision makers are prone to a number of cognitive biases (Garnham and Oakhill, 1994) and this may be reflected in the low predictive accuracy of clinical judgments of recidivism risk. Stricker (1992) has highlighted the potential ethical problems of relying only on clinical experience:

‘although it may not be unethical to practice in the absence of knowledge it is unethical to practice in the face of knowledge. We must all labor with the absence of affirmative data, but there is no excuse for ignoring contradictory data. An insistence on relying on overlearned, favored, but invalid approaches is not justifiable’.

The advantage of actuarial methods is the obvious point that these methods are derived from research on predictors of recidivism. Hanson and Thornton (2000) have recently created an actuarial risk assessment instrument for use with sex-offenders (called the Static99). The Static99 was developed by combining two separate risk assessment instruments developed separately by the creators of the Static99 (i.e. The Rapid Risk Assessment of Sex-offender Recidivism (RRASOR: Hanson, 1997,a); Thornton’s Structured Anchored Clinical Judgement (SACJ; Grubin, 1998)). The Static99 has been validated on four samples of sex-offenders:

- I. 344 men in a Canadian secure psychiatric hospital;
- II. 191 men in a Canadian Prison;
- III. 142 men in a Canadian secure psychiatric hospital and;
- IV. 531 men released from prison in the UK.

Items for the Static99 were identified from a number of literature reviews and a meta analysis (Hanson and Bussiere, 1998) which found that a number of historical variables were positively and significantly correlated with recidivism:

- prior sex offences;
- prior sentencing dates;
- conviction for non-contact sex offences;
- index non-sexual violence;
- prior non-sexual violence;
- any unrelated victims;
- any stranger victims;
- any male victims;
- young (under twenty-five years old when Static99 completed) and;
- single (never lived with partner for at least two years).

Receiver Operating Curve (ROC) statistics were calculated for each sample used in the validation of the Static99. ROC curves are derived by plotting sensitivity (persons who subsequently offend and were predicted to do so) against specificity (persons who did not commit a further sexual crime and were not predicted to do so) for various values on a given predictive measure. The area beneath these points on the graph is known as the ROC area. A ROC area of 0.5 represents prediction at the chance level. ROC areas greater than 0.5 indicate prediction at better than chance level. Thus, the ROC area statistic represents the probability that a sex offender chosen at random would score greater than a randomly chosen non-sex offender on

the measure. ROC curves did not differ significantly between the four sex-offender samples. Static99 showed moderate predictive accuracy for sexual recidivism (ROC area 0.71). Further analysis found that the predictive accuracy for the Static99 did not differ between sub-samples of child molesters ($n=799$) and rapists ($n=363$). Higher scores were associated with increasing risk of recidivism (official conviction criteria) at 5, 10 and 15 years (Table 8).

Table 8 Sexual crime recidivism rates for Static99 scores for men at five, ten and fifteen years post release from institutions (adapted from Hanson and Thornton, 2000).

Static 99 score	Sample size (% of tot.)	5 years	10 years	15 years
0	107 (10%)	0.05	0.11	0.13
1	150 (14%)	0.06	0.07	0.07
2	204 (19%)	0.09	0.13	0.16
3	206 (19%)	0.12	0.14	0.19
4	190 (18%)	0.26	0.31	0.36
5	100 (9%)	0.33	0.38	0.40
6+	129 (12%)	0.39	0.45	0.52

The predictive power of the Static99 is impressive considering the heterogeneity of the samples used in the studies used to validate the instrument (hospital and prison samples, Canadian and UK samples, English-speaking and French-speaking samples: Hanson and Thornton, 2000). This finding alleviates some of Hart's (1998) concern that findings on actuarial scales may not be valid with samples different from a single validation sample. Static99 scores are more accurate predictors of sexual recidivism than clinical judgement, and the Static99's predictive accuracy is roughly equivalent to that of the Sex-offender Risk Assessment Guide (SORAG; Quinsey, Harris, Rice and Cormier, 1998).

The Static99 is designed to be simple to use and interpret. The Static99 requires no clinical skill or experience and can be completed from adequate file data in a relatively short time: approximately twenty minutes. Offenders are placed into one of four risk categories according to their Static99 score (Table 9).

Table 9 Risk categories for Static99 scores.

Static99 score	Risk category
0,1	Low
2,3	Medium-low
4,5	Medium-high
6+	High

Combined clinical/actuarial approach

Risk assessment schemes which combine clinical and actuarial items have been found to be good predictors of violent recidivism. For example, the Historical, Clinical and Risk assessment scheme (HCR-20; Webster, Douglas, Eaves and Hart, 1997) has been found to demonstrate predictive validity greater than that of the Psychopathy Checklist Screening version (Douglas, Ogloff, Nicholls and Grant, *in press*).

The SVR-20 contains three sections which aim to assess psychosocial adjustment, sexual offences, and future plans (Douglas *et al.*, 1999). Its relationship to various level 2 theories is obvious in that it includes items relating to:

- child abuse;
- sexual deviation;
- extreme minimisation or denial of sex offences and;
- attitudes that support or condone sex offences.

The SVR-20 has shown good predictive accuracy (AUC 0.77). However, the SVR-20 is not suitable for this research since it has only demonstrated its validity on a very small number of offenders ($n=95$: see Douglas *et al.*, 1999).

Hypotheses regarding the relationship between Static99 risk category membership and scores on measures of level 2 theory variables are presented in a summary section at the end of the introduction.

Risk of reconviction and progress in therapy

Sex-offender outcome research

Considerable debate exists about the efficacy of treatment for sex-offenders as measured by recidivism rates (McConaghy, 1999). Further, few studies are well designed enough to identify valid differences between recidivism rates in treatment and control groups (see Furby, Weinrott and Blackshaw, 1989; Barbaree, 1997). This situation is exemplified by a recent Cochrane Review which found that only two studies of psychological treatment met the criteria (random allocation to treatment conditions and use of an intention-to-treat analysis) for analysis of results in the review (White, Bradley, Ferriter and Hatzpietrou, 1999).

Barbaree (1997) has questioned the use of recidivism as an outcome measure for sex offending. Essentially, Barbaree has argued that outcome studies which fail to find significant reductions in recidivism may do so due to Type II error rather than a lack of treatment efficacy. Essentially, most studies do not contain sufficient numbers of participants to provide the statistical power necessary to demonstrate a significant effect of treatment. Treatment studies using recidivism data as an outcome measure require relatively large numbers of participants. For example, Barbaree (1997) has calculated that such studies would require more than two hundred offenders in total, and that even studies of this size would need to reduce the rate of recidivism in treated offenders to half that of untreated offenders to demonstrate a significant effect of treatment. Very few studies contain such large numbers of offenders (see White *et al.*, 1999). Thus, Barbaree argues that the lack of treatment effect (as

measured by recidivism) found in some outcome studies argues for the importance of non-recidivism research into treatment efficacy. This would include within-treatment studies of the effectiveness of such therapy. Hanson (1997,b) has also argued for more research into within-treatment studies using measures of change on factors demonstrated, or believed to be, important in sex offending. Hanson (1997,b) further recommends that follow-up of men in within-treatment research should be conducted to assess whether changes on key variables are associated with a reduction in recidivism.

In the UK, within-treatment research on treatment efficacy for sex-offenders has been conducted by the Home Office on samples of men in the community (Beckett, *et al.*, 1994; Allam, 1998) and in prison (Beech, *et al.*, 1998). One community study compared men who were convicted of child molestation on a number of variables pre and post-treatment and found significant reductions on scores of variables believed to be associated with sexual offending (Beckett *et al.*, 1994). Of interest here however, is the cluster analysis performed on scores on psychological measures pre-treatment. The cluster analysis identified five different groups ranging in deviance. Scores on an actuarial measure of risk of recidivism (a modified version of Thornton's algorithm (Fisher and Thornton, 1993: see Beckett *et al.*, 1994)) were higher in more deviant men (Table 10).

Table 10 **Recidivism risk score in each sex-offender sub-group**

Very-low deviance	Low Deviance	Medium deviance	High Deviance	High + deviance
0	0.8	1.1	1.4	3.2

A two-way MANOVA found no evidence for significant group differences but did find a significant improvement on self-report measures after therapy. There was no interaction between group and time of administration (pre/post therapy), suggesting that treatment was equally effective between groups. However, groups sizes varied considerably and some groups (notable the very Low and High + deviancy groups) were very small and this may have lead to a Type II error with respect to finding significant differences between the groups. Further, it is important to note that men in this study received different amounts of therapeutic input. Longer treatment was significantly correlated with improvement on a number of measures and the majority of men in the high deviancy group were in a long-term residential unit where they received an average of four hundred and sixty-two hours of therapy compared with offenders in some programmes who received between forty-eight and sixty hours of treatment.

There is some indirect evidence that risk of recidivism is associated with poor treatment outcome. Risk of recidivism scores correlate positively and significantly with external locus of control ($r=0.3$, $p<0.01$: Fisher *et al.*, 1997). This is not perhaps surprising since it is known that external locus of control is associated with sexual and violent offending (Beck-Sander, 1995), impulsivity (Clark, 1994: in Fisher *et al.*, 1997) and with aggressive, and socially maladaptive behaviour (Beck and Ollendick,

1976). Further analysis of the outcome data from Beckett *et al.*'s study found that all twelve men who had scores indicating internal locus of control prior to treatment were in the group deemed to have been successfully treated. However, only eight of thirty-nine men who had scores consistent with external locus of control were in the group deemed successfully treated at therapy end. Indeed, it was found that scores on external locus of control increased by at least half a standard deviation in forty-six per cent of the unsuccessfully treated group (Fisher *et al.*, 1997).

Fisher *et al.* (1997) found that men with an external locus of control had eight times the number of convictions for non-sexual offences ($p < 0.02$) and were more than twice as likely to have previous convictions for sexual offences ($p < 0.05$). Number of previous convictions and number of previous sexual offences are both items in the Static99. Subsequent data analysis has found that none of the men deemed to be significantly treated had committed another crime of any type while two men deemed to be treatment failures were convicted of non-sexual and non-violent offences (Hedderman and Sugg, 1996).

The relationship between locus of control scores and recidivism risk and therapy outcome is confounded by the fact that Fisher *et al.* also found that locus of control scores and IQ were significantly correlated. This is important since it has been suggested that more intelligent persons may be more likely to provide desirable responses on items measuring change in sex-offender therapy (McConaghy, 1999). They may also dissimulate on locus of control scales. At this stage the relationship between IQ, locus of control, recidivism risk and outcome as measured by self-report is unclear. The obvious advantages of a risk of recidivism score as an independent

variable in outcome research based on self-report is that scores on the independent variable are free from dissimulation and are potentially metrics of a much larger sample of behaviour.

Reliable change

Outcome research is often evaluated using measures completed either by the client (e.g., the Beck Depression Inventory (Beck, Ward, Mendelson, Mock and Erbaugh, 1961)) or by the health professional (e.g., the Brief Psychiatric Rating Scale – expanded version, Lukoff, Liberman and Nuechterlein, 1986)). Such measures contain measurement error and it is possible that differences in scores between therapy start and therapy end may be attributable to measurement error rather than a true difference in scores (Hafkenscheid, 2000).

Measures of reliable change (RC) are formulae that take into account measurement error. This measurement error is due to regression-to-the-mean and/or due to less than perfect test-retest reliability of the outcome measure (Hafkenscheid, 2000). RC is expressed as a ratio (the raw or adjusted pre-treatment score minus the post-treatment score for a given patient, divided by the standard error (of measurement (or prediction if an RC formula using regression is used))). It is assumed that the RC ratio is distributed according to a standardised normal distribution and therefore an RC ratio of 1.96 (or above) is deemed significant since values of this size would only be expected to occur 5% of the time (Hafkenscheid, 2000). Thus, measures of Reliable Change (RC) are appropriate in outcome research because they test whether intra-individual treatment score differences are greater than the error boundaries of the outcome measure (Hafkenscheid, 2000).

It is also important to assess reliable change in outcome research because statistically significant differences in group treatment scores can both under-estimate and over-estimate treatment effects (Hafkenscheid, 2000). Further, a treatment effect that is statistically significant is not necessarily clinically significant (Hafkenscheid, 2000). There exist a number of measures of reliable change. A recent analysis of data from one hundred and seven patients who received psychiatric treatment found that the number of patients found to have demonstrated reliable change ranged from 9 to 54 contingent upon the reliable change formula applied to the outcome data (outcome measured by using the Brief Psychiatric Rating Scale, expanded version: Lukoff *et al.*, 1986) Hafkenscheid, 2000: Table 11).

Table 11 **Number of patients showing reliable change by reliable change formula ($\alpha=0.05$, one-tailed test: Adapted from Hafkenscheid, 2000).**

Reliable change formula of:	Number of patients showing reliable change according to formula (total $n=107$)
Jacobson <i>et al.</i> (1984)	42
Christienson and Mendoza (1986)	26
Nunnally and Kotsch (1983)	27
Hsu (1989)	9
Speer (1991)	43
Hageman and Arrindell (1993)	18
Zegers and Hafkenscheid (1994)	54

It is clear that the method used to assess treatment outcome will have an effect on the estimate of treatment efficacy, and Hafkenscheid (2000) argues that the safest

procedure is to select the RC method which produces the lowest estimate of reliable change, and that which involves the fewest statistical assumptions. This seems particularly appropriate when dealing with outcome research involving sexual crime. Therefore, this research utilises the RC formula of Cristienson and Mendoza (1986) since it produces a fairly low estimate of reliable change and is based on the fewest statistical assumptions (Hafkenscheid, 2000).

Hypotheses regarding possible differences in therapy outcome for men estimated to present different levels of risk of recidivism are presented in a summary section at the end of the introduction.

Coping skills and defence styles in sex-offenders

Offenders self-report that their sexual offending is often associated with negative affect (e.g. Pithers *et al.*, 1989; Zamble and Quinsey, 1997). Further, a regression analysis on a community sample of men not identified as offenders found that ‘stress in the previous six months’ and ‘amount of social stress in the previous six months’ were both significant predictors of deviant behaviours (Bagley *et al.*, 1994). Of course, negative affect and perceived stress are not specific to sex offending, but these data do seem to support Hall and Hirschman’s (1991) argument that affective dyscontrol is an important factor in sexual aggression. If so, it should be possible to observe differences between sex-offenders and other persons on measures of a persons ability to cope with distress.

Transactional approaches to coping (e.g. Lazarus and Folkman, 1984) consider coping to be a learned, effortful and conscious behaviour used by an individual to counter the experience of stress. Importantly, not all methods used to cope with stressors will lead to a reduction in the amount of stress, or a solution to the stress-provoking situation. Freud (1966) also argued that unconscious defences are used to protect individuals from, or alleviate the effects of, stressors

‘The ego makes use of various procedures for fulfilling its task, which, to put it in general terms, is to avoid danger, anxiety and unpleasure. We call these processes ‘mechanisms of defence’.

More recently the American Psychiatric Association (APA, 1995) has described defence mechanisms as

‘... automatic psychological processes that protect the individual against anxiety of internal or external dangers or stressors. Individuals are often unaware of these processes as they operate.’

The latest version of the DSM (DSM-IV: APA, 1995) contains a section for the rating of defence styles used by patients. As with conscious coping styles, not all defence mechanisms will prove adaptive and Vaillant (1986) acknowledges this point when he defines a defence mechanism as a

‘habitual, unconscious and sometimes pathological process that is employed to resolve conflict between instinctual needs, internalised prohibitions and external reality’.

Thus, there is a distinction between coping as construed by Lazarus and Folkman (1984), which is argued to be conscious and learned, and the concept of coping with

reference to defence mechanisms which are considered to be 'automatic' and of which persons may be 'unaware'. A PsychLit and MEDLINE search found no reports of research on defences as construed by Freud and mentioned in the DSM conducted with sex-offenders. Further, no research was identified which has compared both of these types of coping at the same time to assess any association between them.

In this section I consider research on coping as construed by Lazarus and Folkman (1984) and research which has been conducted with sex-offenders in this area. Next, I consider the development of, and then research on, the Defence Style Questionnaire (DSQ: Andrews, Pollack and Stewart, 1989) which is used as a measure of defences as described by Freud and other psychoanalytic writers. In accordance with the literature, these different approaches will be referred to as coping styles and defence styles.

Coping styles

There is now some evidence that sex-offenders have general coping skills deficits (Marshall *et al.*, 1999). For example, Barbaree, Marshall and O'Connor (1998: in Marshall *et al.*, 1999) found that in comparison with controls, sex-offenders were more likely to choose an inadequate solution to a social problem presented in a scenario form even though they generated as many potential problem solutions as controls. Further, Marshall, Cripps, Anderson and Cortoni (1999) compared imprisoned child molesters ($n=30$), non-sex offenders ($n=24$) and non-offenders ($n=29$) on the Coping Inventory for Stressful Situations (Endler and Parker, 1990) which measures task-focused (efforts to solve the problem), emotion-focused

(attempts to minimise distress only or engaging in activities like daydreaming) and avoidance-focused coping (diverting or distracting oneself from the problem). Child molesters had significantly higher scores on emotion focused coping than the other groups (Table 12).

Table 12 Scores on Task-focused, emotion-focused and avoidance-focused coping strategies per group.

Coping strategy	Child molesters mean (s.d.)	Non-sex offenders mean (s.d.)	Non-offenders mean (s.d.)
Task-focused	61.2 (11)	64.7 (9)	60.7 (7)
Emotion-focused	47.6 (11)	37.9 (9)	41.3 (11)
Avoidance-focused	47.7 (11)	47.6 (10)	47.6 (10)

Emotion-focused coping is maladaptive for sex-offenders since it involves directing attention toward the emotional consequences of stressful situations, rather than the generation of solutions to the given problem(s) (Marshall *et al.*, 1999). In turn, this can lead to further difficulty and distress since the problem may not be resolved, or may worsen. This may lead to the situation becoming more stressful. In turn, this can lead to offending since it is known that offenders use sex as a coping strategy since these offenders feel that sex mitigates life stress (Cortoni, 1998: in Marshall *et al.*, 1999).

It is of interest to note, however, that sex-offenders did not differ on measures of task-focused coping. This may suggest that it is an excess of emotion focused coping that is important, rather than a combination of emotion focused coping and poor task-focused coping.

Unfortunately, there are some limitations to Marshall *et al.*'s study. Marshall *et al.* conducted their study on imprisoned child-molesters. These sex-offenders are perhaps likely to be more disturbed and/or to have committed more serious offences than men receiving treatment in the community. Also, coping strategies may be affected by the prison environment. Further, the coping scale used in Marshall *et al.*'s study measures only three types of coping strategies. This categorisation of coping strategies has been criticised by Roger, Jarvis and Najarian (1993). These authors argue for a four factor solution to coping strategies. Roger *et al.* produced a coping style questionnaire using items developed from the following sources: other coping style questionnaires; reference to the clinical literature; experience conducting stress management course and from a study in which participants were given scenarios of stressful events (e.g. being reprimanded by a superior) and asked to list their typical responses. A factor analysis of data from three hundred and eleven participants who completed the new questionnaire on coping styles yielded four factors.

1. Rational coping - constructive engagement with the stressor.
2. Detached coping - the ability to feel detached from the stressor, but, crucially, does not represent avoidance or denial.
3. Emotional coping - an individuals' tendency to focus on the emotional impact of the stressor.
4. Avoidant coping - the tendency to avoid the stressor.

Rational and detached coping are significantly and positively correlated and are argued to represent adaptive coping strategies (Roger *et al.*, 1993). Emotional and avoidant coping are significantly and positively correlated and represent maladaptive coping strategies (Roger *et al.*, 1993). Rational and detached coping are both negatively and significantly correlated with emotional coping, but do not correlate significantly with avoidant coping (Roger *et al.*, 1993).

The Coping Styles Questionnaire (CSQ) has already been used in an evaluation of an emotional control training programme for imprisoned sex-offenders ($n=29$) and imprisoned murderers ($n=23$; Roger and Masters, 1997). This study found that scores on rational and detached coping at one and six weeks after completing the training programme were significantly greater than scores one week prior to the programme. Emotional coping scores at one and six weeks were significantly lower than scores one week prior to the programme. Scores on the avoidant scale were significantly lower at six weeks after the programme than one week prior to the programme. Roger and Masters do not present data on group differences on CSQ scores, but sex-offender's scores were lower on adaptive coping and higher on maladaptive coping at nearly all time points (with the exception of rational coping scores one week after training: see Table 13).

Table 13 CSQ scale scores at one week prior to, and one and six weeks after, emotional control training programme completion (adapted from Roger and Masters, 1997)

	One week prior to course Mean (s.d.)	One week after course mean (s.d.)	Six weeks after course mean (s.d.)
<i>Rational coping</i>			
Sex-offenders	22.24 (7.7)	27.14 (8.0)	26.66 (8.9)
Murderers	26.09 (8.3)	26.91 (8.1)	28.57 (8.0)
<i>Detachment</i>			
Sex-offenders	15.93 (5.4)	19.90 (6.8)	20.62 (7.4)
Murderers	18.78 (6.6)	21.26 (7.4)	23.13 (7.4)
<i>Emotional coping</i>			
Sex-offenders	23.55 (8.4)	20.28 (9.5)	20.45 (8.8)
Murderers	18.57 (8.9)	16.96 (8.9)	15.30 (9.1)
<i>Avoidance</i>			
Sex-offenders	19.28 (6.0)	19.21 (6.0)	18.55 (6.6)
Murderers	17.17 (7.7)	16.13 (7.2)	14.65 (7.3)

Thus, there is some evidence for coping skills deficits (as measured by CSQ scores) in imprisoned sex-offenders in comparison with murderers. The CSQ seems useful in the assessment of coping strategies in sex-offenders because it provides a measure of emotion focused coping, and a measure of the ability to feel independent of the emotion surrounding a stressful event (detached coping). Thus, with regard to emotionally upsetting events, the CSQ may be able to provide a measure of the use of a maladaptive strategy (emotional coping) and the under-use of an adaptive strategy (detachment), as Roger and Masters found. However, it is important to note that this research was conducted in a prison environment and that the CSQ has not been used to assess sex-offenders in the community.

Defence styles

Defences are assumed to follow a developmental progression along a continuum from immature to neurotic to mature defences (Vaillant,1976). The use of mature defences predicts better outcome with regard to physical and mental health and to occupational attainment (Vaillant, 1976). Defence styles belong to three factors (Andrews *et al.*, 1989: Table 14).

Table 14 Individual defences by factor

Defence style factor	Individual defences	
Mature	<ul style="list-style-type: none"> • Sublimation • Humour 	<ul style="list-style-type: none"> • Anticipation • Suppression
Neurotic	<ul style="list-style-type: none"> • Undoing • Pseudo-altruism 	<ul style="list-style-type: none"> • Idealisation • Reaction formation
Immature	<ul style="list-style-type: none"> • Projection • Passive aggression • Acting out • Isolation • Devaluation • Autistic fantasy 	<ul style="list-style-type: none"> • Denial • Displacement • Dissociation • Splitting • Rationalisation • Somatisation

Bond, Gardner, Christian and Sigal (1983) developed the Defence Style Questionnaire (DSQ) to measure the use of various defences. While it may not seem possible to measure the use of unconscious defences by self report, it is argued (Andrews, Singh, and Bond, 1993) that: 1. Unconscious motives may be attributed to the cause of behaviour in hindsight, and 2.

'.. we believe that the habitual use of any particular defence will leave tracks in an individuals attitude or belief system and that endorsement of certain attitudes or beliefs can be taken as an indicator of the habitual use of that defence'.

Although these assertions are open to criticism, DSQ scores correlate with clinical assessments of the use of various defence styles as identified by trained clinicians (Vaillant, 1986).

There have been four versions of the DSQ (67 items (DSQ67); 72 items (DSQ72); 88 items (DSQ88: 78 items related to defences and 10 lie or social desirability items) and 40 items (DSQ40)). The DSQ88, DSQ72 and DSQ40 all measure the use of mature, neurotic and immature styles (each style is a statistically derived factor). The DSQ40 contains forty items which measure 20 defences (this reduction being necessary to be consistent with defences listed in the DSMIII-R (APA, 1987)).

Versions of the DSQ have been used in a number of studies investigating the use of defence styles in DSM-III-R Axis I and Axis II disorders and in a forensic sample. For example, Andrews *et al.* (1993) compared controls and patients with a number of anxiety disorders (using the DSQ40 and DSQ72) and found that mature defence scores are lower, and neurotic and immature defence scores higher in persons with anxiety disorders (Table 15).

Table 15 Difference (in effect size units) between patients with anxiety disorders and controls (adapted from Andrews *et al.*, 1993).

Defence style	Panic & agoraphobia (<i>n</i> =139)	Social phobia (<i>n</i> =44)	Obsessive compulsive disorder (<i>n</i> =17)
Mature defences	-0.88 *	-1.16 *	-0.95 *
Neurotic defences	0.34 *	0.48 *	0.66
Immature defences	0.42 *	0.40	0.76

*=Significantly different from control group (*n*=388) after controlling for multiple comparisons (Bonferroni correction).

Defence style scores have also been found to be associated with personality clusters as defined by the DSMIII-R (Mulder, Joyce, Sullivan, Bulik and Carter, 1999: comparisons were also made with a further measure of personality the Temperament and Character Inventory (Cloninger, Svrakic and Przybeck., 1993), but this is not germane to this research). Two hundred and fifty-six patients (one hundred and thirty with bulimia nervosa and one hundred and twenty-six with mood disorder) were assessed using the DSQ40, and the Structured Clinical Interview for DSMIII-R Personality Disorders (SCID-II: Spitzer, Williams and Gibbon., 1987). According to Vaillant (1986), individuals with personality disorders (PDs) should use immature defences, and Mulder *et al.*'s data supported this assertion (Table 16).

Table 16 Correlation between DSQ40 defence scores and DSMIII-R PD diagnosis (adapted from Mulder *et al.*, 1999).

Defence style	Mature	Neurotic	Immature
Cluster A PDs (Paranoid, Schizoid, Schizotypal)	-0.01	0.10	0.29*
Cluster B PDs (Antisocial, Borderline, Histrionic, Narcissistic)	0.06	0.28 *	0.36*
Cluster C PDs (Avoidant, Dependent, obsessive-compulsive)	-0.02	0.29 *	0.31*

* $p < 0.001$

Mulder *et al.* (1999) divided immature defence scores on the DSQ into quartiles to assess the relationship between immature defence score and personality disorders. Upper quartile immature defence scores were associated with PD diagnosis and diagnosis of more than one PD (Table 17).

Table 17 Proportion of patients with no PD, 1-2 PDs and 3 or more PDs by immature defence quartile score (adapted from Mulder *et al.*, 1999).

Immature defence score	N	% No PD	% 1-2 PDs	% \geq 3 PDs
> 4.65	65	22	35	41
3.96 – 4.65	63	40	31	29
3.25 – 3.95	65	59	33	8
< 3.25	62	74	20	6

Evidence from a prospective study of adult twins has shown that a large proportion of the variance (thirty-eight per cent) in DSQ scores is attributable to genetic factors (Andrews, 1991). A recent study has found that persons with the DRD2 dopamine

receptor gene haplotype 1 (a haplotype is a type of a given allele) have significantly lower scores on mature defence styles, and significantly higher scores on neurotic and immature defence styles (irrespective of membership of the control group or inpatient drug addicted group: Comings, MacMurray, Johnson, Dietz and Muhleman, 1995: see table 14 above for a listing of defence styles and individual defences within given defence styles). This is an important finding because of the known association between the DRD2 locus and aggressive, impulsive, appetitive and addictive behaviours. Further, Dopaminergic neurons are important in sexual behaviour (Blackburn, Pfaus, and Philips, 1992).

While Comings *et al.*'s research found that the DRD2 haplotype was significantly associated with DSQ scores they also found that the inpatient's scores on the DSQ were consistently higher even for those without the haplotype than in the healthy controls with the haplotype. This led them to conclude that the haplotype was important, but that it was not the sole factor in determining DSQ score and that environmental factors were also important.

Early traumatic experiences may alter the natural maturation of coping (Vaillant, 1986) and child sexual abuse (CSA) is one environmental factor which has been shown to be associated with DSQ scores. Romans, Martin, Morris and Herbison (1999) compared the DSQ scores of one hundred and seventy-three women reporting CSA and one hundred and eight-one women without such a history. Immature defence scores were significantly higher in women with a history of CSA. Mature defence scores were significantly lower in women with a history of chronic CSA (>10 incidents) than in women without such a history. Women defined as cases

using the Present State Examination (Wing, Cooper and Sartorius, 1974) had significantly higher immature defence scores than non-cases, and significantly lower mature defence scores than non-cases. Those seeking help for psychiatric problems within the last twelve months had significantly higher scores on the neurotic factor than did those not reporting having sought help. These findings led Romans *et al.* (1999) to conclude that the DSQ 'may become a useful instrument for social psychiatric research'.

The DSQ has also been used on a forensic sample. Brennan, Andrews, Morrisey-Yates and Pollock (1990) compared the DSQ scores of parents ($n=32$) accused of physical and/or emotional abuse of their child(ren) with a normal population reference group ($n=204$) and with patients awaiting treatment for anxiety disorders ($n=119$). The child-abusing parents had significantly higher immature defence scores than the normal control group (scores were also higher than the anxiety group but were not significantly higher). Child-abusing parent's scores on the projection defence were significantly higher than both comparison groups. Child abusing parents scores on the defences projection, splitting, and denial were more than half a standard deviation greater than both of the reference groups. A discriminant function analysis found that the profile of defences used by the child abusing parents was significantly different from the normal control group and the groups of anxiety patients (Brennan *et al.*, 1990).

These findings were consistent with Prodgers' (1984) observation that splitting, denial and projection are more common in child abusing parents. Prodgers argues that parents abuse their children partly because their distorted perceptions of their

children's normal behaviour leads them to attribute persecutory intentions to their child which result in the parent attacking the child.

In summary, then, the DSQ has been found to be a robust instrument which has demonstrated its utility in a number of research settings. The vulnerability of the DSQ to dissimulation is not known. However, Brennan *et al.* (1990) concluded that

‘The results offer further support for the validity of the defence style questionnaire. Although these parents were concerned about their predicament and keen to present themselves in the best light possible, their responses were more deviant than either the normal or patient groups’.

Thus, the DSQ may be useful in forensic settings. Indeed, many of the items tapping immature defence styles seem fairly non-obvious and it is possible that the nine point Likert scale may actually reduce the intensity of dissimulation if persons are not familiar with item norm means which are below four for many (nine of twelve) immature defences. It is clear, however, that mature defence scores are affected by age (Andrews *et al.*, 1993; Romans *et al.*, 1999) and that this should be accounted for in statistical analyses.

Dissimulation

Dissimulation is the conscious denial, or great minimisation of symptomatology (Rogers, 1997) and is used by persons to present themselves in a favourable light. This is perhaps a particular issue in sex-offenders since it has been found that as much as ninety-eight per cent of sex-offenders deny or minimise their offending at

first interview (Maletzky, 1991). Research on self-report measures has also found evidence for dissimulation in sex-offenders (see Sewell and Salekin, 1997 for a review). These findings strongly suggest that it is wise to use a measure of dissimulation when comparing sex-offenders with other offenders and non-offender controls. The Paulhus Balanced Inventory for Desirable Responding (BIDR7: Paulhus, 1998) is useful in this regard. The BIDR7 contains two scales: impression management (IM) and self-deceptive enhancement (SDE).

The IM scale is a measure of faking or lying (Paulhus, 1998). The IM scale correlates highly with scales generally accepted to measure faking of responses (e.g. the Marlowe-Crowne Social desirability scale (Crowne and Marlowe, 1960). The BIDR7 has been used with forensic samples (see Paulhus, 1998). Research has found that SDE is relatively stable across forensic populations, but that IM (or other deception) is more common in offenders convicted of sexual and violent crimes (Gudjonsson, 1990). This finding seems consistent with Maletzky's (1991) research mentioned above. The BIDR7 is also sensitive enough to identify differences in impression management within groups of offenders who present with different levels of denial. For example, Nugent and Kroner (1996) found a significant difference ($p < 0.01$) between IM scores for rapists who admitted (mean: 80.5) or did not admit (mean 94.9) their offences.

The SDE scale "represents an unconscious favorability bias closely related to narcissism" (Paulhus, 1998) and "taps self deception in the sense of a pervasive lack of insight". For example, Paulhus (1998) asked members of groups ($n = 24$: 5-6 members per group) to rate each members contribution to the group. This allowed a

comparison of a given individual's rating of their contribution with the mean of the other group members ratings of the contribution of that individual. SDE was assessed by correlating the difference between an individuals' assessment of their contribution with the mean rating of their contribution by other group members with SDE and IM scores. As predicted, SDE correlated significantly with this discrepancy ($r=0.3$, $p<0.01$), while IM did not ($r=0.14$, $p >0 .20$).

The latest version of the BIDR (BIDR version 7) still has forty items, but now uses more strict criteria for identifying SDE and IM scores. This is because the scale score for SDE is now comprised only of answers at extremes of the five point Likert scale for each item (allowing a possible total score of twenty items) rather than a numerical value for each point of the Likert scale. Scores on the IM scale are comprised of scores at, or one below/one above, the extreme of the scale for that item. The BIDR7 yields three scores: SDE, IM and a total score. The BIDR7 will be used as a measure of dissimulation when comparing sex-offenders, non-sex offenders and non-offenders scores on coping and defence styles.

Thesis studies and hypotheses

This thesis comprises three studies, each of which was conducted on a different sample of offenders. An outline of each study is presented below, together with relevant hypotheses.

Study 1. Level 2 theory variables and Static99 risk categories

A wide range of level 2 theories regarding the aetiology of sexual crime exist. These theories pertain to variables associated to deviant sexuality and also to measures of more common psychological states such as anger and low (or high) self-esteem. The potential causal role in sex offending of variables associated with level 2 theories would be demonstrated to have greater power if it could be shown that scores on measures of these variables were associated with level of risk of future offending.

This study will divide a sample of offenders into the four risk categories using the Static99 risk assessment scheme and test whether differences can be found between different risk groups on measures relating to level 2 theory variables. Thus, Study 1 will test the following hypotheses:

1. Scores on a measure of self-esteem will be significantly lower in high risk of recidivism groups than in low risk of recidivism groups.
2. The proportion of men with high self-esteem will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups (while this may seem to conflict with hypothesis 1 above, it is possible that the proportion of men with high self-esteem scores could be greater in higher risk groups even if the group mean is lower than in lower risk groups) .
3. Scores on measures of trait anger, anger suppression, anger expression and anger control will be significantly greater in higher risk of recidivism groups than in lower risk of recidivism groups.

4. Scores on measures of deviant sexuality (atypical sexual outlet, sexual obsessions) will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
5. Scores on measures of sexual dysfunction will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
6. Scores on a measure of sexual knowledge and beliefs will be significantly lower in higher risk of recidivism than in lower risk of recidivism groups.
7. Scores on a measure of denial of sexual thoughts and behaviours will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
8. Scores on measures of cognitive distortions regarding sexual offending will be greater in higher than in lower risk of recidivism groups.

Study2. Outcome of therapy in men according to Static99 risk of recidivism score

Risk levels as measured by structured instruments are potentially metrics of a large sample of behaviour and are free from dissimulation. Therapy outcome may be affected by level of risk of recidivism as suggested by the data of Fisher *et al.* (1997).

This study will divide offenders who have completed twelve months of group therapy into higher and lower risk groups using the Static99 risk assessment scheme. This study will test for differences in outcome between these two groups. Thus, Study 2 will test the following hypotheses:

9. Men in a higher risk recidivism group will have significantly lower scores prior to and after twelve months therapy on a measure of denial (indicating more denial) of sexual thoughts and behaviours than men in a lower risk of recidivism group.
10. Men in a higher risk recidivism group will have significantly higher scores on cognitive distortions which support sexual offending prior to and after twelve months therapy than men in a lower risk of recidivism group.
11. A significantly smaller proportion of men at higher risk of recidivism will achieve reliable change status on outcome measures after twelve months therapy.

Study 3. Coping styles, defence styles and dissimulation in sex-offenders, non-sex offenders and non-offenders

Dyscontrol of internal states is argued to be an important causal factor in sexual offending (Hall and Hirschman, 1991), and evidence also exists that sex-offenders are more likely to use inappropriate strategies (sexual behaviour: Cortoni, 1998), and non-adaptive coping styles (emotional coping) when faced with difficulties requiring a coping response (Marshall *et al.*, *in press*). Control of internal states is achieved by the use of conscious and learned strategies (Lazarus and Folkman, 1984) and by unconscious and habitual strategies (Vaillant, 1986; APA, 1995). Both conscious and unconscious strategies can be classified as adaptive or non-adaptive. So far, sex-offenders have not been compared with non-sex offenders and non-offenders on a measure of conscious coping including detached coping, or on a measure of unconscious coping. Any comparisons between sex-offenders and non-sex offenders should take dissimulation into account. Thus, Study 3 will test the following hypotheses:

12. Sex-offenders will score significantly higher than non-sex offenders and controls on measures of dissimulation.
13. In the total sample mature defence scores will correlate significantly and positively with rational and detached coping style scores, and significantly and negatively with emotional and avoidant coping style scores.
14. In the total sample neurotic and immature defence scores will correlate significantly and negatively with rational and detached coping style scores, and significantly and positively with avoidant and emotional coping style scores.
15. A discriminant function analysis will identify two functions that will discriminate reliably between sex-offenders, non-sex offenders and non-offenders. The first function will represent adaptive responding to stressors and will include scores on rational coping, detached coping and mature defence styles. The second function will represent non-adaptive responding to stressors and will include scores on emotional coping, avoidant coping, neurotic and immature defence style scores, and dissimulation score (since dissimulation scores represent a lack of insight and/or overconfidence regarding problem solving ability: Paulhus, 1998).

Each of the studies is discussed in turn in the three sections that follow this introduction. A general discussion, linking the results of these three studies, forms the final section of the thesis.

Study 1

Risk categories and level 2 theories

For ease of reference, the hypotheses for each study are repeated at the beginning of the sections describing and discussing the study.

1. Scores on a measure of self-esteem will be significantly lower in high risk of recidivism groups than in low risk of recidivism groups.
2. The proportion of men with high self-esteem will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
3. Scores on measures of trait anger, anger suppression, anger expression and anger control will be significantly greater in higher risk of recidivism groups than in lower risk of recidivism groups.
4. Scores on measures of deviant sexuality (atypical sexual outlet, sexual obsessions) will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
5. Scores on measures of sexual dysfunction will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
6. Scores on a measure of sexual knowledge and beliefs will be significantly lower in higher risk of recidivism than in lower risk of recidivism groups.
7. Scores on a measure of denial of sexual thoughts and behaviours will be significantly greater in higher risk of recidivism than in lower risk of recidivism groups.
8. Scores on measures of cognitive distortions regarding sexual offending will be greater in higher than in lower risk of recidivism groups.

Method 1

Risk category data and level 2 theories

Ethical approval was provided by the Ealing Hammersmith and Fulham NHS trust Ethics Committee.

Participants 1

Power analysis

Power calculations based on $\alpha = 0.05$, power = 0.80 and assuming a large effect size (0.8) of group categorisation based upon recidivism risk suggested that the number of participants required would be 100 (25 per group).

Inclusion criteria

Men were selected for inclusion if: 1. A full set of psychometric data was available; and 2: There was no record that the offender was mentally disordered or had a learning disability. One hundred and sixteen male offenders met the criteria for inclusion in the study. All data were obtained via search of a research archive.

Materials 1

Data on level 2 variables were obtained using the following self-report instruments:

State-Trait Anger Expression Inventory (STAXI)

This instrument provides measures of the experience and expression of anger. The scale is self-administered, and consists of five scales (Table 18).

Table 18 STAXI sub-scales

STAXI scale	Scale measures
State anger	Intensity of angry feelings at a given time
Trait anger	Individual differences in experience of anger
Anger-In	Suppression of angry feelings
Anger-out	Expression of anger towards others or objects in the environment
Anger control	Frequency of attempts to control anger

Spielberger (1988) calculated internal consistency (alpha coefficients) for the anger scales for different age groups and for men and women, and all are above 0.76.

The validity of the STAXI scales has been demonstrated in a number of studies. Trait anger scores are positively and significantly correlated with scores on the Buss-Durkee Hostility Inventory, and the MMPI scales Ho and Hv (Spielberger, 1988). Anger-in scores correlate positively with systolic and diastolic blood pressure (Johnson, 1984), and with angiographically assessed severity of coronary heart disease (Dembroski, MacDougall, Williams and Haney, 1985).

Culture-Free Self-esteem Inventory (CFSEI: Battle, 1978)

The CFSEI is a forty-item self-administered questionnaire that consists of four sub-scales: general self-esteem, social self-esteem, personal self-esteem and a lie scale. Alpha coefficients for the sub-scales are acceptable (general: 0.78; social: 0.57; personal: 0.54; Lie: 0.54). The test-retest correlation for the whole scale is 0.81.

In this study, the combined score for the three scales (general, social and personal self-esteem: maximum score=30) will be used. The validity of this combined score

has been established. CSFEI scores correlate significantly and negatively ($r=0.55$, $p<0.01$) with scores on the Beck depression Inventory (Beck, Ward, Mendelson, Mock and Erbaugh, 1961).

Multiphasic Sex Inventory (MSI)

The MSI is a self report inventory which contains three hundred items in a true/false response format. The MSI is designed to measure a wide range of psychosexual characteristics, and is comprised of twenty scales:

1. Treatment attitudes.
2. Three scales of sexual deviance:
 - 2.1 Child molest
 - 2.2 Rape
 - 2.3 Exhibitionism
3. Validity scales:
 - 3.1 Social and sexual desirability
 - 3.2 Sexual obsessions
 - 3.3 Lie scale
 - 3.4 Cognitive distortions and immaturity
 - 3.5 Justifications
4. Five scales measuring atypical sexual behaviour.
5. Four scales to measure sexual dysfunction – which yield an overall sexual dysfunction score.
6. A knowledge about sex scale.

The sex deviance admittance scales were not used in this research because they are comprised of different numbers of items and because the scale does not measure behaviours associated with indecent assault.

Internal consistency coefficients for MSI sub-scales range from moderate to high (cognitive distortions and immaturity: 0.53; justifications: 0.82; social and sexual desirability: 0.87; sexual knowledge and beliefs: 0.62; sexual obsessions: 0.86; Kalichman, Henderson, Shealy and Dwyer, 1992). Kalichman *et al.* provide data on sub-scales of the atypical sexual outlet scale rather than the scale total. Internal consistency coefficients for these sub-scales are moderate to high (sodomasochism: 0.79; bondage: 0.84; voyeurism: 0.70; fetishes: 0.67). Internal consistency data are not strictly applicable to the sexual dysfunction scale since the scale is not intended to measure a unitary construct.

Test-retest correlations are also in the moderate to high range (cognitive distortions and immaturity: 0.71; justifications: 0.78; social and sexual desirability: 0.84; sexual knowledge and beliefs: 0.68; sexual obsessions: 0.80; atypical sexual outlet: 0.71; sexual dysfunction: 0.77; Simkins, Ward, Bowman and Rinck, 1989).

There have been a number of studies assessing the validity of the MSI. For example, Nichols and Molinder (1984) report that child molesters and college students differ significantly on a number of MSI scales (sexual knowledge and beliefs and social and sexual desirability). Child sex abusers have also been found to score significantly differently to clients with marital problems and a community control sample on the sexual knowledge and beliefs scale, and the social and sexual

desirability scale (Ward, 1989). MSI scores are relatively unaffected by IQ, age or education (Nichols and Molinder, 1984).

The MSI is sensitive to treatment change in sex-offenders. Post-treatment scores for a group of child molesters were significantly different (and in the predicted direction) for all scales of the MSI except the sexual dysfunction scale (an area not covered in the sex-offender therapy: Nichols and Molinder, 1984). Post-treatment scores for a group of rapists were significantly different (and in the predicted direction) for all scales of the MSI except sexual dysfunction, exhibitionism and sex obsessions (Nichols and Molinder, 1984). Beckett *et al.* (1994) used the MSI as part of a package of outcome measures to decide whether offenders had benefited from a group therapy program for sex-offenders. None of those deemed to be successfully treated had re-offended two years after completing group therapy, while two offenders deemed not successfully treated had committed a further crime after completing group therapy (Hedderman and Sugg, 1996).

Static 99 risk assessment scheme

The Static99 (Hanson and Thornton, 2000) is an actuarial risk assessment inventory designed to estimate the risk of future sexual offending. The psychometric properties of this instrument were outlined in the introduction. In the current study scores on the Static99 are used to classify sexual offenders into four risk categories for the purpose of assessing differences between lower and higher risk categories on various measures used to assess level 2 theory variables.

Procedure 1

Static99, psychometric and demographic data were collected via archive review. All Static99 data were collected without knowledge of the offenders' scores on psychometric tests (these were held in a separate database). Static99 data on twenty offenders were collected by two independent researchers. The correlation between ratings was very high ($r=0.98$). This is not surprising since the items are easy to rate, and the information is relatively easy to find within the file.

Results 1

Data description and preparation

Demographics, offence characteristics and Static99 risk categories

Static99, Multiphasic Sex Inventory, State-Trait Anger Inventory and Culture-Free Self-Esteem Inventory data were obtained from one hundred and sixteen men. The average age of the men was thirty-eight years (SD 12.5). Probation service records were not accurate enough to provide data on ethnic background or occupational class of the men.

Twenty-eight men (24%) reported a history of CSA. Twenty-six men (22%) reported CSA perpetrated by a male (or a male and a female). Two men (1.7%) reported CSA perpetrated by a female only.

Forty three-men (37%) had committed offences against adults, and seventy-three men (63%) had committed offences against children. Ninety-two men (79%) had committed an offence(s) involving sexual contact with another person, and twenty-four men (21%) had convicted a non-contact sexual offence(s) (indecent exposure).

The mean Static99 score was 3.35 (SD) and was almost identical to the mean of the Static99 validation sample (3.2: Hanson and Thornton, 2000). The proportion of men in each risk category in the current sample was not significantly different to the proportion of men in each risk category in the validation sample ($\chi^2=7.5$, 3 *d.f.*, $p>0.05$: Table 19).

Table 19 Per cent of men in each Static99 risk category

Static 99 risk category	Per cent of men in Current sample (n)	Per cent of men in validation sample (n)
Low	22 (19)	24 (257)
Medium-low	49 (42)	38 (410)
Medium-high	23 (20)	27 (290)
High	22 (19)	12 (129)

Psychometric data

Extreme data points

Data from all scales were screened for outlying data points using Tukey’s criteria ($X > (\text{upper quartile}) + \text{step}$, or $X < (\text{lower quartile}) - \text{step}$; where $\text{step} = 1.5 * [(\text{upper quartile}) - (\text{lower quartile})]$, see Tukey, 1977). Outliers were identified for the variables: self-esteem, sexual obsessions, justifications, cognitive distortions and immaturity, sexual dysfunction and sexual knowledge and beliefs. Outliers for the

variables self-esteem, sexual knowledge and beliefs and cognitive distortions and immaturity were replaced with values using the criteria recommended in Tabachnik and Fidell (1996). Outliers for other variables were not replaced since analyses for these variables were based on ranks.

Variable transformations

Prior to analysis the data distributions were analysed to ascertain if they were suitable for parametric analysis. Distributions for the variables: trait anger, anger suppression, anger control, atypical sexual outlet, sexual dysfunction, social and sexual desirability and justifications were not suitable for parametric analysis (due to excessively skewed or highly platykurtic distributions).

Data for the variables self-esteem and cognitive distortions and immaturity were suitable for parametric analysis after the transformations recommended by Tabachnik and Fidell (1996: Table 20).

Table 20 Distributions and transforms used for variables

Variable	Shape of distribution and transform required for parametric analysis
Self-esteem	Distribution negatively skewed. Required transform: Reflect and square root.
Cognitive distortions and immaturity	Distribution positively skewed. Transform required: Square root.

Analysis of data distributions found that distributions were approximately normal for anger expression and sexual knowledge and beliefs scores and that no transformations were required for parametric analysis.

Offences

A significantly smaller proportion of men in the low-risk category committed offences against adults ($\chi^2=12.4$, 3 *df.*, $p<0.01$: Table 21).

Table 21 Number of men committing offences against adults or children in each risk category

	Low risk (%)	Medium-low risk (%)	Medium-high risk (%)	High risk (%)
Child victim	21 (95)	28 (57)	12 (52)	10 (45)
Adult victim	1 (5)	21 (43)	11 (48)	12 (55)

The proportion of men who committed a contact offence did not differ significantly between risk categories ($\chi^2=7.5$, 3 *df.*, $p>0.05$: Table 22).

Table 22 Number of men committing contact or non-contact offences in each risk category

	Low risk (%)	Medium-low risk (%)	Medium-high risk (%)	High risk (%)
Contact	20 (91)	42 (86)	16 (70)	14 (64)
Non-contact	2 (9)	7 (14)	7 (30)	8 (36)

History of child sexual abuse

The proportion of men reporting a history of CSA (this information was obtained from items in the MSI) did not differ significantly between the groups ($\chi^2 < 1, 3 .d.f.$, $p > 0.05$: Table 23).

Table 23 Proportion of men with a history of CSA in each risk category

	Low risk n (%)	Medium-low risk n (%)	Medium-high risk n (%)	High risk n (%)
No history of CSA	17 (77)	38 (78)	16 (70)	17 (77)
History of CSA	5 (23)	11 (22)	7 (30)	5 (23)

Analysis by category of offence

Cell sizes precluded the use of analyses testing interactions between offender type and risk category. Since any significant difference between risk categories could be attributable to differences between types of offenders, the offenders were divided into three groups for analyses of group differences on psychometric measures:

- men who committed non-contact offences against adults and/or children ($n=24$; 21%);
- men who committed contact sex offences against children ($n=62$; 53%);
- men who committed contact sex offences against adults ($n=30$; 26%).

The proportions of men reporting a history of CSA did not differ significantly between these offender groups ($\chi^2 = 1.8$, 2 *d.f.*, $p > 0.05$). One-way ANOVAs performed on the variables self-esteem ($F_{2,113} < 1$, NS), anger expression ($F_{2,113} < 1$, NS), sexual knowledge and beliefs ($F_{2,113} < 1$, NS), and cognitive distortions and immaturity ($F_{2,113} < 1$, NS) found no significant differences between non-contact and contact offenders against children or adults.

Non-parametric analyses (Kruskal-Wallis test) of the variables trait anger ($\chi^2 = 1.6$, 2 *d.f.*, NS), anger suppression ($\chi^2 = 1.04$, 2 *d.f.*, NS), anger control ($\chi^2 = 2.4$, 2 *d.f.*, NS), atypical sexual outlet ($\chi^2 = 2.2$, 2 *d.f.*, NS), sexual dysfunctions ($\chi^2 = 3.2$, 2 *d.f.*, NS), social and sexual desirability ($\chi^2 = 1.1$, 2 *d.f.*, NS), sexual obsessions ($\chi^2 = 0.5$, 2 *d.f.*, NS), and justifications ($\chi^2 = 0.9$, 2 *d.f.*, NS) found no significant differences between

non-contact and contact offenders against children or adults. The proportion of men with high self-esteem (CSFEI score > 75th percentile) did not differ significantly between non-contact and contact offenders against children or adults ($\chi^2=1.9$, 2 *d.f.*, $p>0.05$). Thus, there was no evidence that groups of offenders who committed different types of sex offences had significantly different scores on any of the psychometric measures (CSFEI, STAXI, MSI).

Subsequent analyses were conducted using risk category as the independent variable. Alpha was set at 0.004 to control for Type I errors.

Analysis by Static99 risk category

Scores on self-esteem measure

Risk category groups did not differ significantly on self-esteem scores ($F_{3,112}<1.14$, $p>0.05$). Contrary to the hypothesis, group mean scores did not decrease between risk levels, although the lowest score was in the high-risk group (Table 24).

Table 24 Mean self-esteem scale scores in each risk category

Low risk mean (s.d.)	Medium-low risk mean (s.d.)	Medium-high risk mean (s.d.)	High risk mean (s.d.)
20.25 (7.2)	18.49 (7.4)	21.52 (7.9)	17.10 (7.5)

Proportion of men with high self-esteem in each risk category

The proportion of men with high self-esteem (CSFEI score > 75th percentile) did not differ significantly between the groups ($\chi^2 = 1.94$, 2 *d.f.*, $p > 0.05$). The lowest proportion of men with high self-esteem was in the medium-high risk group (Table 25).

Table 25 Proportion of men with a high self-esteem score in each risk category

	Low risk (%)	Medium-low risk (%)	Medium-high risk (%)	High risk (%)
CSFEI scale score > 75%ile	6 (27)	13 (26)	3 (13)	6 (27)
CSFEI scale score ≤ 75%ile	16 (73)	36 (74)	20 (87)	16 (73)

Trait anger

Risk category groups did not differ significantly on trait anger scores ($\chi^2 = 2.71$, 3 *d.f.*, $p > 0.05$). Contrary to the hypothesis, the highest mean rank score was in the low-risk category (Table 26).

Table 26 Mean trait anger scale rank score in each risk category.

Low risk	Medium-low risk	Medium-high risk	High risk
65.43	55.78	63.93	51.95

Anger suppression

Risk category groups did not differ significantly on anger suppression scores ($\chi^2=7.3$, 3 *d.f.*, $p>0.05$). Contrary to the hypothesis, the lowest mean rank score was in the high-risk category (Table 27).

Table 27 Mean anger suppression scale rank score in each risk category.

Low risk	Medium-low risk	Medium-high risk	High risk
65.43	55.78	63.93	51.95

Anger expression

Risk category groups (Table 28) did not differ significantly on anger expression scores ($F_{3,112}=2.86$, NS).

Table 28 Mean anger expression score in each risk category

Low risk mean (s.d.)	Medium-low risk mean (s.d.)	Medium-high risk mean (s.d.)	High risk mean (s.d.)
14.7	13.6	15.2	13.2
(2.2)	(2.8)	(3.95)	(1.6)

Anger control

Risk category groups did not differ significantly on anger control scores ($\chi^2=2.8$, 3 *d.f.*, $p>0.05$). Consistent with the hypothesis, mean anger control rank scores increased as risk level increased (Table 29).

Table 29 Mean anger control scale rank score in each risk category

Low risk	Medium-low risk	Medium-high risk	High risk
49.09	58.18	61.65	65.32

Social and sexual desirability

Risk category scores did not differ significantly on social and sexual desirability scale scores ($\chi^2= 9.3$, 3 *d.f.*, NS).

Table 30 Mean social and sexual desirability scale rank score in each risk category

Low risk	Medium-low risk	Medium-high risk	High risk
70.57	48.20	68.00	59.43

Sexual knowledge and beliefs

Risk category groups did not differ significantly on sexual knowledge and beliefs scores ($F_{3,112}<1.34$, $p>0.05$: Table 31).

Table 31 Mean sexual knowledge and beliefs scale score in each risk category

Low risk mean (s.d.)	Medium-low risk mean (s.d.)	Medium-high risk mean (s.d.)	High risk mean (s.d.)
15.07 (4.6)	12.89 (5.5)	13.20 (5.4)	14.30 (4.9)

Sexual dysfunction

Risk category groups did not differ significantly on sexual dysfunction scale scores ($\chi^2=4.2, 3 \text{ d.f.}, p>0.05$). Consistent with the hypothesis, scores increased between the first three groups, but the high risk mean rank score was lower than the medium-high risk mean rank score (Table 32).

Table 32 Mean sexual dysfunction scale rank score in each risk category

Low risk	Medium-low risk	Medium-high risk	High risk
48.73	56.30	65.98	65.36

Sexual obsessions

Risk category sexual obsession rank scores did not differ significantly ($\chi^2 =3.2, 3 \text{ d.f.}, p>0.05$: Table 33). Sexual obsession scores were higher in the medium-high and high risk groups, however.

Table 33 Mean sexual obsessions rank score in each risk category

Low risk	Medium-low risk	Medium-high risk	High risk
55.09	53.99	67.28	62.77

Atypical sexual outlet

Risk category groups did not differ significantly on atypical sexual outlet scores ($\chi^2=5.6$, 3 *d.f.*, $p>0.05$). Mean rank score was highest in the high-risk group (Table 34).

Table 34 Mean atypical sexual outlet scale rank score in each risk category

Low risk	Medium-low risk	Medium-high risk	High risk
60.27	50.03	64.70	66.88

Cognitive distortions and immaturity

Risk category groups did not differ significantly on cognitive distortions and immaturity scores ($F_{3,12}=2.2$, $p>0.05$). Consistent with the hypothesis, the means in the first three categories were higher than each other, but the high risk category mean was lower than the medium-low risk category (Table 35).

Table 35 Mean cognitive distortions and immaturity score in each risk category

Low risk mean (s.d.)	Medium-low risk mean (s.d.)	Medium-high risk mean (s.d.)	High risk mean (s.d.)
4.48 (2.8)	4.61 (3.2)	6.49 (4.4)	4.74 (4.1)

Justifications

Risk category group justifications mean rank scores did not differ significantly ($\chi^2 = 9.7, 3 \text{ d.f.}, \text{NS}$). Consistent with the hypothesis, the mean rank score was lowest in the low-risk category (Table 36).

Table 36 Mean justifications scale rank score in each risk category

Low risk	Medium-low risk	Medium-high risk	High risk
39.91	63.72	67.11	56.45

Summary 1

The above analyses found no evidence that scores on measures of level 2 theory variables were significantly different between risk groups. One criticism of the above analyses is that they could be affected by two factors:

1. Relatively small group sizes

2. Restriction of range in the scores imposed by the grouping recommended by the Static99 authors (this is because the maximum total score for the Static99 is 12, but the high category is defined as any score greater than 6).

Because of these potential limitations regression analyses were performed using the actual Static99 score as the dependent variable and score on level 2 theory variable as independent variable for each variable where parametric analysis was appropriate. None of the variables self-esteem ($F_{1,114} < 1$, NS), anger expression ($F_{1,114} < 1$, NS), sexual knowledge ($F_{1,114} < 1$, NS) and beliefs or cognitive distortions and immaturity¹ ($F_{1,114} < 1$, NS) were significant predictors of Static99 score. Non-parametric correlations were performed between Static99 score and variables for which parametric analyses were not appropriate. None of the variables (trait anger ($r = 0.027$, $p > 0.05$), anger suppression ($r = -0.087$, $p > 0.05$), anger control ($r = 0.029$, $p > 0.05$), atypical sexual outlet ($r = 0.094$, $p > 0.05$), social and sexual desirability ($r = -0.066$, $p > 0.05$), sexual obsessions ($r = 0.112$, $p > 0.05$) or justifications ($r = -0.112$, $p > 0.05$)) were significantly correlated with Static99 score. Thus, there was no statistically significant evidence that scores on variables measuring level 2 theories were associated with scores on a measure of recidivism risk.

¹ This regression was conducted using quadratic, rather than linear regression because a visual inspection of the data suggested this was more appropriate.

Discussion 1

Level 2 theory variables and risk category analysis

Neither analysis by risk category group comparison or (regression/correlation) analyses found significant relationships between Level 2 theory variables and risk of recidivism as estimated by Static99 score. As hypothesised, mean anger control scores increased as risk increased, but this effect was not significant. Further, scores on cognitive distortions and immaturity and justifications scale scores also showed some evidence of being higher in higher risk of recidivism groups, but this pertained between the first three levels of risk only (and regression/correlation analyses were not significant).

In this section possible reasons for the lack of association between estimated level of risk and each of the Level 2 theory variables are considered. Next, more general points about why such a relationship was not found are discussed. Finally, limitations in the Static99 and limitations of the current research are outlined.

Prior to discussing the results, it is important to note that all of the measures used to assess level 2 variables were based on self-reports of behaviour or psychological states. As such, these variables are susceptible to dissimulation and this could be a reason for the failure to find a relationship between scores on level 2 theory variables and risk of recidivism.

Self-esteem

Contrary to the hypothesis (1), this study found no significant evidence that self-esteem was lower in men estimated to be at a higher risk of recidivism. This was found in both a discrete groups analysis and a regression analysis. In this section I consider possible reasons for this lack of association.

The obvious difficulty of conducting research on sex-offenders is that it is conducted on offenders who have been apprehended (anonymous community studies e.g, Bagley *et al.*, 1994 are a very helpful exception to this). It seems likely that being apprehended for a sexual crime (and possibly being held in custody or imprisoned) is likely to reduce self-esteem. In short, the effect on self-esteem of being apprehended may be greater than levels of self-esteem prior to and during offending, and any differences between offenders at different levels of risk. Thus, the time (and place, if in a prison) may be a very important factor in the self-reported level of self-esteem obtained from the offender.

A further difficulty is that self-esteem may be associated to some other variable that is more causal to sexual offending. The research of Bagley *et al.* is important here. Bagley *et al.* found that depression score was a significant predictor of engaging in fantasies about, or actual sexual offending in men in their community sample. This is important since it is known that depression and self-esteem are associated (Battle, 1978). It is also known that the prevalence of depression in sex-offenders is high (Raymond, Coleman, Ohlerking, Cristenson and Miner, 1999).

A further difficulty in the consideration of self-esteem as an aetiological factor in sex offending is the argument that it is not a unitary construct. For example, Fleming and Courtney (1984) argue that self-esteem can fluctuate across a number of areas of a person's life. Further, it is possible that a person may have a negative view of themselves, but that the affect associated with this evaluation may not also be negative (Wells and Marwell, 1976). Finally, negative emotions are more highly associated with negative evaluations about the self in an area that is more important to the individual than in areas considered to be less important by that individual (Salovey and Rodin, 1991). Thus, low levels of self-esteem in persons convicted of sexual crime may relate to post apprehension appraisals of the self which are unrelated to sexual offending (for example, an offender may present with a very low level of self-esteem, but this could be due to the loss of the image of 'a good friend/colleague' rather than some aetiological factor in the offence process. This research used a measure of self-esteem which combines measures of general self-esteem, social self-esteem and personal self-esteem which should help to reduce any difficulties caused by measuring only, say, personal self-esteem deficits. However, it is clear that the measure may not assess all possible domains of self-esteem.

A further hypothesis was that high self-esteem (egotism) would be more prevalent in higher risk of recidivism groups (2). The results did not support this hypothesis. This may be due to the factors outlined above. Certainly, however, it would seem to be clinically important if a recently apprehended offender has a very high level of self-esteem. This may suggest dissimulation or some other factor that may merit investigation by a clinician.

Anger

Contrary to hypotheses (3) this research found no evidence that trait anger, anger suppression, or anger expression were associated with estimated risk of recidivism. Consistent with the hypothesis, anger control scores increased between each discrete risk category, but group mean rank scores did not differ significantly. The possible relevance of this finding is discussed further later in this discussion.

The lack of association between risk of recidivism and scores on the STAXI scales may be attributable to dissimulation on behalf of offenders (and certainly there is evidence from this research - see Study 3 - and from others e.g. Sewell and Salekin (1997) that dissimulation is common in sex-offenders). However, it also possible that this lack of association is due to any anger that the offender may feel toward:

- the self for committing the act and/or getting caught;
- the victim or other person who reported the crime and;
- professionals involved in the case.

at the time the anger assessment takes place, rather than anger experienced at the time of the offence itself (note that the STAXI trait anger scale inquires only about anger in the last month). It may be quite wrong to extrapolate between a measure of anger in the last month to the level of anger at the time of the offence.

Further, it may be the case that the putative relationship between anger and violence is incorrect as Tice and Baumeister (1993) argue. For example, Loza and Loza-Fanous found no significant correlation between the number of violent offences of

two hundred and fifty-two incarcerated male offenders and scores on four measures of anger. Further, it has been found that anger alone does not necessarily lead to aggression (Zillman, 1993), and that aggressive acts can occur without anger (Blackburn, 1989).

A further difficulty is the fact that most instruments are developed on non-forensic populations but are used for research and clinical purposes on forensic populations (Loza and Loza-Fanous (1999). This is not a trivial point since it has been found that the factor structure of anger scales varies according to whether they are used with forensic or non-forensic samples (Kroner and Reddon, 1992; Mills, Kroner and Forth, 1998). Thus, it could be that differences are not found between levels of risk of recidivism simply because instruments are not measuring the appropriate factors adequately. Any further study investigating the relationship between anger and risk of recidivism in sex offenders should use a scale validated on forensic populations (e.g., The Novaco Anger Scale (NAS: Novaco, 1994)) to alleviate this problem (STAXI data were used in this study since they were the only data pertaining to anger available in the archive). Indeed, Jones, Thomas-Peter and Trout (1999) found that a discriminant function analysis performed on NAS questionnaires completed by 58 outpatients referred for anger management and 212 questionnaires completed by a non-clinical sample (NHS employees who had never asked for help regarding anger management problems, or had a conviction for a violent offence) was able to correctly classify 95% of the entire sample.

Finally, the relationship between anger and sexual offending is difficult to assess partly because there exists little agreement on the definition of the construct of

anger, and because different measures place emphasis on different aspects of anger (Loza and Loza-Fanous, 1999). For example, the Multidimensional Anger Inventory (MAI; Siegel, 1986) provides measures of: the frequency of experienced anger; duration of anger; magnitude of anger; anger suppression; guilt; brooding; hostile outlook and a number of anger provoking situations. The Reaction to Provocation Scale (Novaco, 1994) includes items measuring impulsivity, somatic tension and irritability – items not included in the MAI (Loza and Loza-Fanous, 1999). Thus, not only may instruments have a different factor structure when used with forensic populations they also measure different aspects of anger at the outset. Clearly, some of these aspects of anger may be more important in sexual offending than others.

Psychosexual variables

Contrary to hypotheses (4-8), this study found no evidence that various paraphilic type behaviours (as measured by the atypical sexual outlet scale of the MSI), sexual obsessions, sexual knowledge and beliefs, the denial of sex drive and sexual behaviours. This is an important finding since all of these variables are used as outcome measures in the treatment of sex-offenders (Beech *et al.*, 1998).

The lack of association between scores on these scales and risk of recidivism may partially be due to the content of some of the scales. For example, the ASO scale of the MSI includes items measuring behaviours of forensic concern (e.g. window peeping), but also includes items inquiring about behaviours such as bondage and cross-dressing. The relationship between these behaviours and sexual offending is unknown. However, it is clear that two people could have equivalent scores on the ASO scale, but that one person scores on items relating to window peeping and

bestiality, while the other scores on items related to bondage and cross dressing. The risk of sexual offending may be very different in such men. Further research could test whether scores on these variables have high correlations with a measure of socially desirable responding since it seems likely that scores on these scales may be particularly susceptible to dissimulation. This may be the case because respondents may find the content of such scales embarrassing.

Cognitive distortions

Contrary to the hypothesis (7) scores on measures of cognitive distortions did not increase between all of the risk groups. This finding is contrary to the finding of Simkins *et al.* (1992). However, Simkins *et al.* used clinician assessed risk of recidivism as the dependent variable in their regression analysis, and it has been found that clinician ratings have very poor predictive validity (Hanson and Bussiere, 1998). Scores on the justifications scale were also not related to risk of recidivism. The findings relating to the CDI and justifications scales could be due to dissimulation on behalf of participants. Indeed, Marshall *et al.*, 1999 have argued that:

‘In our clinical work we have found that the responses of rapists and child molesters in treatment are far more revealing of inappropriate attitudes than is evident in their responses to measures of any one of the many cognitive distortions. Our clinical assessment procedures rarely reveal the sort of negative attitudes we see clearly during treatment, despite our attempt to control for socially desirable response sets’

This observation is perhaps not surprising. Clinical work often constitutes a much larger sample of the offenders' behaviour and is perhaps more likely to generate emotions or situations which elicit cognitive distortions (e.g., the offender being challenged about their offending behaviour by other offenders and / or therapists in a group setting).

Further, it is clear that responses to items relating to cognitive distortions may vary with respect to the amount of denial exhibited by the offender. Cluster analytic research has identified four types of denial/cognitive distortion in men convicted of sexual offences against adults or children (Kennedy and Grubin, 1992).

1. Men who admit offending, but deny causing harm to the victim: these men often claim to have 'helped' the victim in some way. These men will accept treatment if offered, but not treatment aimed at changing their sexual behaviour.
2. Men who blame the victim (and third parties such as their wife) for the offence.
3. Men who admit the offence and the harm caused to the victim. These men often blamed a change in their usual behaviour and/or mental state for their offending behaviour.
4. Men who completely deny committing the offence. Unsurprisingly, these men did not feel they would benefit from treatment for sexual offending, although they were prepared to accept treatment for common mental disorders.

The different types of denial/distortion identified by Kennedy and Grubin (1992) have important implications for the measurement of denial/distortions, since they suggest that cognitive distortions are unlikely to represent a unitary construct. Thus, it is possible that the failure to observe differences in CDI and justifications scale scores and level of risk could be due to limitations of these scales to measure different aspects of cognitive distortions. This is not a trivial point since Kennedy and Grubin found that men in Group 1 were significantly more likely to have offended against a male and significantly more likely to have offended against a stranger. Unsurprisingly, given that male and stranger victims are items in the Static99, men in this group had the highest rate of recidivism (Kennedy and Grubin, 1992).

Offenders' experience of child sexual abuse

There was no significant evidence that CSA was related to increased risk of recidivism. This result is consistent with Hanson and Bussiere's (1998) meta-analysis which did not find that CSA was a predictor of recidivism (It is important to note that the meta-analysis included a substantial proportion of men who had been in secure hospitals. None of the men in this sample were classified as mentally disordered offenders).

The lack of association between CSA and recidivism risk is likely because CSA is neither a necessary cause of sexual offending – not all sex-offenders claim to have been sexually abused as children (see Howitt (1995) for a brief review of research in this area). Bagley *et al.*'s data support this suggestion by showing that a number of variables are predictive of deviant sexual fantasy and/or offending. Further, a risk

index designed to identify persons at risk of sexual offending after experiencing CSA includes some twenty-four items grouped under nine categories (see Watkins and Bentovim, 2000). The data of Bagley *et al.* and the perpetrator risk index created by Watkins and Bentovim suggest that the relationship between CSA and subsequent perpetration is complex and should best be investigated using multivariate techniques.

Limitations of risk of recidivism inventories

The lack of association between scores on measures of level 2 theory variables and risk of recidivism score could also be due to the fact that the Static99 does not predict risk perfectly. This is likely because the Static99 (and indeed any recidivism risk measure) does not yet include all of the variables that may predict sex offending. Such variables may relate to aspect of the person's forensic history which are yet to be examined in a meta-analysis. For example, the SVR-20 is a more accurate predictor of sexual offending and it includes items that measure different aspects of the forensic history to the Static99:

- high-density sex offences;
- escalation of sex offences;
- relationship problems;
- employment problems;
- psychopathy;
- substance misuse problems;
- major mental illness;
- lacks realistic plans, and;
- negative attitude towards intervention.

The SVR-20 was not used in this study since it has only been validated on a very small ($n = 95$) number of offenders.

It is well known that psychopathy is highly associated with risk of recidivism (Hanson and Bussiere, 1998) and there is evidence to suggest that non-cooperation with treatment is a risk factor in recidivism (Hanson and Bussiere, 1998; Hanson and Harris, *submitted*, a, b; Craissati, and McGlurg, 1997).

Finally, scores on such schemes are based on the simple addition of variables in the instrument. It could be that some variables are more important than are others, and should be weighted accordingly.

Limitations of research on level 2 theories and their relation to risk of recidivism

The data presented in this research suggest that scores on measures of level 2 theory variables are not related to risk of recidivism. A larger sample may have identified such a relationship, but there are reasons for suspecting that this may not be the case. For example, it may be that it is not the score on a given variable that is important, but a profile of scores on a number of measures that is causal in recidivism risk. This argument is consistent with the quadripartite model of Hall and Hirschman (1991). However, research very recently published and in press suggests that the relationship between level 2 theory variables and risk of recidivism may be affected by the assumptions made about the emotional states deemed causal to sexual offending, and the presence of these states at any one time.

Emotional state at the time of offending: 1

Level 3 theories seek to understand the behavioural sequences and emotional and motivational factors implicated in sexual offending. Research at this level has profound implications for understanding the aetiology and maintenance of sexual offending. For example, the majority of level 2 theories are concerned with various types of dysfunction in offenders (e.g., low self-esteem, sexual difficulties) or deficits (poor sexual knowledge). The tacit assumption of these theories then, is that sexual offending is committed against a background of disorder or dysfunction. This is probably due to the fact that the model of relapse prevention was originally based on the relapse model for addictive behaviours (Ward and Hudson, *in press*). This model suggested that a number of negative states preceded relapse into further substance misuse. Subsequent models of relapse in sexual offending (e.g., Pithers, 1990) emphasised the importance of interpersonal conflicts, negative emotional states and external factors (e.g. baby-sitting) as important in the relapse process (see Hudson, Ward and McCormack, 1999).

Recent research demonstrates that for a substantial proportion of offenders (those who commit offences against adults and children) sexual crime is preceded and accompanied by *positive* mood states (Hudson *et al.*, 1999). Hudson *et al.* asked eighty-six incarcerated sex-offenders (seventy-two men convicted of sexual offences against children, and fourteen men convicted of offences against adults) to provide either a written or verbal vignette of their most recent or typical offence. The men were asked to provide details on:

- how they felt prior to the offence and ;
- a clear description of the sequence of events from prior to the crime to their feelings and decisions subsequent to the crime

Independent raters evaluated the vignettes and rated them on one hundred and twenty points covering six aspects of the vignette:

- initial affect;
- type of planning (implicit/explicit plan);
- affect in the high-risk (immediately prior to offending) situation;
- focus of offending (self-focused or 'mutual' focused regarding enjoyment of the act(s));
- post offence evaluation (wish to offend again, avoid offending again) and;
- decision regarding future offending.

A random sample of 20 vignettes were evaluated by both raters with 87% agreement between the raters. The research identified eight 'pathways to offending' (Table 37).

Analysis of offenders comprising the three major pathways (1, 5 and 8) found no evidence for significant differences between offenders regarding age, sentence length, or length of criminal history (Hudson *et al.*, 1999). The proportion of offenders who committed offences against children or adults did not differ significantly between the pathways (Hudson *et al.*, 1999). Hudson *et al.*'s data suggest that positive affect is evident prior to sexual offending in nearly forty per cent of cases. Indeed, Hudson *et al.* state that

‘it is salutary that this pathway [pathway 1] accounted for almost one third of the sample’ and that ‘This serves to highlight how important appetitive processes are ...’.

Hudson *et al.* further argue that pathway 1 represents skilled performance, rather than some form of deficiency as conventional relapse prevention models of sexual offending suggest. The implications for level 2 theories of these data are obvious. For a not inconsiderable proportion of offenders, sexual offending is driven by appetitive, explicit processes rather than being related to some form of deficit or disorder (apart from the crime itself). Thus, research which aims to test level 2 theories could be impeded by the fact that it is predicated on the assumption of ego-dystonic (e.g. low self-esteem, anger) affect or deficits. The fact that possibly forty per cent of offenders may not be experiencing such difficulties at the time they offend will inevitably affect the results.

Table 37 Pathways to offending (created from Hudson *et al.*, 1999).

Offence pathway (% of offenders)	Affect prior to offence	Planning regarding offence	Affect during offence	Offence focus (offender wants /perceives 'mutual pleasure' or pleasure for self only)	Offenders' self evaluation after offence	Attitude toward future offending
1 (32.5%)	Positive	Explicit	Positive	Mutuality	Positive	Persist
2 (4.7%)	Positive	Explicit	Positive	Mutuality	Negative	Avoid
3 (2.3%)	Positive	Implicit	Positive	Mutuality	Negative	Avoid
4 (8.1%)	Negative	Explicit	Positive	Self-focused	Positive	Persist
5 (16.3%)	Negative	Explicit	Positive or Negative	Self-focused	Negative	Avoidance
6 (5.8%)	Negative	Explicit	Positive	Self-focused	Negative	Persistence
7 (5.8)	Negative	Implicit	Positive	Self-focused	Positive	Persist
8 (24.4%)	Negative	Implicit	Negative	Self-focused	Negative	Avoid

One obvious problem with this categorisation, however, is that it is entirely possible for an offender to commit their *first* offence via one pathway and then change to a different pathway. Further, different pathways might be used with different victims. However, it is clearly important that future research should attempt to control for offence pathways when considering variables hypothesised to be important in the aetiology or maintenance of offending. For example, it seems likely that anger or low self-esteem may only be important aetiological factors for persons for whom negative affect precedes their offending. The possibility follows from this that treatment programs for sex offenders which aim to raise self-esteem may actually increase the risk of recidivism in men whose offending is associated with positive affect². Indeed, Huson *et al.*, (1999) have argued that a rethinking of management approaches may be necessary to avoid forcing ‘square pegs into round holes’ regarding the most effective management of the variety of persons (i.e. appetitive / non-appetitive) convicted of sex offences.

Emotional state at the time of offending: 2

Psychological variables are dynamic risk factors that affect the likelihood of recidivism (Zamble and Quinsey, 1997). Dynamic variables can be divided into stable (trait) or acute (state) risk factors. The implicit predicate in level 2 theory research is that stable dynamic factors are important in the aetiology of sexual offending. This is obvious since the measures used to assess level 2 theory variables have not been specifically designed to measure transitory states. Further, a consideration of research papers quickly shows that researchers do not consider the

effect of temporary states when discussing their findings. This is likely due to the fact that research on acute dynamic factors in sexual offenders has only recently been conducted and is yet to be published (e.g. Hanson and Harris, *submitted*, a, b).

Recent research (principally with non-sex offenders³) suggests that acute dynamic factors are important in offending. For example, Zamble and Quinsey (1997) asked offenders about emotions they experienced in the month and the two days preceding their offence. Anger was very commonly reported to be experienced thirty days (31% of offenders) and forty-eight hours (28% of offenders) prior to offenders committing a further offence (Zamble and Quinsey, 1997).

The potential role of dynamic variables in recidivism has recently been researched by asking probation officers about the behaviour of clients under supervision up to 5 years previously (Hanson and Harris, *submitted*, a). A comparison of information provided by probation officers on 208 recidivists and 201 non-recidivist sex-offenders found that ratings of the offenders' anger and negative mood were not correlated with recidivism six months prior to sex crime recidivism. Ratings one month prior to recidivism were significantly correlated with recidivism, however (anger $r=0.2$, $p<0.001$; negative mood $r=0.16$, $p<0.01$). Material in case notes written during supervision supported the reports of the probation officers, since prior to sex offending the recidivists showed an increase in anger ($r=0.11$, $p<0.05$). Further, anger remained a significant acute dynamic predictor in a regression analysis including static predictors and stable dynamic predictors.

³ Zamble and Quinsey's study included some sex-offenders, but the data pertaining to these men were not analysed separately.

Hanson and Harris argue that these findings suggest that ‘psychological symptoms appeared as acute, but not stable risk factors’. These findings are important, but need to be interpreted with some caution. First, the reliability of the probation officer’s judgements is unknown (although data from case notes written at the time support verbal reports of offenders’ behaviour at the time). Second, Hanson and Harris (*submitted, b*) used a non-standardised scale to assess anger and negative mood. Third, neither negative mood or anger were operationally defined in the study and it is therefore possible that probation officers may have been rating different states/behaviours from each other. A more robust way to study the relationship between dynamic variables and recidivism would be to create psychometrically acceptable scales for probation officers to use to measure dynamic variables and then to conduct a prospective study.

Hanson and Harris (*submitted, b*) developed an actuarial scale which assesses both stable and acute risk factors and which has demonstrated good predictive validity (ROC area of 0.74). This scale (Sex-offender Need Assessment Rating: SONAR) was developed from the data collected in the Hanson and Harris (*submitted, a*) research mentioned in the introduction. This instrument contains 9 items which measure both stable and acute risk factors (Table 38).

Table 38 Sex-offender Needs Assessment Rating Scale Items (see Hanson and Harris for scoring criteria).

Stable items	Acute items
Intimacy deficits	Substance abuse
Social influences	Negative mood
Attitudes (towards rape and or child molestation)	Anger/hostility
Sexual self-regulation	Opportunities for victim access
General self-regulation	

A logistic regression analysis controlling the variables age, IQ, Static99 score and Violence Risk Appraisal Guide score (Quinsey *et al.*, 1998) found that SONAR score was a significant predictor of recidivism (odds ratio 1.38, 95% confidence intervals 1.22 – 1.55), and that changes in acute risk factors led to improved prediction of recidivism risk after controlling for static and stable risk factors (Hanson and Harris, *submitted*, b).

Data from Hanson and Harris (*submitted*, a, b) suggest that the most fruitful areas of inquiry are likely to be in the development of measures of sexual regulation, general self-regulation and attitudes towards offending (since these correlate with Static99 scores when measured using the SONAR). Importantly, however, these ratings were provided by professionals and not based on self-report.

The anger control data from this study seem to support Hanson and Harris's arguments about self-regulation, and a new theory about the nature of the resource(s) required for self-regulation. Muraven and Baumeister (2000) use a muscle metaphor to describe how self-regulation leads to a depletion of resources available for further

self-regulation. They argue that self-control comprises a 'strength' which is used and consumed any time the individual is required to inhibit or alter a response, and that this 'strength' takes some (unspecified) time to recover to its previous level. Muraven and Baumeister also assume that individuals vary in the amount of self-regulatory strength that they possess.

Muraven and Baumeister (2000) argue that Glass, Singer and Friedman's (1969) experiment supports their thesis. Glass *et al.* (1969) argued that adapting to a stressor should consume resources available for self-control and result in poorer subsequent performance on a task requiring self-control. In Glass *et al.*'s (1969) experiment participants were exposed to unpredictable noise (high stress condition) or predictable noise (low stress condition) and then asked to complete a proof reading task. Scores on frustration tolerance and a proof reading task were significantly worse in the unpredictable noise group.

Inhibition of behaviour decreases after performing a task requiring self-control. Muraven, Collins and Nienhaus (1999) found that male social drinkers who had been required to engage in a self-control task drank more beer and had higher blood alcohol concentrations than men not required to engage in a previous self-control task. Self-control is also reduced after experiencing uncontrollable electric shock, being discriminated against, and having to deal with bureaucracy (Glass and Singer, 1972).

Muraven and Baumeister (2000) review further evidence to support their thesis and also counter arguments that observed effects could be due to learned helplessness or

negative emotional states impeding the process of self-control. The relevance of Muraven and Baumeister's work is clear with regard to the findings regarding anger control in this study: increased efforts to control anger should result in depletion of coping resources, resulting in decreased self control and, possibly, offending. Indeed, Muraven and Baumeister (2000) argue that

'In summary, experiences that require adjustment to unpleasant and uncontrollable situations (e.g. not losing one's temper) result in poorer self control subsequently'.

This is not to suggest of course that individuals should not control their anger (at times this may be the only functional response). However, it does suggest that continuous self-control leads to a reduction of resources necessary to maintain such control.

The data presented here are not necessarily inconsistent with the data of Hanson and Harris (*submitted*, a, b). Anger observed in recidivists by their probation officers may have represented the end-stage of a process of reduced self-control (including the ability to control anger). This is important, since it would suggest that it is (reduced) self-control, rather than anger which is more causal to offending behaviour. Indeed, Hanson and Harris (*submitted*, b) do not suggest that anger should be a topic for further research, but that sexual and general self-regulation should. This argument is supported by the fact that general and sexual self-regulation are items in the stable dynamic section of the SONAR and stable dynamic factors were better predictors.

Summary of relationship between risk of recidivism data and level 2 theories

Data from this study and from Hudson *et al.* (1999) and Hanson and Harris (*submitted*, a, b) do not support much current level 2 theory research. New evidence suggests that sexual offending may be driven either by appetitive processes, or by acute negative changes in psychological state which may result in (or be a measure of) reduced self-control.

Study 2. Outcome data

The hypotheses pertaining to Study 2 were as follows:

9. Men in a higher risk recidivism group will have significantly lower scores prior to and after twelve months therapy on a measure of denial (indicating more denial) of sexual thoughts and behaviours than men in a lower risk of recidivism group.
10. Men in a higher risk recidivism group will have significantly higher scores on cognitive distortions which support sexual offending prior to and after twelve months therapy than men in a lower risk of recidivism group.
11. A significantly smaller proportion of men at higher risk of recidivism will achieve reliable change status on outcome measures after twelve months therapy.

Method 2

Ethical approval was provided by the Ealing Hammersmith and Fulham NHS Trust Ethics Committee.

Participants 2

Power analysis

Power calculations based on $\alpha = 0.05$, power = 0.80 and assuming a large effect size (0.8) of group categorisation based upon recidivism risk suggested that the number of participants required would be 50 (25 per group).

Inclusion criteria and characteristics of group therapy

Participants were selected for inclusion if: 1. They had completed twelve months of group therapy; and 2: There was no record that the offender was mentally disordered or had a learning disability. All data were obtained via search of a research archive.

All offenders had received therapy including treatment modules on: cognitive distortions; sexuality and personal growth, understanding offending behaviour; relationship issues and attitudes towards women and children. Therapy took place in seven groups (mode group size = 7; range 6-8) of men convicted of contact and/or non-contact offences committed against adults and/or children. The research archive did not contain data on how uniform the groups were with respect to the proportion of offenders convicted of contact / non-contact offences committed against children or adults.

Materials 2

Beech *et al.* (1999) factor analysed the scales used in their evaluation of a sex-offender treatment programme and found that this analysis yielded three factors:

1. Denial/ admittance
2. Social competence
3. Pro-offending attitudes

Thus it is important that the measures used in the evaluation of outcome load onto these three factors. Variables that load highly onto factors are more pure measures of those factors (Tabachnik and Fidell, 1996) and loadings above 0.6 are considered very good, while loadings of 0.71 or greater are considered excellent (Comrey and Lee, 1992). According to Comrey and Lee's (1992) criteria, the MSI sub-scales social and sexual desirability, cognitive distortions and immaturity and justifications have factor loadings great enough for them to be considered good measures of the factors identified by Beech *et al.* (1999: Table 39).

Table 39 Factors identified by Beech *et al.* (1998) and MSI sub-scales which load onto these factors (adapted from Beech *et al.*, 1998)

MSI sub-scale	1. Denial / admittance	2. Social competence	3. Pro-offending attitudes
Cognitive distortions and immaturity	0.4	0.6	0.5
Justifications	0.0	0.1	0.8
Social & sexual desirability	0.6	-0.4	-0.2

Thus, the following MSI sub-scales will be used as outcome measures because they have sufficiently high loadings on the factors identified by Beech *et al.* (1999): Cognitive distortions and immaturity (loads 0.6 on social competence factor);

Justifications (loads 0.8 on pro-offending attitudes factor); and social and sexual desirability (loads 0.6 on denial/admittance factor).

Procedure 2

All data pertaining to outcome of therapy were obtained via file review. Reliable change was assessed using the formula of Cristiensen and Mendoza (1986) since it has been found to be the most conservative RC method with the smallest number of statistical assumptions (Hafkenschied, 2000).

Equation 1 Christiensen and Mendoza (1986) reliable change formula

$$RC = \frac{X_1 - X_2}{Sedif}$$

Where $Sedif = \sqrt{2(se_1^2 * se_2^2)}$ and

X_1 = pre-treatment scores; X_2 = post-treatment scores;

se_1 = standard error of measurement of the difference scores;

and $Sedif$ = standard error of the difference scores

Results 2

Demographics, offence characteristics and Static 99 risk categories

Fifty men completed twelve months of group therapy. The average age of the men was forty years (SD 10.4). Probation service records were not accurate enough to provide data on ethnic background or occupational class of the men. Twenty nine men (58%) were convicted of crimes against children and thirty seven men (74%)

were convicted of crimes involving sexual contact with the victim. The proportion of men in each risk category did not differ significantly from the proportion of men in each risk category in the validation sample ($\chi^2=5.884$, 3 *d.f.*, $p>0.05$: Table 40).

Table 40 Number of men in each Static99 risk category

Low risk	Medium-low risk	Medium-high risk	High risk
19	14	10	7

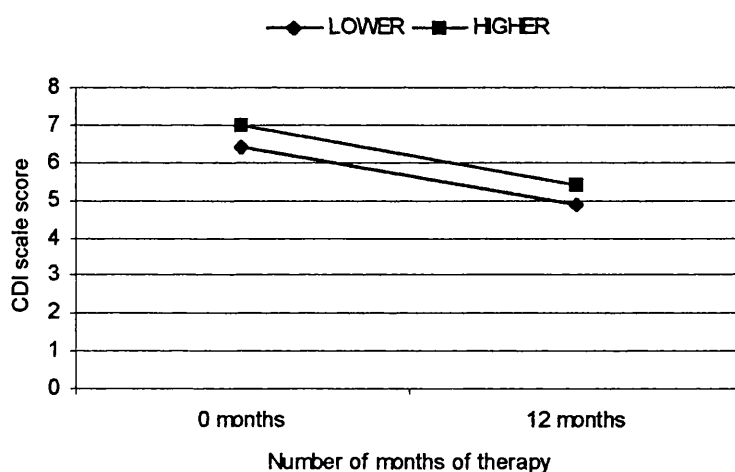
The men were divided into two categories based on a split at the fiftieth percentile score on the Static99. This created a lower risk group ($n=28$), and a higher risk group ($n=22$). Static99 scores were significantly higher in the higher risk group ($t_{48}=-9.966$, $p<0.001$). The proportion of men with a history of CSA did not differ significantly between the lower and higher risk groups ($\chi^2<1$, 1 *d.f.*, $p>0.05$). The proportion of men who committed offences against children or adults did not differ significantly between the groups ($\chi^2=2.54$, 1 *d.f.*, $p>0.05$). A significantly greater proportion of men in the lower risk category had committed non-contact offences (lower 65%; higher 35%: $\chi^2=4.54$, 1 *d.f.*, $p<0.05$).

Raw scale scores were not normally distributed (all distributions were positively skewed), therefore analyses were conducted on square root transformations of the raw data. Analysis of covariance was used to control for the possibility of differential treatment response in offenders convicted of either contact or non-contact offences or offences against children or adults. Alpha was set at $p<0.02$ to control for multiple testing.

Cognitive distortions and immaturity

CDI scale scores decreased after twelve months of group therapy, but this effect was not significant after adjusting alpha ($F_{1,46} = 5.3, p = 0.027$). The interaction between time of assessment (0 and twelve months of therapy) and risk group was not significant ($F_{1,46} < 1, p > 0.05$). None of the interactions between time of assessment and the covariates were significant (contact/non-contact offence $F_{1,46} < 1, p > 0.05$; child/adult victim $F_{1,46} = 1.4, p > 0.05$). CDI scale scores did not differ significantly between the lower and higher risk groups ($F_{1,46} < 1, p > 0.05$) or between the covariates (contact/non-contact offence $F_{1,46} < 1, p > 0.05$; child/adult victim $F_{1,46} = 2.9, p > 0.05$: Figure 1).

Figure 1 Mean CDI scores at 0 and 12 months of therapy by risk group

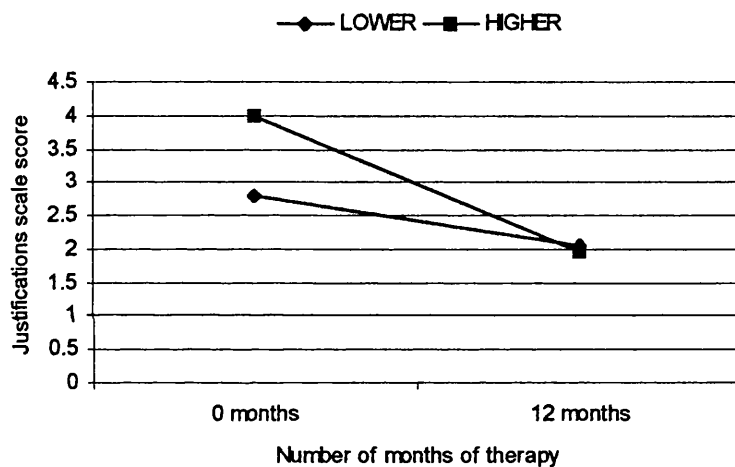


Justifications

Justifications scale scores decreased significantly after twelve months of group therapy. ($F_{1,46} = 7.43, p > 0.009$). The interaction between time of assessment (0 and twelve months of therapy) and risk group was not significant ($F_{1,46} < 1, p > 0.05$).

None of the interactions between time of assessment and the covariates were significant (contact/non-contact offence $F_{1,46}=2.7$, $p>0.05$; child/adult victim $F_{1,46}=1.05$, $p>0.05$). Justifications scale scores did not differ significantly between the lower and higher risk groups ($F_{1,46}<1$, $p>0.05$) or between the covariates (contact/non-contact offence $F_{1,46}<1$, $p>0.05$; child/adult victim $F_{1,46} 2.06$ $p>0.05$: Figure 2).

Figure 2 Mean Justifications scale scores at 0 and 12 months of therapy by risk group

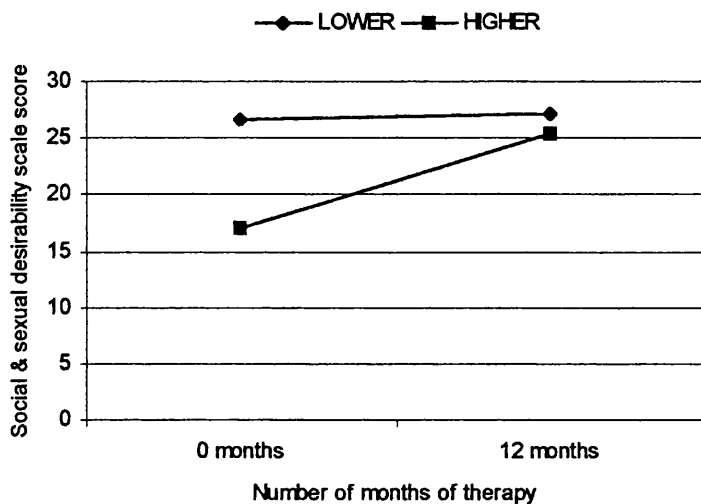


Social and sexual desirability (SSD)

Social and sexual desirability scale scores increased after twelve months of group therapy, but this effect was not significant ($F_{1,46} <1$, $p > 0.05$). The interaction between time of assessment (0 and twelve months of therapy) and risk group was not significant ($F_{1,46} = 2$, $p>0.05$). None of the interactions between time of assessment and the covariates were significant (contact/non-contact offence $F_{1,46}<1$, $p>0.05$; child/adult victim $F_{1,46} <1$, $p>0.05$). Social and sexual desirability scale scores did

not differ significantly between the lower and higher risk groups ($F_{1,46}=3.7, p>0.05$) or between the covariates (contact/non-contact offence $F_{1,46}<1, p>0.05$; child/adult victim $F_{1,46} 3.8, p>0.05$: Figure 3).

Figure 3 Mean SSD scale scores at 0 and 12 months of therapy by risk group



Reliable therapeutic change

Logistic regression analyses using forward and backward Wald elimination techniques were conducted on the variables: lower/higher risk of recidivism; contact/non-contact offender; child/adult victim. None of these variables were significant predictors of reliable change on the social and sexual desirability, cognitive distortions and immaturity or justifications scales (all Wald statistics $<1, p>0.05$: Table 41).

Table 41 Proportion of men achieving reliable change on each outcome scale by recidivism risk group

Outcome scale	lower Risk	higher risk
	% (n)	% (n)
Social and sexual desirability	43 (12)	41 (9)
Cognitive distortions and immaturity	46 (13)	46 (11)
Justifications	43 (12)	36 (8)

Study 2 discussion

Contrary to hypotheses (9 and 10), scores on outcome measures did not differ significantly between men at lower and higher risk of recidivism after twelve months of group therapy. Contrary to the hypothesis (11) the proportion of men achieving reliable change did not differ between the lower and higher risk groups.

Descriptive statistics were somewhat consistent with the hypotheses, however, and it is possible that the relatively small number of men in this study (and the uneven group sizes) increase the likelihood of Type II error. This is a methodological shortcoming, but it is uncommon for sex-offender outcome studies in the UK to have larger numbers of offenders. For example, the first Home Office study of treatment for sex-offenders included a similar number of offenders ($n=52$: Beckett *et al.*, 1994). Further possible reasons for the failure to find significant differences between the groups are presented below.

Men at higher risk of recidivism may not be harder to treat

A further possibility is that men estimated to be at higher risk of recidivism are not necessarily any harder to treat than are men at lower risk of recidivism. It may be that the critical variable regarding outcome is self-reported external locus of control as suggested by the data of Fisher *et al.* (1997), especially since locus of control scores correlated with recidivism risk score. Indeed, it is tempting to consider that persons who score high on external locus of control may have difficulties with self-regulation: i.e. these offenders experience loss of mental control and blame this on external influences. Future research on outcome with these men could use internal / external locus of control score and a measure of self-control as independent variables in the assessment of treatment outcome.

Therapeutic reactance

Probably most men who receive treatment for sexual offending are mandated to do so by a court (Seto and Barbaree, 1999). Thus, their attendance at group therapy sessions is rarely likely to be voluntary. All the men in this study were required to attend by a court, and it may be that reactance has a larger effect on scores on outcome measures than does initial risk level.

Future research should include a measure of treatment reactance since this may prove to be a good predictor of outcome. Indeed, it may be a useful predictor of treatment dropout. The therapeutic reactance scale (Dowd, Milne and Wise, 1991) is

a useful and brief measure of reactance that has normative data and may be useful in this regard.

Dissimulation

Self-report data are vulnerable to dissimulation and, while no data were collected regarding possible socially desirable responding in this study, data from Study 3 of this current research found increased levels of dissimulation in sex-offenders when compared with non-offenders and non-sex offenders.

Such dissimulation could be simple random faking of responses or 'best guess dissimulation'. For example, men in this study who demonstrated reliable change after treatment could simply be men who realise what treatment changes are required by the therapists and who then complete outcome measures according to 'requirements' rather than providing accurate data (see McConaghy, 1999 for a good discussion of this point). Indeed, Fisher *et al.* (1997) found that IQ was inversely correlated with locus of control score (those with a higher IQ had a more internal locus of control score), and that all men who had scores indicating internal locus of control were in the successfully treated group. By extension, men in the successfully treated group had higher IQs. These men may be more able to dissimulate on self-report measures, or be better able to benefit from therapy. The IQ of the men in this study is not known, and this could have more of an effect (either through enhanced ability to dissimulate or greater ability to genuinely benefit from therapy).

There is evidence for potential dissimulation by sex-offenders in treatment. Seto and Barbaree (1999) conducted an outcome study with a mixed group of sex-offenders

($n=238$: rapists and paedophiles) using clinician ratings of behaviour within treatment sessions and treatment change as outcome variables. Multiple regression analysis found that men who had higher psychopathy scores (but were not necessarily classed as psychopaths according the Hare's (1991) criteria) and whose behaviour in treatment was rated as more positive were significantly more likely to commit a further sexual offence. Thus, it seems likely that these men may have understood, and behaved consistently with, the goals of therapy rather than making a genuine change in their behaviour.

The outcome measures may be only weakly (if at all) related to recidivism

Data from Study1 support this possibility. If the measures used to assess outcome are not related to risk of recidivism it is not surprising that scores on these measures were not significantly different between the groups at the start or the end of therapy. Recent research has found that acute changes in psychological state are important risk factors in recidivism (Hanson and Harris, *in press*, a, b) and the outcome measures used in this study are not designed to assess such changes. That the MSI scales may not be related to recidivism is a troublesome possibility since MSI scales are currently being used in the evaluation of the Home Office's sex-offender treatment program (see Beckett *et al.*, 1994; Beech *et al.*, 1998) or community studies of sex-offender therapy conducted by researchers working with the Probation Service (Allam, 1998) or independently (Craissati and McGlurg, 1997).

Offender heterogeneity

Failure to find differences in therapy outcome could be attributable to different proportions of appetitive and non-appetitive offenders in the different risk category groups. If these men have a different profile of scores on current outcome measures (such as the MSI) then the analysis and interpretation of outcome data are complicated. Indeed, Hudson *et al.* argue that ‘ ... different offence pathways are associated with quite different treatment needs and issues ... ’, and that ‘ ... the influence of appetitive processes should not be overlooked in our attempts to understand and treat these men’. If these different offenders have very different treatment needs as Hudson *et al.* (1999) suggest then it seems likely that outcome will need to be measured in different ways for the two groups. For example, Hudson *et al.* argue that men whose offending behaviour is driven by appetitive processes need treatment aimed at changing their dysfunctional beliefs about harm to victims (e.g. victim empathy work: Hudson *et al.*, 1999). Conversely, Hudson *et al.* argue that men who have poor self control (e.g. pathway 8 where offences are preceded by negative affect and show only implicit planning) need help to improve their self-regulatory skills, and also need help with problem solving skills.

It is also possible that treatment outcome may have been improved if the groups had included offenders convicted of offences against only adults or children. This may have helped to ensure that the material discussed within the groups was perceived to be relevant to all of the offenders all of the time. Further there remains the risk that

offenders convicted of offences against adults may learn how to offend against children (and vice versa) where offenders are treated in such mixed groups (i.e. men convicted of offences against adults or children), and this may increase the risk of recidivism.

Relatedly, there is concern that risk of recidivism may be *increased* after treatment due to sex-offenders being exposed to more deviant material and learning the modus operandi of more devious and/or dangerous sex-offenders (Quinsey, Khanna and Malcolm, 1998). Although scores on the justifications scale were significantly different (and in the predicted direction) after twelve months of group therapy it is possible that further progress could have been made if the sample had contained offenders of only one type (appetitive *vs.* non-appetitive) or level of risk of recidivism. In short, men at lower risk of recidivism may have had better outcome if they had not been in a treatment group with men at a higher risk of recidivism.

The data were not analysed on an intention-to-treat basis

In this respect, this research is not dissimilar to two Home Office evaluations (Beckett *et al.*, 1998; Beech *et al.*, 1994). Failure to include treatment dropouts is a serious methodological problem that may have important implications for the results of sex-offender treatment studies. This is because it is known that treatment dropout is a predictor of recidivism (Hanson and Bussiere, 1998). Failure to complete therapy in sex-offenders is often attributed to personality differences such as impulsivity, lower levels of self control (Marques, Nelson, West and Day, 1994) and fewer social skills (Chaffin, 1994). Thus, failure to include treatment dropouts in the analysis could have resulted in an over-estimation of treatment effectiveness in the

higher risk group (since it is likely that men who dropout of treatment may score higher on the Static99). Reliable data on dropouts was not available from the probation service, although it is known that not all men who commenced group therapy were in the group for the minimum of twelve months.

Men were not offered treatment based on random allocation

Again, this is consistent with the data from the Home Office evaluations and the evaluations of Allam (1998). This is not a trivial point. Failure to randomise clients to treatment conditions (or no treatment) can result in bias in the findings of research. For example, men may be chosen for inclusion in a treatment group because it is believed that they will respond to treatment, or will not pose a threat to treatment efficacy by being disruptive within the group. The probation service in which this research was conducted excludes men who meet criteria (Hare, 1991) for psychopathy from their sex-offender treatment programmes. This obviously removes many men who would potentially achieve high scores on the Static99, and reduces the overall level of risk of the higher risk group.

Summary 2

This study found no statistically significant evidence for different effects of treatment in men at higher and lower risk of recidivism. This may be attributable to the size of the sample, restriction of range of risk of recidivism (psychopaths excluded), and the use of a non-intention-to-treat analysis (outcome did not include treatment dropouts who are at higher risk of recidivism). Alternatively, it may be that a different variable (e.g., locus of control score) is more associated with treatment

outcome based on self-report measures. Differential treatment response in different offenders (e.g., appetitive/non-appetitive) may have obscured differences in treatment response between the lower and higher risk groups. Finally, level of dissimulation and therapeutic reactance may have impacted upon the outcome data and resulted in the lack of significant difference in outcome between the lower and higher risk groups.

Study 3

Cross-sectional survey of coping and defence styles

The hypotheses relating to the final study were as follows:

12. Sex-offenders will score significantly higher than non-sex offenders and controls on measures of dissimulation.

13. Mature defence scores in the total sample will correlate significantly and positively with rational and detached coping style scores, and significantly and negatively with emotional and avoidant coping style scores.

14. Neurotic and immature defence scores in the total sample will correlate significantly and negatively with rational and detached coping style scores, and significantly and positively with avoidant and emotional coping style scores.

15. A discriminant function analysis will identify two functions that will discriminate reliably between sex-offenders, non-sex offenders and non-offenders.

The first function will represent adaptive responding to stressors and will include scores on rational coping, detached coping and mature defence styles. The second function will represent non-adaptive responding to stressors and will include scores on emotional coping, avoidant coping, neurotic and immature defence style scores, and dissimulation score (since dissimulation scores represent a lack of insight and/or overconfidence regarding problem solving ability: Paulhus, 1998).

Method 3

Participants 3

Power analysis

Previous research (Marshall *et al.*, 1999) has found significant differences between problem-solving scale scores in relatively small ($n \leq 30$) groups of sex offenders, non-sex offenders and non-offenders. This suggests a large effect size of sex-offender on coping strategy scores. Power calculations based on $\alpha = 0.05$, power = 0.80 and a large effect size of coping strategy use suggested that the number of participants required would be at least 90 (30 per group).

Inclusion criteria

Participants from the Probation Service were selected for inclusion if there was no record that the offender was mentally disordered or had a learning disability (questionnaire packs were not issued to men who did not fulfil these criteria). Questionnaire packs were only issued to non-offenders if they did not have a learning disability and if they self-reported that they had no criminal convictions. Non-offenders comprised an opportunity sample. Ninety-nine men met the criteria for inclusion in the study (33 sex-offenders; 33 non-sex offenders and 33 non-offenders).

Materials 3

Coping Styles Questionnaire

The Coping Styles Questionnaire developed by Roger *et al.* (1993) contains sixty items (16 items for the rational coping factor; 15 items for the detached coping

factor; 16 items for the emotional coping factor and 13 items for the avoidance coping factor). Individual items are rated as being performed ‘always’, ‘often’, ‘sometimes’, or ‘never’. Internal consistency and test-retest reliability data for the CSQ are all within the acceptable limits suggested by Barker, Pistrang and Elliot (1995: Table 42).

Table 42 Internal consistency and test-retest reliability for the CSQ

	Rational coping	Detached coping	Emotional coping	Avoidant coping
Cronbach’s alpha	0.85	0.89	0.74	0.70
Test-retest reliability	0.80	0.79	0.77	0.70

Validity

The Emotional Coping Questionnaire (ECQ: Roger and Najarian, 1989) was selected as the instrument to assess concurrent validity by Roger *et al.* (1993). The ECQ contains four factors (Table 43).

Table 43 Emotional Coping Questionnaire Factors

ECQ factor	Factor measures
Rehearsal	Rumination
Emotional inhibition	Inhibition
Benign control	Impulsivity
Aggression control	Control of aggression

Correlations between the ECQ and CSQ factors are in the predicted direction (Roger *et al.*, 1993: Table 44). For example, rumination factor scores correlate negatively

(and significantly) with rational coping and detached coping, but positively (and significantly) with emotional coping and avoidant coping. All significant correlations are in the predicted direction.

Table 44 Correlations between the ECQ and CSQ

	Rational coping	Detached coping	Emotional coping	Avoidant coping
Rumination	-0.36 **	-0.48 **	0.51 **	0.24 *
Emotional inhibition	-0.14	0.17	0.12	0.39
Aggression control	0.07	0.02	0.01	0.05
Benign control	0.21 *	0.26 *	-0.30 *	-0.14

* $p < 0.05$; ** $p < 0.01$

Defence Style Questionnaire

The DSQ40 contains forty items which are rated on a Likert scale from one (strongly disagree) to nine (strongly agree). The DSQ40 was derived from an earlier (and longer) version of the defence style questionnaire (Andrews and Pollack, 1989). Factor analysis of this previous version yielded three factors (labelled mature, neurotic and immature).

The DSQ40 was created because the seventy-two item version contained unequal numbers of items for each defence, and because some items were related more to symptoms than to defences (Andrews *et al.*, 1993). The DSQ40 contains an equal number of items per defence ($n=2$) and was created based on data from seven hundred and twelve persons.

The internal consistency of the DSQ factors is presented in Table 45 below. The reliability coefficient for neurotic defence style scores is a little low, while the reliability coefficient for the immature defence style scores is good (criteria based on those published in Barker *et al.*, 1995). Test-retest correlations are also presented in Table 45. All test-re-test correlations are above the acceptable range based on the suggested limits of Barker *et al.* (1995). The test-retest correlation for immature defence style scores is very high.

Table 45 Internal consistency and test-retest for the DSQ factors

	Mature factor	Neurotic factor	Immature factor
Coefficient alpha	0.68	0.58	0.80
Test re-test reliability	0.75	0.78	0.85

DSQ40 items were generated from the glossary of defence styles in the DSM-III-R (with the exception of anticipation which was added to the list of mature defences by Andrews *et al.*, 1993). The coefficient of agreement between DSQ items and defence was derived from ratings by independent experts ($n=5$) was acceptable ($K=0.75$).

Discriminant analyses have found that the DSQ40 can significantly discriminate between patient groups. Andrews *et al.* (1993) report significant discriminations between:

- Normal controls and anxiety patients
- Normal controls and child abusing parents
- Anxiety patients and child abusing parents

In summary, the DSQ40 has demonstrated itself to be a psychometrically acceptable instrument. This is reflected in its use in a number of published studies in peer reviewed journals.

Paulhus Deception Scales (PDS)

The PDS is forty-item self-administered questionnaire. The PDS consists of two scales: Impression Management and Self-Deceptive Enhancement.

Internal consistency of the IM and SDE scales is acceptable (SDE 0.75; IM 0.84). Research assessing the validity of the IM and SDE was considered in the introduction. No test re-test reliability statistics are reported in the manual.

Procedure 3

Data from offenders were obtained from men attending their probation officer. The researcher approached the men at random and asked if they would be prepared to take part in anonymous research concerning coping styles. It was stressed that the research had received ethical approval, that it had no effect on their probation in any way and that participation was totally voluntary. If men agreed to take part they were given an envelope containing the questionnaires. Completed questionnaires were either posted to University College London, or collected by the researcher after the offender completed the questionnaire (men often completed the questionnaire in a private room before or after their interview with the probation officer).

Data from non-offenders were obtained using convenience sampling via personal contacts. Questionnaires were returned to University College London or directly to the researcher. Again, participation was completely anonymous and only data on age and ethnic group were obtained.

Results 3

Coping and defence styles

Demographics

The coping styles questionnaire, defence styles questionnaire and BIDR7 scales were completed by ninety-nine men (33 non-offenders, 33 sex-offenders, 33 non-sex offenders). Mean age did not differ significantly between the groups ($F_{2,96}=2.4$, $p>0.05$: Table 46).

Table 46 Mean age of non-offenders, sex-offenders and non-sex offenders

	Non-offenders	Sex-offenders	Non-sex offenders
Mean age	34.7	39.1	35.8
(s.d.)	(11.0)	(9.5)	(11.4)

The proportion of persons from ethnic minority groups did not differ significantly between the groups (non-offenders 11/33 (33%); sex-offenders 9/33 (27%); non sex-offenders 15/33 (46%): $\chi^2 = 2.5$, 2 *d.f.*, $p > 0.05$).

Extreme data points

Data from all scales were screened for outlying data points using Tukey's criteria ($X > (\text{upper quartile}) + \text{step}$, or $X < (\text{lower quartile}) - \text{step}$; where $\text{step} = 1.5 * [(\text{upper quartile}) - (\text{lower quartile})]$), see Tukey, 1977). No outlying data points were found.

Transformations

Prior to analysis the data distributions were analysed to ascertain if they were suitable for parametric analysis. Distributions for the variables: emotional coping; mature defence styles; impression management score; self-deceptive enhancement score; and combined impression management and self-deceptive enhancement score were suitable for parametric analysis after the transformations recommended in Tabachnik and Fidell (1996: Table 47).

Table 47 Distributions and transforms used for variables.

Variable	Transform
Emotional coping	Distribution leptokurtic and positively skewed. Transformation required: logarithm
Mature defence style	Distribution positively skewed. Transform required: square root.
Impression management score	Distribution leptokurtic and positively skewed. Transformation required: logarithm
Self-deceptive enhancement score	Distribution positively skewed. Transform required: square root.
Combined impression management and self-deceptive enhancement score	Distribution positively skewed. Transform required: square root.

Analysis of data distributions found that distributions were approximately normal for the following scale scores: rational coping; detached coping; neurotic defence styles; and immature defence styles; and that no transformations were required for parametric analysis.

Self-deceptive enhancement and impression management

Prior to performing the discriminant function analysis, significance tests were performed on the variables, impression management, self-deceptive enhancement and combined impression management and self-deceptive enhancement score to identify which variable showed the largest group difference. Significance testing involved six planned comparisons (sex-offenders versus controls, sex-offenders versus non-sex offenders for three analyses) therefore alpha was set at 0.008).

Self-deceptive enhancement

Planned comparisons found no evidence for significant differences in scores on SDE between sex-offenders and non-offenders ($p>0.05$) or sex-offenders and non-sex offenders ($p>0.05$). The mean SDE score was highest in the non-sex offender group (Table 48).

Table 48 Mean SDE score by group

	Non-offenders	Sex-offenders	Non-sex offenders
Mean SDE score	1.68	2.35	2.43
(s.d.)	(2.6)	(2.9)	(1.9)

Impression management

Planned comparisons found no evidence for significant differences between sex-offenders and non-offenders ($p>0.05$) or between sex-offenders and non-sex offenders ($p=0.011$). The mean IM scale score was highest in the sex-offender group (Table 49).

Table 49 Mean impression management score by group

	Non-offenders	Sex-offenders	Non-sex offenders
Mean IM score	4.40	5.41	4.14
(s.d.)	(3.1)	(4.2)	(2.4)

The BIDR7 manual suggests the cut-off score of 8 on the IM scale as indicative of possibly invalid (socially desirable) responses. A dummy variable was created to test the proportion of persons scoring at or above this criterion in each of the groups. The proportion of persons with possibly (highly socially desirable) invalid responses was significantly different between the groups ($\chi^2=9.1$, 2 *df.*, $p<0.02$). The lowest proportion of persons with social desirability scores above the criterion was in the non-sex offender group. Nearly half of the sex-offenders had scores at or above the criterion for possible socially desirable responding (Table 50).

Table 50 Proportion of men scoring at or above the criterion for possible socially desirable responding by group

	Non-offenders	Sex-offenders	Non-sex offenders
	n (%)	n (%)	n (%)
IM score at or above criterion	9 (27)	15 (45)	4 (12)
IM score below criterion	24 (73)	18 (55)	29 (88)

It is clear that the significant χ^2 obtained in the analysis above could be attributable to a low proportion of men at or above the cut-off for socially desirable responding in the non-sex offender group. Therefore, a logistic regression analysis (using both forward and backward Wald elimination) was performed on the variables: age; non-offender; sex-offender and non-sex offender to find independent predictors of socially desirable responding. Only the variable sex-offender was a significant predictor of scores at or above the cut off for socially desirable responding (Wald=6.681, 1 *d.f.*, $p=0.009$, odds ratio 3.5, 95% confidence intervals 1.4 – 8.5).

Combined impression management and self-deceptive enhancement score (IMSDE)

Planned comparisons found no evidence that IMSDE scores differed significantly between sex-offenders and non-offenders ($p>0.05$), or between sex-offenders and non-sex offenders ($p<0.027$: alpha set at $p < 0.008$ to control for type 1 error). The mean IMSDE scale score was greatest in the sex-offender group (see Table 51).

Table 51 Mean IMSDE score by group

	Non-offenders	Sex-offenders	Non-sex offenders
Mean IMSDE score	7.9	10.2	7.5
(s.d.)	(4.6)	(6.2)	(3.7)

Prior to conducting the discriminant analysis, it was necessary to decide whether to use IM and SDE scores or the combined IMSDE score as variables in the discriminant analysis. Previous research (Paulhus and Reid, 1991) has found that SDE scores correlate with the reversal scale of the defence mechanisms inventory (Gleser and Ihilevich, 1969): reversal is the psychological mechanism argued to subserve reaction formation. Further, Paulhus *et al.* also found that SDE scores correlated positively with the escape-avoidance scale of Lazarus and Folkman's (1984) Ways of Coping scale. Paulhus *et al.* did not find significant correlations between either of these scales and IM scores. However, this research was conducted on a non-offender sample and the research of Kroner and Reddon. (1992) has found that scales perform differently with offender samples. Therefore, the correlation between IM and SDE and IMSDE was investigated using bivariate correlations. Both IM and SDE scores were significantly correlated with rational and detached coping scores (Table 52).

Table 52 Correlations between CSQ and DSQ scale scores and IMSDE scores

Scale	IM	SDE	IMSDE
Rational coping	0.337 *	0.415 *	0.439 *
Detached coping	0.303	0.349 *	0.384 *
Emotional coping	-0.261	-0.074	-0.215
Avoidant coping	-0.042	0.066	0.005
Mature defences	-0.030	-0.084	0.022
Neurotic defences	-0.032	-0.128	-0.089
Immature defences	-0.286	-0.217	-0.305 *

* significant ($p < 0.05$) after controlling for multiple testing

The IMSDE scores were selected as an independent variable in the discriminant function analysis because the pattern of correlations was similar for IM and SDE scores. Additionally, the IMSDE correlations were stronger than the correlations for either the IM or SDE scales. The IM and SDE scales are also significantly correlated ($r = 0.405$, $p < 0.0001$), suggesting a degree of item redundancy.

The IMSDE score was chosen for inclusion in the discriminant function analysis since scores on this variable created the largest difference between the sex-offenders and the other groups. Further, the IMSDE score contains both elements of desirable responding, unlike the other measures that, by definition, measure IM or SDE only.

Relationship between the CSQ and DSQ scales

Mature defences were positively and significantly correlated with rational and detached coping, and negatively and significantly correlated with emotional coping (Table 53). However, mature defences did not correlate with avoidant coping.

Neurotic defence scores did not correlate negatively with rational and detached coping. Correlations between the emotional coping and avoidant coping scale were both positively correlated with neurotic defence scores, but only avoidant scores were significantly correlated. Rational and detached coping scale scores did not correlate negatively with immature defence scores. However, immature defence scores were positively and significantly correlated with emotional and avoidant coping scale scores as predicted.

Table 53 Correlations between CSQ and DSQ scales

	Rational coping	Detached coping	Emotional coping	Avoidant coping
Mature defences	0.389 *	0.332 *	-0.334 *	-0.037
Neurotic defences	0.001	-0.017	0.236	0.397 *
Immature defences	-0.180	0.015	0.483 *	0.481 *

* significant ($p < 0.05$) after alpha adjusted for multiple comparisons.

Although DSQ and CSQ scale scores are correlated it is unlikely that they are measuring identical constructs since the largest amount of shared variance between the two scales is only twenty-two per cent (immature defence and emotional coping scale score correlation squared). Further, the SPSS discriminant function identifies multicollinearity problems and this will thus be automatically investigated when the discriminant analysis is performed.

Correlations between the IMSDE scale and CSQ/DSQ scale scores were computed separately for sex-offenders, non-sex offenders and non-offenders. The sex offender

group had the largest correlations between IMSDE and the following scales: detached coping; neurotic defences; and immature defences.

Table 54 Correlations between IMSDE and CSQ/DSQ scale scores for sex-offenders, non-sex offenders and non-offenders

CSQ/DSQ scale	Sex-offenders	Non-sex offenders	Non-offenders
Rational coping	0.496*	0.356	0.555
Detached coping	0.481	0.224	0.435
Emotional coping	-0.395	-0.048	-0.455
Avoidant coping	-0.080	0.177	-0.121
Mature defences	0.068	0.248	0.007
Neurotic defences	-0.260	0.210	-0.08
Immature defences	-0.475	-0.137	-0.269

* significant ($p < 0.05$) after alpha adjusted for multiple comparisons.

Discriminant function analysis

Group means for CSQ and DSQ sub-scales are presented immediately below (Table 55). Sex-offender rational coping scores are lower than those of non-offenders and non-sex offenders. Further, sex-offender mature defence style scores are lower than those of non offenders and non-sex offenders.

Table 55 Mean CSQ and DSQ sub-scale scores for each group (s.d.)

CSQ/DSQ scale	Non-offenders	Sex-offenders	Non-sex offenders
Rational coping	28.7 (6.8)	25.5 (8.4)	26.0 (8.7)
Detached coping	19.2 (4.8)	17.4 (8.3)	20.1 (5.2)
Emotional coping	13.9 (5.6)	16.6 (8.5)	17.9 (6.4)
Avoidant coping	13.8 (4.8)	16.4 (7.4)	19.3 (5.7)
Mature defences	5.8 (0.9)	5.1 (1.5)	5.8 (0.9)
Neurotic defences	4.3 (1.0)	4.9 (1.3)	5.2 (1.0)
Immature defences	4.0 (1.0)	3.7 (1.2)	5.0 (0.9)

Univariate analyses of variance for each variable are in the table immediately below.

Group mean differences on scores of avoidant coping, immature defences and neurotic defences are highly significantly different (Table 56).

Table 56 Summary of univariate ANOVAs

Scale scores for CSQ & DSQ	F _{2,96} ratio	p
Rational coping	1.3	n.s.
Detached coping	1.5	n.s.
Emotional coping	2.9	0.060
Avoidant coping	6.7	0.002
Mature defences	3.9	0.020
Neurotic defences	5.4	0.006
Immature defences	12.9	<0.001

The discriminant function analysis was conducted on the variables in table 56 above and also included IMSDE score⁴. The overall Wilks' Lambda was significant ($\Lambda=0.551$, $\chi^2=55.1$, 16 *df.*, $p<0.001$), indicating that overall the predictors differentiated between the three groups. Further, the residual Wilks' Lambda was significant ($\Lambda=0.804$, $\chi^2=20.2$, 7 *df.*, $p<0.005$). This means that the predictors differentiated between the groups even after the effects of the first discriminant function were partialled out. Since both tests were significant, both discriminant functions will be interpreted. The largest absolute correlation was between avoidant coping style scores and discriminant function 2 (Table 57).

Table 57 Correlations between the predictors and the discriminant functions.

Predictor variable	Function 1	Function 2
Mature defence style score	0.420 *	-0.041
IMSDE score	-0.366 *	-0.020
Detached coping style score	0.257 *	0.094
Avoidant coping style score	0.066	0.749 *
Immature defence style score	0.579	0.686 *
Neurotic defence style score	-0.085	0.668 *
Emotional coping style score	-0.040	0.491 *
Rational coping style score	0.131	-0.282 *

* Largest absolute correlation between variable and any discriminant function.

⁴ This analysis found no strong evidence for multicollinearity, suggesting that there is little redundancy between the scales.

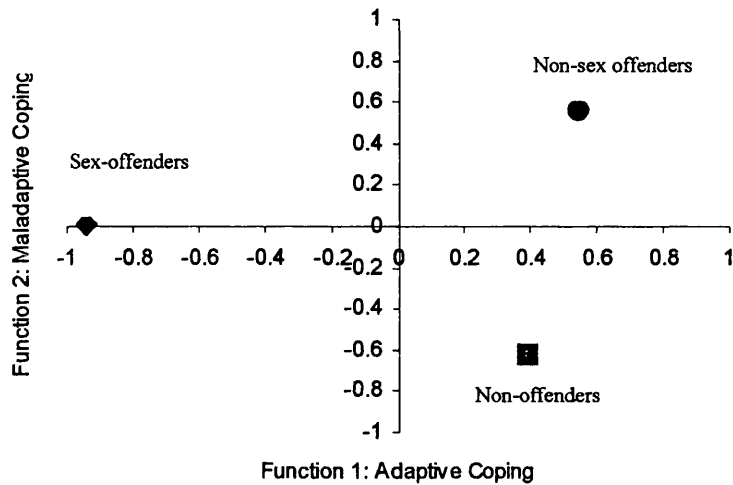
In accordance with the recommendations in Tabachnick and Fidell (1996), only those predictors with correlations above 0.3 will be considered when interpreting the discriminant functions. This is because the correlations reported in table 57 are full and not semi-partial or partial correlations. Correlations between predictors and discriminant functions could be significantly lower if correlations with other predictors were partialled out. This is important in this study in particular since it has been shown (see table 53 above) that correlations exist between the predictors.

Largest absolute correlations show that discriminant function 1 is positively correlated with scores on mature defence styles. Conversely, discriminant function 1 is negatively correlated with MCSDS scores. Thus, discriminant function 1 seems to represent a form of adaptive coping and will be labelled as such.

Immature defence scores deserve mention at this point since they are highly correlated with both discriminant functions. Although the correlation between discriminant function 1 and immature defences is high, it is greater in function two and, from the point of view of theory, seems logically to be more associated with this discriminant function since this discriminant function seems to represent a more dysfunctional type of coping. Largest absolute correlations show that discriminant function 2 is positively correlated with scores on measures of maladaptive coping (positive correlations with avoidant and emotional coping) and with measures of dysfunctional defences (positive correlations with immature and neurotic defence styles). Thus, discriminant function 2 seems to represent a form of maladaptive coping and will be labelled as such. Overall, the discriminant functions seem to fit well with the theory behind the CSQ and the DSQ and they are in keeping with the

hypotheses made in the introduction regarding the relationship between scales on the DSQ and CSQ. Figure 4 below shows that the first function (adaptive coping) discriminates very well between the sex-offenders and the other two groups (non-offenders and non-sex offenders).

Figure 4 Mean centroids on the discriminant functions



Sex-offenders had the lowest centroid on the adaptive level coping discriminant function (Table 58). However, sex-offenders did not have the highest centroid on the maladaptive coping discriminant function.

Table 58 Group centroids on adaptive and maladaptive coping discriminant functions

Group	Adaptive coping	Maladaptive coping
Non offenders	0.392	-0.625
Sex-offenders	-0.939	0.070
Non-sex offenders	0.547	0.560

Overall, the group means on the discriminant functions seem to show that non-offenders may have the most adaptive coping skills since their mean is positive on the adaptive coping discriminant function, but negative on the maladaptive discriminant function. Non-sex offenders display a mixed pattern of coping with positive means on both discriminant functions. The very low mean for the sex-offenders on the maladaptive coping discriminant function perhaps needs to be viewed in light of this groups scores on social desirability.

Group classification by the discriminant analysis

The discriminant functions were able to correctly classify fifty-eight per cent of the sample (see Table 59). To take account of chance agreement, the Kappa coefficient was computed. The obtained Kappa coefficient (0.38) indicated prediction moderately highly above chance and was significant ($p < 0.001$).

Table 59 Accuracy of participant classification

	Predicted			Total
	Non-offenders	Sex-offenders	Non-sex offenders	
Non offenders	21 (64%)	6	5	33
Sex-offenders	7	17 (52%)	9	33
Non-sex offenders	8	5	20 (61%)	33
Total	33	33	33	99

Discussion 3

This study found higher levels of dissimulation in the sex-offender group than in the non-offender and non-sex offender groups. The groups differed significantly on avoidant coping and neurotic and immature defence scale scores. A discriminant function analysis found that sex-offenders had a negative mean centroid on a discriminant function labelled 'adaptive coping', and that this function discriminated well between these offenders and non-sex offender and non-offenders since these groups had positive mean centroids on this function. The mean centroid for sex-offenders on the second discriminant function (labelled maladaptive coping) was intermediate between the non-sex offenders whose mean centroid was positive on this function and the non-offenders whose mean centroid was negative on this function. These findings are considered in turn below.

Dissimulation

Consistent with the hypothesis (12) and the review of dissimulation in sex-offenders (Sewell and Salekin, 1997), a logistic regression analysis found that the variable sex-offender was the only significant predictor of scoring at (or above) the criterion for socially desirable responding. Nearly half (45%) of the sex-offenders in this sample met the criteria for potentially socially desirable responding. Further, and also consistent with previous research (Gudjonsson, 1990) there was a trend for higher SDE scale scores in the sex-offender group. There was also a trend for higher scores in the sex-offender group on the combined impression management and self-deceptive enhancement (IMSDE) scale.

Unlike previous research (Paulhus *et al.*, 1991) this study found that both IM and SDE scores correlated with scores on coping scales suggesting that the factor structure of the CSQ and DSQ may be different when used with a combined forensic/non-forensic sample.

Correlations between the CSQ and the DSQ

Correlations between the CSQ and the DSQ were broadly consistent with hypotheses (13, 14). Mature defences correlated positively with rational and detached coping and immature defences correlated positively with emotional and avoidant coping. Neurotic defences correlated with avoidant coping.

Some correlation between the two measures is not surprising since they contain very similar items. For example, the following item in the detached factor of the CSQ: 'Try to keep a sense of humour – laugh at myself or the situation' is very similar to the following item from the mature defence factor of the DSQ: 'I am able to laugh at myself pretty easily'. However, the CSQ contains no items remotely like the following items from the DSQ: 'As far as I am concerned people are either good or bad' (splitting defence) and 'I get a headache when I have to do something I don't like' (somatisation defence).

The size of significant correlations (and the absence of evidence for multicollinearity in the discriminant function analysis) suggests that, consistent with theoretical predictions, the CSQ and DSQ measure different constructs. This assertion could be

supported by factor analysing items from the CSQ and DSQ scores. According to the recommendations in Tabachnik and Fidell (1996) this would require a large ($n > 300$) sample. Given that there is evidence that the factor structure of psychometric instruments can vary according to whether they are based on a forensic or a non-forensic sample (see Kroner and Reddon, 1992) it would be useful to factor analyse data from large samples ($n > 300$) of offenders and non-offenders to ascertain if factor analyses from both samples led to similar results.

That the CSQ and DSQ seem to measure different constructs is an important finding since it suggests that future research into coping could include both of these measures, and that this may lead to a better understanding of the relationship between coping and stress. Indeed, Kwon and Lemon (2000) argue for such an approach in their research on the aetiology of depression:

‘ ... the case can be made for an integration of cognitive and psychodynamic perspectives ... Both concepts are related to how individuals protect themselves from external threat ... Thus, the two concepts do not represent duplicate formulations of the same process; rather, one would expect both processes to impact on individuals’ overall coping ability’.

Further, integrationism (the integration of cognitive and psychodynamic concepts) is the approach reported to be most used by psychiatrists, psychologists, social workers and counsellors (Prochaska and Norcross, 1999).

Discriminant function analysis

The discriminant function analysis identified two significant functions that discriminated between the groups. The discriminant functions were largely as predicted. Contrary to the hypothesis (14), IMSDE scores loaded onto the adaptive coping function. However, these scores loaded negatively onto this function and as such this finding is not entirely contrary to the hypothesis. Scores on the detached coping scale were negatively loaded on the maladaptive coping discriminant function. It was hypothesised that these scores would load onto the adaptive coping discriminant function, but the negative loading on the maladaptive discriminant function is not entirely inconsistent with the hypothesis. Immature defence scores were hypothesised to load onto the maladaptive coping function and this was supported by the fact although immature defence scores loaded onto both functions quite highly the highest loading was on the maladaptive coping discriminant function. These discriminant functions are now considered in turn.

Adaptive coping discriminant function

The first function, labelled adaptive coping, comprised a positive mean centroid on mature defences and a negative mean centroid on the combined impression management and self-deceptive enhancement scale. The sex-offender group mean centroid was negatively related with the adaptive coping discriminant function indicating low adaptive functioning in the group. The positive scores on this function

for the other groups suggest that this function discriminates between the groups very well, and that the non-sex offenders and non-offenders have better coping skills.

Sex-offenders had lower scores on mature defences than did the non-offenders and non-sex offenders. This is important finding since three of the four defences (sublimation, suppression, anticipation) in the mature defence factor potentially are very relevant to sexual offending:

i) Sublimation is potentially important for sex-offenders since it involves dealing with

‘ ... emotional conflict or internal or external stressors by channelling potentially maladaptive feelings or impulses into socially acceptable behaviour (e.g., contact sports to channel angry impulses)’ (APA: 1995).

Thus it is possible that sexual offenders may find it difficult to manage sexually inappropriate thoughts or feelings by engaging in non-sexually abusive behaviour.

ii) Anticipation is the defence used to cope with:

‘ ... emotional conflict or internal or external stressors by experiencing emotional reactions in advance of, or anticipating the consequences of, possible future events and considering realistic, alternative responses or solutions’. (APA, 1995)

The data suggest the possibility that sex-offenders may be more likely to act without regard to the consequences of their actions. This may include handling stress in a more dysfunctional way by not anticipating the effect of certain actions or certain emotions in advance. This is important since research has found that mental simulation of the emotional impact of a stressful event aids progress in resolving such an event (Taylor, Pham, Rivkin and Armor, 1998).

Failure to anticipate difficulties may result in stress that, in turn, can lead to a change in a person's goals. Baumeister (1991) has argued that engaging in forbidden behaviours (e.g. sexual offending) may be preceded and accompanied by a psychological state which favours the satisfaction of immediate goals (e.g., sexual gratification), rather than the maintenance of more abstract (and perhaps harder to define) goals such as being a 'good parent'. Baumeister (1991) refers to this change to more immediate, solipsistic, goals as a 'cognitively deconstructed' state. Baumeister further argues that this state is associated with a reduction in feelings of guilt or shame that might normally inhibit unacceptable behaviour. Importantly, the satisfaction of immediate goals is, in Baumeister's view, achieved by neglecting the consequences for others, and perhaps also for the self. Baumeister's theory has been incorporated into a recent model of antecedents of sexual offending in which the onset of negative mood leads to feelings of a need to engage in sexual behaviour, and the cognitively deconstructed state (Marshall *et al.*, 1999).

iii) Suppression is the defence used to cope with:

‘ ... emotional conflict or internal or external stressors by intentionally avoiding thinking about disturbing problems, wishes, feelings, or experiences’ (APA, 1995).

A diminished use of this defence by sex offenders may result in these offenders being unable to remove sexually abusive thoughts from their minds. This may be important in sexual offending since it has been found that merely thinking about performing a task can make the event more likely (Taylor and Pham, 1996).

It is important to note that less frequent (or ‘potent’) use of sublimation, suppression and anticipation may be common to both appetitive and non-appetitive offenders. Both of these types of offenders may have sexual urges which they feel need to be gratified (and fail to suppress and sublimate), and both may (immediately prior to, and when offending) not anticipate the consequences of their actions for others or for themselves. Of course, for appetitive offenders the consequences for others may be less serious (in their view) than the consequences for themselves. This is the case because these offenders do not experience the negative mood associated with shame and guilt that non-appetitive offenders report experiencing after committing a sexual assault (Hudson *et al.*, 1999). However, non-appetitive offenders are likely to experience the same concern about conviction as non-appetitive offenders.

Less frequent use of humour by sex-offenders may result in frustration and anger. This is important since anger is a predictor of sex-offence recidivism (Hanson and Harris, *submitted*, a, b). Frequent experience of anger and the requirement for anger control may also result in decreased self-regulation ability (Muraven and Baumeister, 2000: See speculative model of offending later in this thesis).

The finding that the sex-offenders had a lower group mean score on mature defence scores may be particularly relevant to difficulties experienced by sex-offenders since there was evidence of less dissimulation on mature defence scores by the sex-offender group (see Table 54 above).

The finding of a higher mean centroid for the non-sex offender group suggests that this group have more adaptive coping skill. However, there is a reason to believe that this is not the case. Table 55 shows that the non-sex offenders mean score on immature defences was higher than that of the other groups, and immature defence score loads quite highly on the first discriminant function (although the largest absolute correlation was between immature defences and the second discriminant function labelled maladaptive coping).

It is necessary at this point to consider why the immature defence score was highly correlated with both the adaptive and the maladaptive coping factor. This could, of course, be due to the fact that this study contains offenders and non-offenders and is different to the sample on which the DSQ was initially factor analysed. Essentially, the DSQ may have a different factor structure when used with offenders as Kroner and Reddon (1992) found in their research using the STAXI with incarcerated offenders. There exists a further possibility, however. The DSM-IV contains a greater number of suggested defences than does the DSQ (and does not include one defence used in the DSQ). Further, the DSM-IV places individual defences into clusters within a hierarchy. It is clear from this hierarchy that the DSM-IV would suggest that the defences of dissociation and displacement are less dysfunctional

than is suggested by the DSQ (Table 60). This is the case because these defences are considered to be in the second from top cluster in the DSM-IV defence hierarchy, but are items in the immature defence factor in the DSQ.

Table 60 DSM-IV defence levels and DSQ factors

DSM-IV Defence level & defences	DSQ		
	Mature factor	Neurotic factor	Immature Factor
<i>High adaptive</i> Anticipation Humour Suppression	Anticipation Humour Suppression		
<i>Mental inhibitions</i> Displacement Dissociation Undoing		Undoing	Displacement Dissociation
<i>Minor image-distorting</i> Devaluation Idealisation		Idealisation	Devaluation
<i>Disavowal</i> Denial Projection Rationalisation			Denial Projection Rationalisation
<i>Major image-distorting</i> Autistic fantasy Splitting			Autistic fantasy Splitting
<i>Action</i> Passive aggression Acting out			Passive aggression Acting out

*This table contains only those defences common to the DSM-IV and the DSQ.

While a statistical method such as factor analysis is likely to be much more reliable a classificatory procedure than is clinical judgement it is also entirely possible that if the DSQ contained the extra defences listed in the DSM-IV (affiliation, self-assertion, self-observation, intellectualisation, omnipotence, apathetic withdrawal, help-rejecting complaining) and was factor analysed using a more diverse sample

(offenders included) it may have a very different factor structure. Thus, the information in Table 60 above, and the data from this study, suggests the possibility that the immature defence factor may provide a measure of defences which vary in terms of how dysfunctional they may be, and which may also vary dependent upon the sample used. Overall, however, the immature defence factor seems to capture maladaptive coping better than adaptive coping because it correlates more highly with the second discriminant function (maladaptive coping).

It is possible that higher scores on a measure of socially desirable responding may be associated with less effective coping. High IMSDE scores are likely to be associated with less adaptive coping since SDE scores are associated with greater scores on a measure of illusion of control (Paulhus, Reid and DeLongis, 1991). Further, persons scoring high on SDE consider themselves to be less likely to be involved in a car accident than do persons scoring low on SDE (Paulhus, Reid and DeLongis, 1991). Persons scoring high on IM may be less likely to ask for help when under stress in order to maintain an impression of being able to cope than persons who score low on IM.

In summary, the adaptive coping discriminant function discriminated very well between the sex-offenders and the other two groups. The data are suggestive of lower adaptive coping with stressors in the sex-offender group due to the low use of mature defences and higher scores on a measure of deception, which is associated with less functional ways of coping.

Maladaptive coping discriminant function

The sex-offender mean centroid was intermediate between the scores of the non-offenders (negative mean centroid) and the non-offenders (positive mean centroid). As such, this discriminant function discriminates best between non-offenders and non-sex offenders. This discriminant function was mainly comprised of scores indicating poor coping (i.e. immature defences, neurotic defences, emotional coping, and avoidant coping). There was evidence that dissimulation may have impacted on sex-offenders' scores on these scales (see Table 54 above). The correlation between IMSDE scores and immature defences was greater for sex-offenders than for the other groups. Further, the sex-offender group IMSDE / neurotic defence score correlation was negative and the largest of all these correlations. Finally, the sex-offender group IMSDE / emotional coping score correlation was the second largest and was negative. Thus, there is evidence that the sex-offender group showed evidence of dissimulation on measures of poor coping ability.

Unlike Marshall *et al.* (*in press*) this study did not find that sex-offender's scores on a measure of emotional coping were significantly greater than those of non-sex offenders and non-offenders. This may be due to differences in item content between the CSQ and the questionnaire used in Marshall *et al.*'s study. Further, Marshall *et al.* did not find significant differences between the groups on a measure of socially desirable responding. This study found that significantly more sex-offenders reached the criterion for potentially socially desirable responding. Finally, the sex-offenders in the Marshall *et al.* study were in prison and these men may have been more disordered than the sample of men in this research.

CSQ and DSQ responses were affected by deception in all groups. Given this, it may have been more appropriate to use the coping assessment method developed by Zamble and Porporino (1988). These authors presented offenders with five problem scenarios and asked the offenders to generate solutions for them. These solutions are rated blind by independent raters for their likely efficacy. This method was used in a recent study which found that sixty-six per cent of offenders would have responded to at least one problem in a way likely to have exacerbated the situation (Zamble and Quinsey, 1997). While it is clear that respondents could still dissimulate on such an instrument, it is perhaps less likely (and more difficult) than responding to items on a questionnaire since the latter does not require generating a response. This hypothesis could be tested in future research.

This research does not explain why sex-offenders have a different profile of scores on coping measures since it was not designed to do this. However, research has found that emotional coping scores correlate significantly ($r=0.28$; Marshall *et al.*, *in press*) with scores on anxious/ambivalent maternal attachment as assessed by the Childhood Attachment Questionnaire (Hazan and Shaver, 1987). Further, task focused coping correlates significantly and negatively with anxious/ambivalent ($r=-0.28$) and avoidant ($r=-0.23$) attachment scores. Research on a non-forensic sample has found that insecure attachment with fathers is associated with coercive sexual behaviour (Smallbone and Dadds, *in press*). Research has also found that abusive experiences in childhood significantly reduce mature defence scores and significantly increase immature defence scores (Romans *et al.*, 1999).

Summary 3

In summary, this study has found evidence for less adaptive coping in sex offenders as measured by a questionnaire designed to assess the use of unconscious defences and a questionnaire designed to measure both self and other-deception. This finding is in agreement with the small literature on coping in sex offenders (e.g. Marshall *et al.*, 1999). Research has found that task-focused coping is negatively correlated with avoidant and anxious/ambivalent attachment styles but these correlations were not specific to sex offenders (Marshall *et al.*, 1999). Andrews and Bonta (1996) have suggested that it is important to identify the criminogenic needs of offenders. Poor coping skills may be closely associated to criminal activity since there is evidence that many offenders offend rather impulsively, and in the context of a negative mood state (Zamble and Quinsey, 1997; Hanson and Harris, *submitted*, a, b). Findings from Zamble and Quisey (1997) and Hanson and Harris (*submitted*, a, b) and this study can readily be interpreted in the context of current theory regarding the diminution of self-regulatory capacity after exposure to stressors. Laboratory research should compare sex-offenders with controls to identify if sex-offenders have poorer self-regulation abilities than do non-sex offenders and non-offenders.

General discussion

This discussion considers the results of the three studies conducted within this thesis. I consider the findings of the first two studies first, and then consider how a finding from study 1 and a finding from study 3 may be important with regard to acute dynamic factors in recidivism. I identify further areas of research during the course of the discussion. Previous discussions in this thesis and the discussion here stress the likely importance of Hudson *et al.*'s (1999) categorisation of offenders into appetitive and non-appetitive types and the impact this categorisation could have on interpreting data in the three studies presented here. Unfortunately, Hudson *et al.*'s paper was not published at the time this research was planned and data collection took place.

Study 1 found that scores on measures of level 2 theory variables (e.g., psychosexual variables, cognitive distortions) did not increase (or decrease in the case of self-esteem) as level of risk increased as assessed using the Static99. Three possible reasons were identified regarding this finding. First, responses may have been affected by dissimulation by the sex-offenders. Second, the proportion of appetitive and non-appetitive offenders may have affected the results since there is evidence that appetitive offenders offend in the context of positive affect and experience positive affect after offending (Hudson *et al.*, 1999). In contrast, non-appetitive offenders offend in the context of a negative emotional state, and experience negative emotions after offending (Hudson *et al.*, 1999). It seems likely that these findings have important implications for research on self-esteem in sex-offenders in particular. For example, it may be that self-esteem issues are more important in the

sexual offending of non-appetitive offenders (although the measurement will only provide an index of the current level of self-esteem which may be much lower or higher than the time at which the offences was committed). Third, evidence suggests that offending occurs mainly in the context of acute psychological states (e.g. negative mood, anger: Zamble and Quinsey, 1997; Hanson and Harris, *submitted*, a, b) which the questionnaires in this study are not designed to measure.

Further research could assess whether appetitive and non-appetitive offenders differ on measures of self-esteem, anger and psychosexual measures. This is not likely to be an easy task, however. It will be necessary to produce some form of questionnaire or structured interview format that is able to distinguish reliably between these types of offenders. This task will be complicated by the fact the vast majority of sex-offenders initially deny much (if not all) of their involvement in the offence (Maletzky, 1991). It may be possible to obtain important information regarding offender type from evidence collected by the police and / or from victim statements, however. Distinguishing reliably between offender types is important since it has important implications for the treatment and management of sex-offenders (Hudson *et al.*, 1999). The distinction between these offender types also calls for different assessment instruments. For example, existing measures would not discriminate between appetitive and non-appetitive offenders very well.

Reliable discrimination between appetitive and non-appetitive offenders may also be necessary to more accurately predict risk of recidivism. At present it is unknown whether appetitive and non-appetitive offenders pose different levels of risk of recidivism. Further, these offender types may pose different levels of risk to different

victim types. For example an appetitive offender who has a very positive attitude toward sex with boys, may pose very little (or no) risk to girls or adults (of either gender), but considerable and persisting risk to young boys. Current, risk assessment schemes, such as the SONAR (Hanson and Harris, submitted, b), appear to concentrate on non-appetitive offenders (given that many of the items measure failure of self-regulation which is not thought to be important in the sexual offending of appetitive offenders Ward and Hudson (*in press*)).

This study found no evidence that men at higher risk of offending present a greater treatment challenge than do men at lower risk of offending where outcome is assessed using self-report measures in a non-intention to treat analysis. The three most likely reasons for this finding are reiterated here. First, questionnaire responses may have been affected by dissimulation by the sex-offenders. Second, the lack of differences in outcome between the groups may be due to the finding (from study 1) that the measures used did not seem to be related to recidivism risk. If the measures used to assess outcome are not strongly related to risk of recidivism (the independent variable in the analysis in study 2) then it is unsurprising that differences in outcome between men at higher and lower levels of risk were not found. Third, it is possible that the outcome measures used in Study 2 are related to outcome, but only for one type of offender (say non-appetitive offenders). If this is the case then it is possible that group differences between higher and lower risk men may not have been found due to different proportions of appetitive and non-appetitive offenders in the two groups. Hudson *et al.* (1999) present a powerful argument for different treatment needs in appetitive and non-appetitive offenders. The logical extension of this argument is that outcome studies should compare differences in outcome between

these groups of men. Given the potential cost of treatment failure, such research should be conducted on a randomised controlled basis and utilise an intention to treat analysis.

Acute changes in psychological state and general and sexual self-regulation are associated with further sexual crime (Hanson and Harris, *submitted*, a, b). These changes include an increase in negative affect and anger, and seem very similar to the experiences reported prior to offending by the non-appetitive offenders in Hudson *et al.*'s (1999) research. Unsurprisingly, recent theoretical work places much emphasis on the role of self-regulation failure in sexual offending (Ward and Hudson, *in press*). Hudson and Ward (*in press*) have recently produced a description of sex-offender types which emphasises the role of the offenders' goals regarding committing a sexual offence and the type of planning used to achieve these goals (Table 61).

Table 61 **Classification of offenders by goal regarding sexual offending plans to achieve the stated goal.**

	Implicit plan	Explicit plan
Avoidance goal	Avoidant-passive offender	Avoidant active offender
Approach goal	Approach passive offender	Approach active offender

According to Ward and Hudson, self-regulation failure precedes offending for all but the approach active offender. Sexual offending in the avoidant-passive offender occurs in the context of the desire to avoid such offending, but a failure of self-control results in sexual offending. Sexual offending in the avoidant-active offender

is held to occur because the strategies used by the offender to reduce the likelihood of re-offending. For example, the offender may abuse drugs or alcohol to suppress thoughts of re-offending, or engage in the use of pornography in the mistaken belief that it may lead to reduced sexual desire (i.e. after masturbation: Hudson and Ward, *in press*). Self-regulation failure is also important for the approach passive offender because offending behaviour in these men occurs impulsively and “out of the blue” (Hudson and Ward, *in press*). Conversely, the approach–explicit offender displays considerable self-regulatory skill in, for example, the often long and elaborated process of grooming a child victim. Thus self–regulation failure is deemed important in three of the four sex-offender sub-types hypothesised by Ward and Hudson (*in press*). The data of Hudson *et al.* (1999) suggest that this may represent some sixty per cent of sex-offenders.

Two findings from this research may support the failure of self-regulation in sex offending theory presented by Hudson and Ward (*in press*) and the work of Hanson and Harris (*submitted*, a, b). First, the trend of the anger control data in Study 1 (see table 29). Second, Study 3 found that sex-offender group had a lower mean centroid on a discriminant function labelled adaptive coping than did no-offenders and non-sex offenders. These findings can be incorporated into a speculative descriptive model of the processes prior to sexual offending (for non-appetitive offenders) consistent with much previous research. This model is presented below (Figure 5).

Figure 5 Speculative model of pre-offence behaviour

1. A coping response is made to a stressor, but that coping response does not alleviate completely the effect of the stressor because of a failure to use mature defences appropriately.

2. After this coping attempt, the offender has diminished resources for regulating his behaviour when faced with a further stressor.

3. A further stressor or the original poorly managed stressor impinges on the offender and a coping attempt is made and the self-regulatory resource is further diminished.

4. At this time, the offender is becoming frustrated and angry with his inability to cope.

5. Controlling this anger further diminishes self-regulatory strength.

6. The offender now has to exercise self-regulation with regard to the stressor(s) and his anger.

7. Self-regulatory control strength is drastically reduced, the offender considers sex as a coping strategy, and enters the cognitively deconstructed state.

8. While in the cognitively deconstructed state the offender commits a sexual crime.

This descriptive model is highly speculative and is intended to apply to non-appetitive offenders, but it includes, and is consistent with, a number of pieces of evidence:

1. Bagley *et al.*, (1994) found that stress was a predictor of fantasies of, or actually engaging in, illegal sexual behaviour in a non-forensic sample. This finding is especially important in that it was not possible for respondents to give stress as an excuse for sexual offending since the questions about stress were asked prior to questions regarding sexual fantasies or behaviour.

2. McKibben *et al.* (1994) found significant associations between masturbation to fantasies about illegal sexual behaviour and negative mood in both rapists and paedophiles.

3. Cortoni (1988) found that sex-offenders use sex as a coping strategy.

4. This study found that sex-offenders had lower scores on the mature defences which include the anticipation defence. Anticipation and mental simulation of a stressor and its effects leads to better resolution of the stressor (Taylor *et al.* 1998) and thus stressors may impact more heavily on sex-offenders than they do on other persons who make more use the mature defence of anticipation. Indeed, there is evidence that the coping styles of offenders may lead to further difficulties because of non-optimal coping in the first instance (Zamble and Quinsey, 1997).

5. Anger and self-regulation failure are acute dynamic (state) predictors of sexual offence recidivism (Hanson and Harris, *submitted*, a, b). According to this (highly speculative) description anger may be important in sexual offending not so much as a motivator for sexual crime (although it may be in certain cases) but as a psychological state that requires self-regulation. Persistent angry feelings require persistent self-regulation and this will compromise self-regulatory control and lead to a disinhibition of behaviour as characterised by the cognitively deconstructed state. This hypothesis needs to be tested, however.

The trend of the anger control data and the finding of poorer adaptive coping in sex-offenders provide only indirect support for the self-regulation deficit theory of sexual offending. The self-regulation deficit hypothesis would be further supported by experimental work that directly tested self-regulation in sex-offenders and controls. For example, Glass *et al.*'s (1969) experiment could be replicated using sex-offender status (sex-offender/non-sex offender) as an independent variable in a factorial design investigating self-control differences in sex-offenders and non-sex offenders.

In summary, recent research suggests that acute changes in psychological state (anger and other negative emotions) are significant predictors of sexual offending. This may be due to self-regulation deficits in sex-offenders (Ward and Hudson, *in press*). Findings from Study 1 and Study 3 provide indirect support for this possibility. In particular, sex-offenders were found to have poorer adaptive coping skills than non-sex offenders and no-offenders and there was evidence that this was likely due to lower scores on the use of the anticipation defence. Further research

should test for differences in self-regulatory control in sex-offenders and controls directly.

Future research

A number of recommendations for future research have been made in the discussion sections the thesis and will not be repeated here. Instead, I concentrate on the evidence from research using self-report questionnaires which has found that sex-offenders use less adaptive means for controlling the effects of stressors than do non-sex offenders and non-offenders. This research includes:

1. Marshall *et al.*'s (1999) finding that sex-offenders scored significantly higher on a measure of maladaptive (emotion-focused) coping than non-sex offenders and non-offenders.
2. The finding from Study 3 in this thesis that sex offenders had a lower group centroid on a discriminant function labelled adaptive coping.
3. The finding that sex-offenders use sex as a coping strategy since they believe it helps them to cope with stress (Cortoni 1998: in Marshall *et al.*, 1999)

These findings are important since it has been found that stress and negative mood are associated with deviant sexual behaviour:

1. Research has found a significant association between negative mood states and deviant sexual fantasy (in rapists and paedophiles) and between negative mood states and masturbation to deviant fantasy (in rapists: McKibben *et al.*, 1994).

2. Bagley *et al.* (1994) found that stress and social stress in the previous six months were both significant predictors of sexual interest and activity with males between the ages of thirteen and fifteen and children of both genders aged under twelve years.
3. Risk of recidivism scores have been found to correlate positively and significantly with external locus of control (Fisher *et al.*, 1999). Further, Fisher *et al.* found that men classified as having an external locus of control had eight times the number of non-sexual ($p < 0.02$) and twice as many ($p < 0.05$) previous sexual convictions. It seems very likely that locus of control score is associated with self-regulation since locus of control scores are associated with impulsive behaviour (Clark, 1994).
4. Hanson and Harris (*submitted*, a, b) include sexual and general self-regulation in their Sex Offender Need Assessment Rating scale and these authors suggest that general and sexual self-regulation should be a topic for further research. Scores on this scale are significant predictors of recidivism (Hanson and Harris, *submitted*, b).

Given the research presented immediately above it is clear that further research into the self-regulatory ability of sex-offenders needs to be conducted. Such research could include:

Laboratory research on self-regulation ability

It would be useful to conduct a factorial equivalent of Glass and Singer's (1969) experiment assessing self-regulatory control ability and frustration tolerance after exposure to a stressor with sex-offenders. In such a between-subjects design groups of sex-offenders, non-sex offenders and non-offenders would be exposed to either a low stress (predictable noise) or a high stress (unpredictable noise condition) and then asked to complete a proof reading task and provide a rating of frustration

tolerance. A significant high stress by sex-offender group interaction indicating significantly lower scores on proof reading and frustration tolerance would be very good evidence for poorer self control in sex-offenders.

Muraven *et al.* (*in press*) conducted an experiment which found that inhibition of behaviour decreased after conducting a task requiring self-control. In this experiment men were allowed to drink alcoholic beverages after completing tasks which did or did not require self-control (using a between-subjects design). Men who had completed the self-control task drank more beer and had higher blood alcohol concentrations than men who had completed a task not requiring self-control. Such an experiment could be conducted with sex-offenders, non-sex offenders and non-offenders in a between subjects factorial design. A significant sex-offender by self-control condition interaction (indicating significantly higher levels of alcohol consumption by sex-offenders in the self-control condition) would again be good evidence for poor self-regulation (i.e. reduced inhibition) in sex-offenders.

Laboratory research could also be conducted to see if sex-offenders are more prone to ironic effects of self-control. Wegner (1989) has conducted numerous experiments which show that (when persons are under stress) actions are performed significantly more often when they are intended to be suppressed than when they are not intended to be suppressed. For example, Wegner and Erber (1992) found that participants in a word-association task experiment were significantly more likely to give a target word response to a target-related word prompt in a suppression condition (do not think about the target word) than in a concentration condition (concentrate on the target word). A factorial design experiment could compare the performance of sex-

offenders, non-sex offenders and non-offenders under suppression or concentration conditions in such a word-association experiment. A significant interaction effect of sex-offender and suppression condition (indicating more ironic responding in sex-offenders) would be good evidence for poorer self-regulation of behaviour in sex-offenders.

Multivariate research on the effects of stressors on sex-offenders

Research could be conducted to see if similar stressors impact differentially on sex-offenders compared with non-sex offenders and non-offenders. For example, participants in such a study could be asked to provide a rating of current stress and then also provide information about life events in (say) the previous two years, early experiences (e.g., experience of sexual, emotional and/or physical abuse as a child), demographics (e.g., age, marital status) and coping and defence styles. A multivariate regression analysis model could also include interactions between scores on coping and defence styles and participant type (sex-offender, non-sex offender and non-offender). A significant effect of sex-offender and/or a significant sex-offender by maladaptive coping style (e.g. avoidant or emotional coping) or sex offender by maladaptive defence style (e.g., neurotic or immature defences) interaction would be powerful evidence for poor self-regulatory ability in sex-offenders.

Development of a self-report instrument designed to assess self-regulation ability

It seems likely that such a measure should include measures of both conscious efforts to counter the experience of stress (i.e. coping styles), and unconscious defences (defence styles) since: 1. Research has found evidence for significantly

scores on a measure of emotion focused coping by sex-offenders than by non-sex offenders or non-offenders (Marshall *et al.*, 1999); 2. Research in this thesis found that sex-offenders had a lower group centroid on a discriminant function labelled adaptive coping which included score on mature defences; and 3. Kwon and Lemon (2000) have argued that both cognitive and psychodynamic variables are needed in developing an understanding of how persons cope with stress.

As stated previously in this thesis it would be useful to conduct a factor analysis of a combination of these two scales derived from a large ($n > 300$) sample of mixed offenders (sex and non-sex offenders) since correlations between the CSQ and the DSQ indicate that there may be some item redundancy. Further, it has been found that instruments have different factor structures when factor analysed using data from forensic populations (Kroner and Reddon, 1992). Significant differences between sex-offenders and non-sex offenders on scales indicating poor coping with stressors derived from factors identified in such a study would be good evidence for poorer self-regulation in sex-offenders. It would also be possible to see if scores on such an instrument were significantly different in (sexual crime) recidivists and non-recidivists.

Self-regulatory skill and sex-offender subtypes

While there exist many possibilities for research on self-regulation ability in sex-offenders it also remains the case that not all sex-offenders may have poor self-regulatory skill. Indeed Hudson *et al.* (1999) argue that self-regulation failure precedes offending for only three of four sex-offender types (see Table 61) with the 'approach-active' (i.e. offenders who intend to offend and have an explicit offence

plan) offender exerting considerable self-regulatory skill (e.g., during the process of 'grooming' a child victim). Thus, it is clear that any research on sex-offenders and self-regulatory skill may require that approach-active sex-offender types be excluded when comparing sex offenders with non-sex offenders and non-offenders, or be treated as a separate group (e.g., experiments would compare approach-active sex offenders with non approach-active offenders, non-sex offenders and non-offenders). Alternatively, approach-active sex-offenders could be compared with non approach-active sex offenders in a similar way to the comparisons made between sex offenders who do and who do not deny their sexual offending (e.g., Nugent and Kroner, 1996).

In summary, many possibilities exist to further investigate the relationship between self-regulation and sexual offending. However, such research should control for the type of sex-offenders included in the study since it is argued that poor self-regulatory skill is not implicated in one type of sex-offender (Hudson *et al.*, 1999).

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Appendix 1

Information sheet for participants in cross-sectional survey.

Information for volunteers

We would be very grateful if you could take part in our research into the different ways people cope with stress. This research has been approved by an ethics committee. This research is **completely anonymous and confidential** – you do not give your name.

The questionnaires in this envelope ask a number of questions about the things people do to help them cope with stress. There are no right or wrong answers. If you choose to take part could you please complete the questionnaires, enter the details below and then post the envelope.

Thank you very much.

Please enter the following details:

Your age
Your ethnic group (please tick):
White UK
White other
Black African
Black Caribbean
Black UK
Indian
Pakistani
Bangladeshi
Chinese
Other